Appendix F:
Level-of-Service Analysis

Part 1: Existing and Future Pedestrian Report Card Assessment
Part 2: Existing Intersection Levels of Service
Part 3: Future Intersection Levels of Service

Pedestrian Report Card Assessments

1. Existing Conditions
2. Future with Improvements

BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Pedestrian Report Card Assessment (PRCA):

Roadway Segment

Roadway Segment Location
Route 16 (Revere Beach Parkway) – Chelsea and Everett, MA – Existing Conditions

Grading Categories	Score	Rating
Safety	1.0	Poor
System Preservation	1.0	Poor
Capacity Management and Mobility	1.7	Poor
Economic Vitality	1.5	Poor

Transportation Equity	
High Priority Area	√
Moderate Priority Area	
Low Priority Area	

Category Ratings
Good: Score 2.3 to 3.0
Fair: 2.3 > Score > 1.7
Poor: Score 1.7 to 0

Transportation Equity Priority
High: Four (4) or Five (5) Factors
Moderate: Two (2) or Three (3) Factors
Low: Zero (0) or One (1) Factor

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Grading Categories: Scoring Breakdown **Roadway Segment**

Capacity Management and Mobility

Performance Measure	Percentage	Score (out of 3.0)	Rating
Sidewalk Presence	50%	2	Fair
Crosswalk Presence	33%	1	Poor
Walkway Width	17%	2	Fair
TOTAL (Sidewalk Presence Score * 0.5) + (Crosswalk Presence Score * 0.33) + (Walkway Width Score * 0.17)	**100%**	**1.7**	**Poor**

Economic Vitality

Performance Measure	Percentage	Score (out of 3.0)	Rating
Pedestrian Volumes	50%	2	Fair
Adjacent Bicycle Accommodations	50%	1	Poor
TOTAL (Pedestrian Volumes Score * 0.5) + (Adjacent Bicycle Accommodations Score * 0.5)	**100%**	**1.5**	**Poor**

Meaning of Ratings
Good: 3.0
Fair: 2.0
Poor: 1.0

Transportation Equity Priority
High: Four (4) or Five (5) Factors
Moderate: Two (2) or Three (3) Factors
Low: Zero (0) or One (1) Factor

Safety

Performance Measure	Percentage	Score (out of 3.0)	Rating
Pedestrian Crashes	60%	1	Poor
Pedestrian-Vehicle Buffer	20%	1	Poor
Vehicle Travel Speed	20%	1	Poor
TOTAL (Pedestrian Crashes Score * 0.6) + (Pedestrian-Vehicle Buffer Score * 0.2) + (Vehicle Travel Speed Score * 0.2)	**100%**	**1**	**Poor**

System Preservation

Performance Measure	Percentage	Score (out of 3.0)	Rating
Sidewalk Condition	100%	1	Poor

Transportation Equity Priority

Area Condition	Yes/No
Low Income Population =/> 32.32%	√
Minority Population =/> 28.19%	√
6.69%+ of Population > 75 Years of Age	√
16.15%+ of Households w/o Vehicle	√
Within ¼ Mile of School/College	√

Roadway Segment Notes

Detailed Performance Measure Information

Goal	Performance Measure	Features of Analyzed Locations
Capacity Management and Mobility	Sidewalk Presence	Sidewalks are present on two side of the street, but there are gaps on sidewalk network
	Crosswalk Presence	8 crosswalks in 1.5 miles = 5.3 crosswalks per mile
	Walkway Width	4-7 foot sidewalks
Economic Vitality	Pedestrian Volumes	Estimated 5 to 60 pedestrians
	Adjacent Bicycle Accommodations	No bicycle infrastructure, shoulders only 1-2 feet wide
Safety	Pedestrian Crashes	1 HSIP pedestrian cluster and several pedestrian crashes at intersections
	Pedestrian-Vehicle Buffer	Less than 2 feet
	Vehicle Travel Speed	= 35 MPH
System Preservation	Sidewalk Condition	Poor

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Pedestrian Report Card Assessment (PRCA):

Roadway Segment

Roadway Segment Location
Route 16 (Revere Beach Parkway) – Chelsea and Everett—Future Conditions with improvements

Grading Categories	Score	Rating
Safety	2.4	Good
System Preservation	3	Good
Capacity Management and Mobility	2.7	Good
Economic Vitality	2.5	Good

Transportation Equity	
High Priority Area	√
Moderate Priority Area	
Low Priority Area	

Category Ratings
Good: Score 2.3 to 3.0
Fair: 2.3 > Score > 1.7
Poor: Score 1.7 to 0

Transportation Equity Priority
High: Four (4) or Five (5) Factors
Moderate: Two (2) or Three (3) Factors
Low: Zero (0) or One (1) Factor

Grading Categories: Scoring Breakdown **Roadway Segment**

Capacity Management and Mobility

Performance Measure	Percentage	Score (out of 3.0)	Rating
Sidewalk Presence	50%	3	Good
Crosswalk Presence	33%	2	Fair
Walkway Width	17%	3	Good
TOTAL (Sidewalk Presence Score * 0.5) + (Crosswalk Presence Score * 0.33) + (Walkway Width Score * 0.17)	**100%**	**2.7**	**Good**

Economic Vitality

Performance Measure	Percentage	Score (out of 3.0)	Rating
Pedestrian Volumes	50%	2	Fair
Adjacent Bicycle Accommodations	50%	3	Good
TOTAL (Pedestrian Volumes Score * 0.5) + (Adjacent Bicycle Accommodations Score * 0.5)	**100%**	**2.5**	**Good**

Meaning of Ratings
Good: 3.0
Fair: 2.0
Poor: 1.0

Transportation Equity Priority
High: Four (4) or Five (5) Factors
Moderate: Two (2) or Three (3) Factors
Low: Zero (0) or One (1) Factor

Safety

Performance Measure	Percentage	Score (out of 3.0)	Rating
Pedestrian Crashes	60%	3	Good
Pedestrian-Vehicle Buffer	20%	1	Poor
Vehicle Travel Speed	20%	2	Fair
TOTAL (Pedestrian Crashes Score * 0.6) + (Pedestrian-Vehicle Buffer Score * 0.2) + (Vehicle Travel Speed Score * 0.2)	**100%**	**2.4**	**Good**

System Preservation

Performance Measure	Percentage	Score (out of 3.0)	Rating
Sidewalk Condition	100%	**3**	**Good**

Transportation Equity Priority

Area Condition	Yes/No
Low Income Population =/> 32.32%	√
Minority Population =/> 28.19%	√
6.69%+ of Population > 75 Years of Age	√
16.15%+ of Households w/o Vehicle	√
Within ¼ Mile of School/College	√

Roadway Segment Notes

Detailed Performance Measure Information

Goal	Performance Measure	Features of Analyzed Locations
Capacity Management and Mobility	Sidewalk Presence	Five-foot sidewalk present on either side of roadway
	Crosswalk Presence	12 crosswalks in 1.5 miles about 8 crosswalks per mile
	Walkway Width	Sidewalks built to MassDOT standards
Economic Vitality	Pedestrian Volumes	Estimate 5-60 pedestrians per hour
	Adjacent Bicycle Accommodations	Multiuse path
Safety	Pedestrian Crashes	No HSIP pedestrian crash cluster
	Pedestrian-Vehicle Buffer	Less than 5 feet
	Vehicle Travel Speed	= 35 mph
System Preservation	Sidewalk Condition	Good

Bicycle Report Cards Assessments

1. Existing Conditions
2. Future Conditions with Improvements

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Bicycle Report Card

Roadway Segment Location
Route 16 (Revere Beach Parkway) Chelsea and Everett (Existing Conditions)

Grading Categories	Score	Grade
Safety	8.5	F
System Preservation	0	F
Capacity Management and Mobility	50	F
Economic Vitality	50	F

Transportation Equity	
High Priority Area	√
Moderate Priority Area	
Low Priority Area	

Grading
A: 90–100 *Excellent*
B: 80–89 *Satisfactory*
C: 70–79 *Acceptable*
D: 60–69 *Needs Improvement*
F: 59–0 *Not recommended for bicycle travel*

Transportation Equity Priority
High: Four (4) or Five (5) Factors
Moderate: Two (2) or Three (3) Factors
Low: Zero (0) or One (1) Factor

Grading Categories: Scoring Breakdown

Capacity Management and Mobility

Performance Measure	Percentage	Points	Grade
Bicycle Facility Presence	50%	0	F
Proximity to Bike Network	33%	100	A
Proximity to Transit	17%	100	A
Total	**100%**	**50**	**F**

Economic Vitality

Performance Measure	Percentage	Points	Grade
Bike Rack Presence	50%	0	F
Land Use	50%	100	A
Total	**100%**	**50**	**F**

Grading
A: 90–100 *Excellent*
B: 80–89 *Satisfactory*
C: 70–79 *Acceptable*
D: 60–69 *Needs Improvement*
F: 59–0 *Not recommended for bicycle travel*

Transportation Equity Priority
High: Four (4) or Five (5) Factors
Moderate: Two (2) or Three (3) Factors
Low: Zero (0) or One (1) Factor

Safety

Performance Measure	Percentage	Points	Grade
Bicycle Facility Presence	33%	0	F
Absence of Bicycle Crashes	33%	0	A
Bicyclist Operating Space	17%	0	F
Number of Travel Lanes	17%	50	A
Total	**100%**	**8.5**	**F**

System Preservation

Performance Measure	Percentage	Points	Grade
Bicycle Facility Continuity	50%	0	F
Bicycle Facility Condition	50%	0	F
Total	**100%**	**0**	**F**

Transportation Equity Priority

Area Condition	Yes/No
Low Income Population =/> 32.32%	√
Minority Population =/> 28.19%	√
18.2%+ of Population < 16 Years Old	√
16.15%+ of Households w/o Vehicle	√
Within ¼ Mile of School/College	√

Notes

Detailed Performance Measure Information

Goal	Performance Measure	Features of Analyzed Locations
Capacity Management and Mobility	Bicycle Facility Presence	No bicycle facility presence
	Proximity to Bike Network	North Strand Community and Chelsea Greenway bicycle facilities network within ¼ mile
	Proximity to Transit	Has bus routes 110, 111, and 112 cross it or run along portions of the corridor
Economic Vitality	Bike Rack Presence	No bicycle rack in the segment
	Land Use	Mixed use—educational, recreational, residential
Safety	Bicycle Facility Presence	No bicycle facility presence
	Absence of Bicycle Crashes	No HSIP bicycle crash cluster but there are 6 bicycle-related crashes in the corridor
	Bicyclist Operating Space	Bicycle operates in mixed traffic
	Number of Travel Lanes	Three travel lanes per direction
System Preservation	Bicycle Facility Continuity	No bicycle facility
	Bicycle Facility Condition	No bicycle facility

BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Bicycle Report Card

Roadway Segment Location
Route 16 (Revere Beach Parkway) Chelsea and Everett (Future Conditions with improvements)

Grading Categories	Score	Grade
Safety	81	B
System Preservation	75	C
Capacity Management and Mobility	75	C
Economic Vitality	100	A

Transportation Equity	
High Priority Area	√
Moderate Priority Area	
Low Priority Area	

Grading

A: 90–100 *Excellent*
B: 80–89 *Satisfactory*
C: 70–79 *Acceptable*
D: 60–69 *Needs Improvement*
F: 59–0 *Not recommended for bicycle travel*

Transportation Equity Priority

High: Four (4) or Five (5) Factors
Moderate: Two (2) or Three (3) Factors
Low: Zero (0) or One (1) Factor

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Grading Categories: Scoring Breakdown

Capacity Management and Mobility

Performance Measure	Percentage	Points	Grade
Bicycle Facility Presence	50%	50	F
Proximity to Bike Network	33%	100	A
Proximity to Transit	17%	100	A
Total	**100%**	**75**	**C**

Economic Vitality

Performance Measure	Percentage	Points	Grade
Bike Rack Presence	50%	100	A
Land Use	50%	100	A
Total	**100%**	**100**	**A**

Grading
A: 90–100 *Excellent*
B: 80–89 *Satisfactory*
C: 70–79 *Acceptable*
D: 60–69 *Needs Improvement*
F: 59–0 *Not recommended for bicycle travel*

Transportation Equity Priority
High: Four (4) or Five (5) Factors
Moderate: Two (2) or Three (3) Factors
Low: Zero (0) or One (1) Factor

Safety

Performance Measure	Percentage	Points	Grade
Bicycle Facility Presence	33%	100	A
Absence of Bicycle Crashes	33%	70	C
Bicyclist Operating Space	17%	100	A
Number of Travel Lanes	17%	50	F
Total	**100%**	**81**	**B**

System Preservation

Performance Measure	Percentage	Points	Grade
Bicycle Facility Continuity	50%	50	F
Bicycle Facility Condition	50%	100	A
Total	**100%**	**75**	**C**

Transportation Equity Priority

Area Condition	Yes/No
Low Income Population =/> 32.32%	√
Minority Population =/> 28.19%	√
18.2%+ of Population < 16 Years Old	√
16.15%+ of Households w/o Vehicle	√
Within ¼ Mile of School/College	√

Notes

Detailed Performance Measure Information

Goal	Performance Measure	Features of Analyzed Locations
Capacity Management and Mobility	Bicycle Facility Presence	Multiuse path proposed for one-half of the corridor
	Proximity to Bike Network	North Strand Community and Chelsea Greenway bicycle facilities network within ¼ mile
	Proximity to Transit	Has bus routes 110, 111, and 112 cross it or run along portions of the corridor
Economic Vitality	Bike Rack Presence	Bicycle racks in the segment with multiuse path
	Land Use	Mixed use—educational, recreational, residential
Safety	Bicycle Facility Presence	Multiuse path proposed for one-half of the corridor
	Absence of Bicycle Crashes	No HSIP bicycle crash cluster
	Bicyclist Operating Space	Multiuse path one half of the corridor, bicycle operates in mixed traffic one half of the corridor
	Number of Travel Lanes	Three travel lanes per direction
System Preservation	Bicycle Facility Continuity	Propose multiuse path connects Chelsea Greenway and Northern Strand Community Trail
	Bicycle Facility Condition	Good

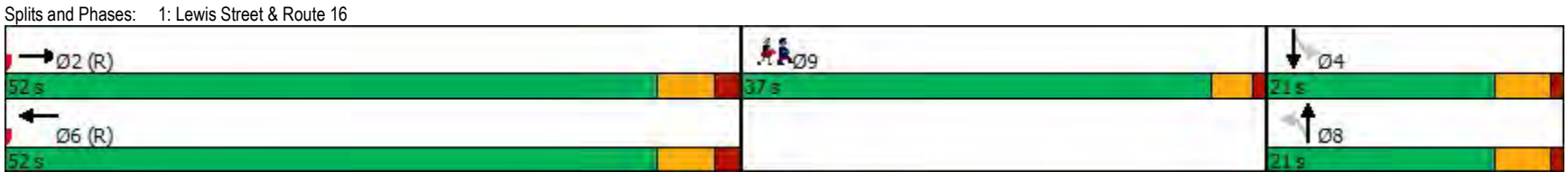
Part 2: Existing Intersection Levels of Service

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1584	8	0	2047	6	23	10	12	19	18	36	
Future Volume (vph)	0	1584	8	0	2047	6	23	10	12	19	18	36	
Satd. Flow (prot)	0	2021	0	0	2940	0	0	1709	0	0	1695	0	
Flt Permitted								0.810			0.908		
Satd. Flow (perm)	0	2021	0	0	2940	0	0	1406	0	0	1559	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	1712	0	0	2232	0	0	55	0	0	97	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		52.0			52.0		21.0	21.0		21.0	21.0		37.0
Total Lost Time (s)		6.0			6.0			5.0			5.0		
Act Effct Green (s)		80.6			80.6			14.0			14.0		
Actuated g/C Ratio		0.73			0.73			0.13			0.13		
v/c Ratio		1.16			1.04			0.31			0.49		
Control Delay		96.3			45.3			46.9			52.4		
Queue Delay		0.0			0.0			0.0			0.0		
Total Delay		96.3			45.3			46.9			52.4		
LOS		F			D			D			D		
Approach Delay		96.3			45.3			46.9			52.4		
Approach LOS		F			D			D			D		
Queue Length 50th (ft)		~502			328			36			65		
Queue Length 95th (ft)		#731			m#597			66			93		
Internal Link Dist (ft)		532			675			497			190		
Turn Bay Length (ft)													
Base Capacity (vph)		1481			2155			211			234		
Starvation Cap Reductn		0			0			0			0		
Spillback Cap Reductn		0			0			0			0		
Storage Cap Reductn		0			0			0			0		
Reduced v/c Ratio		1.16			1.04			0.26			0.41		

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 55 (50%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 66.8	Intersection LOS: E
Intersection Capacity Utilization 63.0%	ICU Level of Service B
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Lewis Street & Route 16

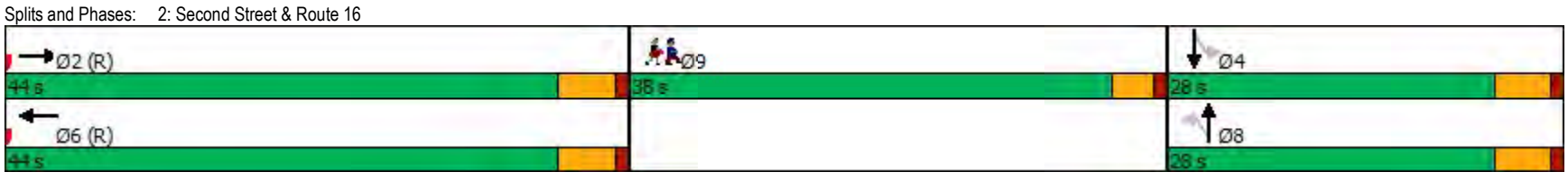


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1187	428	0	1790	92	178	37	3	28	56	73	
Future Volume (vph)	0	1187	428	0	1790	92	178	37	3	28	56	73	
Satd. Flow (prot)	0	4275	0	0	4996	0	0	632	0	0	1718	0	
Flt Permitted								0.630			0.925		
Satd. Flow (perm)	0	4275	0	0	4996	0	0	569	0	0	1601	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	1700	0	0	2139	0	0	273	0	0	200	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		44.0			44.0		28.0	28.0		28.0	28.0		38.0
Total Lost Time (s)		5.0			5.0			5.0			5.0		
Act Effct Green (s)		39.0			39.0			56.6			56.6		
Actuated g/C Ratio		0.35			0.35			0.51			0.51		
v/c Ratio		1.12			1.21			0.93			0.24		
Control Delay		87.6			111.3			66.7			17.9		
Queue Delay		0.1			0.0			0.0			0.0		
Total Delay		87.7			111.3			66.7			17.9		
LOS		F			F			E			B		
Approach Delay		87.7			111.3			66.7			17.9		
Approach LOS		F			F			E			B		
Queue Length 50th (ft)		~506			~654			196			68		
Queue Length 95th (ft)		m280			m#603			#477			131		
Internal Link Dist (ft)		675			412			757			460		
Turn Bay Length (ft)													
Base Capacity (vph)		1515			1771			292			823		
Starvation Cap Reductn		0			8			0			0		
Spillback Cap Reductn		54			0			0			0		
Storage Cap Reductn		0			0			0			0		
Reduced v/c Ratio		1.16			1.21			0.93			0.24		

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 47 (43%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 94.8	Intersection LOS: F
Intersection Capacity Utilization 70.2%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Second Street & Route 16



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	10	55	1139	8	19	13	1675	23	34	18	29	37	42	163	
Future Volume (vph)	10	55	1139	8	19	13	1675	23	34	18	29	37	42	163	
Satd. Flow (prot)	0	1405	4844	0	0	1347	4856	0	0	1316	0	0	1372	0	
Flt Permitted		0.950				0.950				0.809			*0.810		
Satd. Flow (perm)	0	1403	4844	0	0	1342	4856	0	0	1183	0	0	1234	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	78	1382	0	0	37	1951	0	0	100	0	0	244	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	15.0	15.0	40.0		14.0	14.0	39.0		18.0	18.0		18.0	18.0		38.0
Total Lost Time (s)		5.0	5.0			5.0	5.0			6.0			6.0		
Act Effct Green (s)		9.5	46.3			8.2	42.3			39.9			39.9		
Actuated g/C Ratio		0.09	0.42			0.07	0.38			0.36			0.36		
v/c Ratio		0.64	0.68			0.37	1.04			0.23			0.55		
Control Delay		66.3	28.8			71.9	54.7			29.9			36.7		
Queue Delay		0.0	0.2			0.0	23.4			0.0			0.0		
Total Delay		66.3	29.0			71.9	78.0			29.9			36.7		
LOS		E	C			E	E			C			D		
Approach Delay			31.0				77.9			29.9			36.7		
Approach LOS			C				E			C			D		
Queue Length 50th (ft)		64	187			28	385			54			152		
Queue Length 95th (ft)		m65	m176			m42	#701			108			#337		
Internal Link Dist (ft)			412				550			363			385		
Turn Bay Length (ft)		150				225									
Base Capacity (vph)		132	2037			110	1868			429			447		
Starvation Cap Reductn		0	112			0	0			0			0		
Spillback Cap Reductn		0	0			0	394			0			0		
Storage Cap Reductn		0	0			0	0			0			0		
Reduced v/c Ratio		0.59	0.72			0.34	1.32			0.23			0.55		

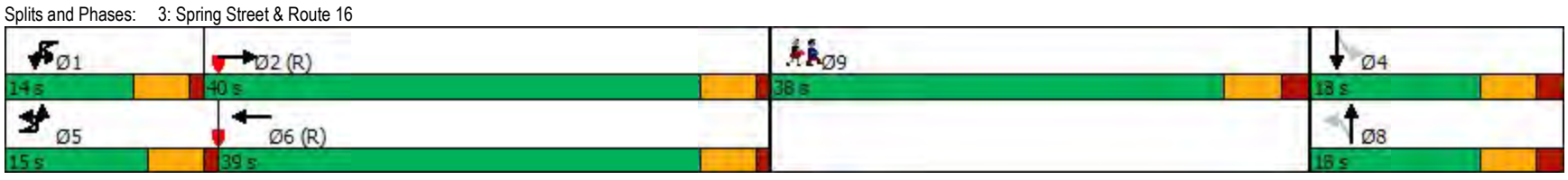
Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 44 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 55.9	Intersection LOS: E
Intersection Capacity Utilization 67.9%	ICU Level of Service C
Analysis Period (min) 15	

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Spring Street & Route 16

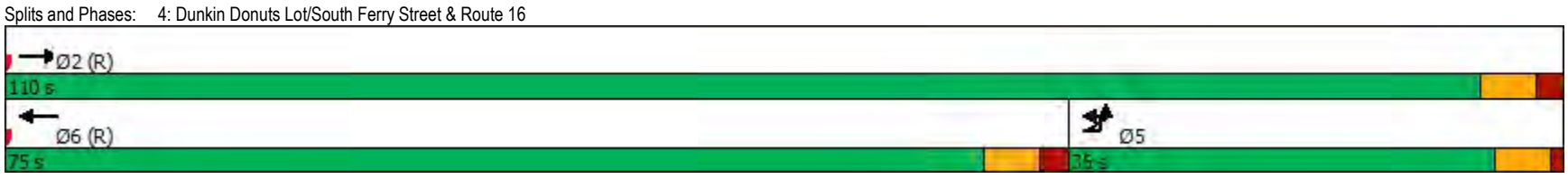


Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	15	126	977	0	0	1591	128	0	0	92	0	0	0
Future Volume (vph)	15	126	977	0	0	1591	128	0	0	92	0	0	0
Satd. Flow (prot)	0	1121	3409	0	0	3415	0	0	0	1406	0	0	0
Flt Permitted		0.800											
Satd. Flow (perm)	0	1120	4262	0	0	3415	0	0	0	1406	0	0	0
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	166	1149	0	0	1810	0	0	0	184	0	0	0
Turn Type	Prot	Prot	NA			NA				Perm			
Protected Phases	5	5	2			6							
Permitted Phases										2			
Total Split (s)	35.0	35.0	110.0			75.0				110.0			
Total Lost Time (s)		5.0	6.0			6.0				6.0			
Act Effct Green (s)		21.3	110.0			77.7				110.0			
Actuated g/C Ratio		0.19	1.00			0.71				1.00			
v/c Ratio		0.77	0.34			0.75				0.13			
Control Delay		54.9	1.3			29.7				0.2			
Queue Delay		0.0	0.0			0.8				0.0			
Total Delay		54.9	1.3			30.5				0.2			
LOS		D	A			C				A			
Approach Delay			8.1			30.5			0.2				
Approach LOS			A			C			A				
Queue Length 50th (ft)		156	10			520				0			
Queue Length 95th (ft)		230	23			m539				0			
Internal Link Dist (ft)			550			503			557			380	
Turn Bay Length (ft)		225											
Base Capacity (vph)		305	3409			2412				1406			
Starvation Cap Reductn		0	0			298				0			
Spillback Cap Reductn		0	0			0				0			
Storage Cap Reductn		0	0			0				0			
Reduced v/c Ratio		0.54	0.34			0.86				0.13			

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 20 (18%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 19.9	Intersection LOS: B
Intersection Capacity Utilization 50.6%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Dunkin Donuts Lot/South Ferry Street & Route 16

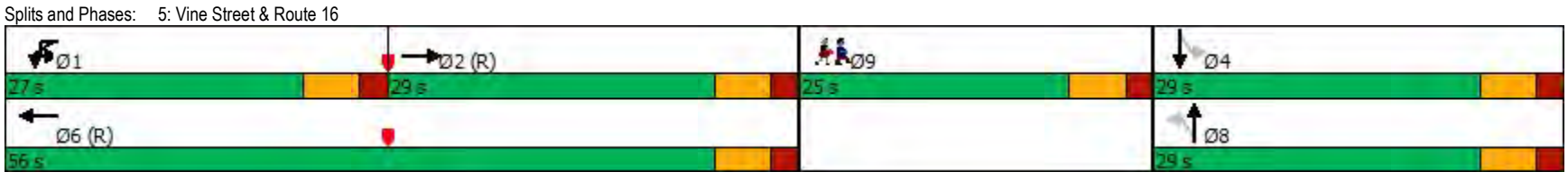


Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	970	99	1	38	1486	22	52	53	28	41	170	181	
Future Volume (vph)	0	970	99	1	38	1486	22	52	53	28	41	170	181	
Satd. Flow (prot)	0	4158	0	0	1301	4853	0	0	1166	0	0	1224	0	
Flt Permitted					0.900				0.545			0.940		
Satd. Flow (perm)	0	4158	0	0	1289	4853	0	0	705	0	0	1277	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1125	0	0	41	1587	0	0	180	0	0	516	0	
Turn Type		NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases		2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)		29.0		27.0	27.0	56.0		29.0	29.0		29.0	29.0		25.0
Total Lost Time (s)		6.0			6.0	6.0			6.0			6.0		
Act Effct Green (s)		40.9			8.7	50.0			43.2			43.2		
Actuated g/C Ratio		0.37			0.08	0.45			0.39			0.39		
v/c Ratio		0.73			0.40	0.72			0.65			1.03		
Control Delay		32.7			53.7	25.6			43.1			82.1		
Queue Delay		0.0			0.0	0.2			0.7			16.4		
Total Delay		32.7			53.7	25.8			43.8			98.5		
LOS		C			D	C			D			F		
Approach Delay		32.7				26.5			43.8			98.5		
Approach LOS		C				C			D			F		
Queue Length 50th (ft)		307			32	253			117			421		
Queue Length 95th (ft)		#372			m68	494			#275			#765		
Internal Link Dist (ft)		503				521			407			333		
Turn Bay Length (ft)					100									
Base Capacity (vph)		1546			248	2205			276			501		
Starvation Cap Reductn		0			0	118			0			0		
Spillback Cap Reductn		0			0	0			12			22		
Storage Cap Reductn		0			0	0			0			0		
Reduced v/c Ratio		0.73			0.17	0.76			0.68			1.08		

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 40.2	Intersection LOS: D
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

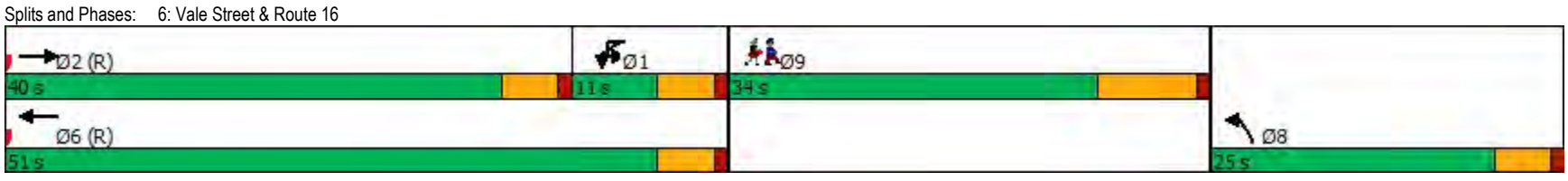
Splits and Phases: 5: Vine Street & Route 16



Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR	Ø9
Lane Configurations								
Traffic Volume (vph)	921	134	3	5	1425	117	2	
Future Volume (vph)	921	134	3	5	1425	117	2	
Satd. Flow (prot)	4178	0	0	1504	4868	1720	0	
Flt Permitted				0.900		0.953		
Satd. Flow (perm)	4178	0	0	1479	4868	1712	0	
Satd. Flow (RTOR)								
Lane Group Flow (vph)	1159	0	0	8	1566	151	0	
Turn Type	NA		Prot	Prot	NA	Prot		
Protected Phases	2		1	1	6	8		9
Permitted Phases								
Total Split (s)	40.0		11.0	11.0	51.0	25.0		34.0
Total Lost Time (s)	5.0			5.0	5.0	5.0		
Act Effct Green (s)	78.6			6.0	80.8	14.0		
Actuated g/C Ratio	0.71			0.05	0.73	0.13		
v/c Ratio	0.39			0.10	0.44	0.69		
Control Delay	9.5			52.3	8.5	61.8		
Queue Delay	0.0			0.0	0.0	0.0		
Total Delay	9.5			52.3	8.5	61.8		
LOS	A			D	A	E		
Approach Delay	9.5				8.7	61.8		
Approach LOS	A				A	E		
Queue Length 50th (ft)	9			6	105	104		
Queue Length 95th (ft)	m347			24	343	141		
Internal Link Dist (ft)	521				488	647		
Turn Bay Length (ft)				150				
Base Capacity (vph)	2986			82	3576	312		
Starvation Cap Reductn	0			0	0	0		
Spillback Cap Reductn	0			0	0	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.39			0.10	0.44	0.48		

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 47 (43%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 11.8	Intersection LOS: B
Intersection Capacity Utilization 42.5%	ICU Level of Service A
Analysis Period (min) 15	
Description: Note: Splits and offsets need to be optimized via synchro due to lack of coordination data	
m Volume for 95th percentile queue is metered by upstream signal.	

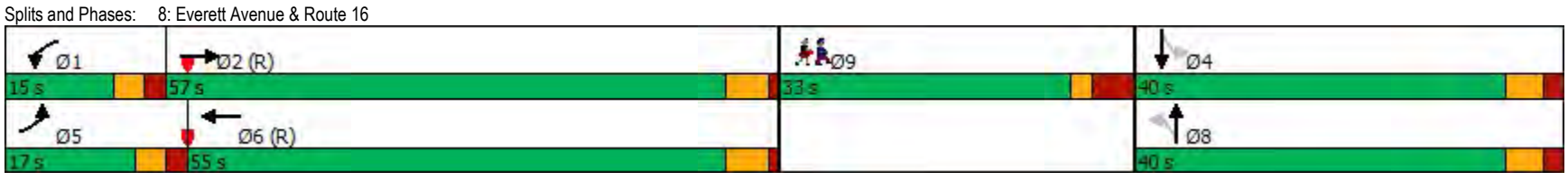
Splits and Phases: 6: Vale Street & Route 16



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	73	745	146	76	1387	8	126	76	34	71	221	51	
Future Volume (vph)	73	745	146	76	1387	8	126	76	34	71	221	51	
Satd. Flow (prot)	1694	4457	0	1631	4808	0	1711	1606	0	1678	1735	0	
Flt Permitted	0.950			0.950			0.396			0.650			
Satd. Flow (perm)	1694	4457	0	1611	4808	0	709	1606	0	1143	1735	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	86	1048	0	79	1453	0	152	133	0	89	340	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	17.0	57.0		15.0	55.0		40.0	40.0		40.0	40.0		33.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.5	5.5		5.5	5.5		
Act Effct Green (s)	10.5	52.6		9.4	51.5		54.3	54.3		54.3	54.3		
Actuated g/C Ratio	0.07	0.36		0.06	0.36		0.37	0.37		0.37	0.37		
v/c Ratio	0.70	0.65		0.75	0.85		0.57	0.22		0.21	0.52		
Control Delay	94.5	40.9		105.2	49.3		50.8	37.2		38.3	42.9		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	94.5	40.9		105.2	49.3		50.8	37.2		38.3	42.9		
LOS	F	D		F	D		D	D		D	D		
Approach Delay		44.9			52.2			44.4			42.0		
Approach LOS		D			D			D			D		
Queue Length 50th (ft)	80	303		74	470		96	72		48	210		
Queue Length 95th (ft)	132	329		#158	537		#246	156		109	369		
Internal Link Dist (ft)		406			387			396			538		
Turn Bay Length (ft)	150			100			100			100			
Base Capacity (vph)	140	1618		112	1708		265	601		428	649		
Starvation Cap Reductn	0	0		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.61	0.65		0.71	0.85		0.57	0.22		0.21	0.52		

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 82 (57%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 47.8	Intersection LOS: D
Intersection Capacity Utilization 71.9%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

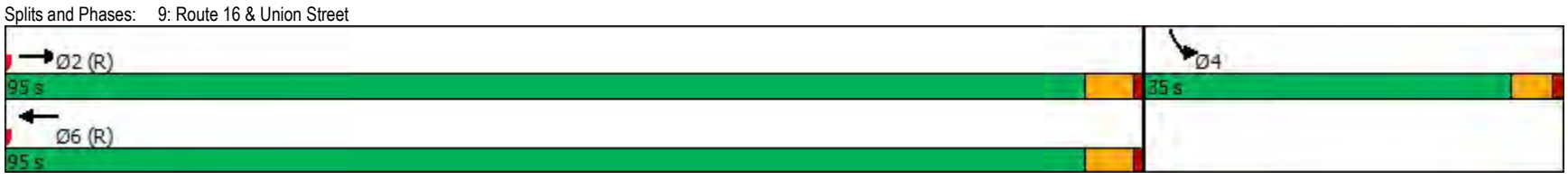
Splits and Phases: 8: Everett Avenue & Route 16



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	852	1487	182	175	12
Future Volume (vph)	0	852	1487	182	175	12
Satd. Flow (prot)	0	4600	4703	0	1761	0
Flt Permitted					0.955	
Satd. Flow (perm)	0	4600	4703	0	1761	0
Satd. Flow (RTOR)						
Lane Group Flow (vph)	0	979	1721	0	205	0
Turn Type		NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases						
Total Split (s)		95.0	95.0		35.0	
Total Lost Time (s)		5.0	5.0		4.5	
Act Effct Green (s)		101.0	101.0		19.5	
Actuated g/C Ratio		0.78	0.78		0.15	
v/c Ratio		0.27	0.47		0.78	
Control Delay		4.7	6.0		72.2	
Queue Delay		0.0	1.1		0.0	
Total Delay		4.7	7.2		72.2	
LOS		A	A		E	
Approach Delay		4.7	7.2		72.2	
Approach LOS		A	A		E	
Queue Length 50th (ft)		72	158		168	
Queue Length 95th (ft)		109	238		241	
Internal Link Dist (ft)		219	319		460	
Turn Bay Length (ft)						
Base Capacity (vph)		3573	3653		413	
Starvation Cap Reductn		0	1582		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.27	0.83		0.50	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 89 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 10.9	Intersection LOS: B
Intersection Capacity Utilization 51.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: Route 16 & Union Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	80	769	178	179	1429	33	136	89	19	57	190	104	
Future Volume (vph)	80	769	178	179	1429	33	136	89	19	57	190	104	
Satd. Flow (prot)	1694	4510	0	1662	4742	0	1719	1655	0	1736	1642	0	
Flt Permitted	0.950			0.950			*0.600			0.633			
Satd. Flow (perm)	1687	4510	0	1662	4742	0	1059	1655	0	1118	1642	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	88	1041	0	197	1539	0	160	127	0	63	323	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	16.0	65.0		18.0	67.0		31.0	31.0		31.0	31.0		28.0
Total Lost Time (s)	6.0	5.0		5.5	5.0		6.0	6.0		6.0	6.0		
Act Effct Green (s)	10.1	60.0		19.8	69.1		34.5	34.5		34.5	34.5		
Actuated g/C Ratio	0.07	0.42		0.14	0.49		0.24	0.24		0.24	0.24		
v/c Ratio	0.73	0.55		0.85	0.67		0.62	0.32		0.23	0.81		
Control Delay	96.4	32.1		89.0	30.3		61.8	49.6		49.7	67.5		
Queue Delay	0.0	3.5		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	96.4	35.7		89.0	30.3		61.8	49.6		49.7	67.5		
LOS	F	D		F	C		E	D		D	E		
Approach Delay		40.4			36.9			56.4			64.6		
Approach LOS		D			D			E			E		
Queue Length 50th (ft)	80	261		169	359		128	93		45	272		
Queue Length 95th (ft)	#171	308		#401	489		#253	163		100	#538		
Internal Link Dist (ft)		319			1066			414			597		
Turn Bay Length (ft)	100			150			150			150			
Base Capacity (vph)	125	1905		231	2308		257	402		271	399		
Starvation Cap Reductn	0	749		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.70	0.90		0.85	0.67		0.62	0.32		0.23	0.81		

Intersection Summary

Cycle Length: 142
Actuated Cycle Length: 142
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 42.6 — Intersection LOS: D
Intersection Capacity Utilization 79.6% — ICU Level of Service D
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Washington Avenue & Route 16

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	748	113	136	203	1752	1	218	122	168	214	167	233	
Future Volume (vph)	0	748	113	136	203	1752	1	218	122	168	214	167	233	
Satd. Flow (prot)	0	4566	0	0	1661	4700	0	1641	1802	0	1770	1856	0	
Flt Permitted					0.950			*0.600			*0.600			
Satd. Flow (perm)	0	4566	0	0	1656	4700	0	1036	1802	0	1112	1856	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	978	0	0	414	1885	0	248	354	0	252	460	0	
Turn Type		NA		Prot	Prot	NA		pm+pt	NA		pm+pt	NA		
Protected Phases		2		1	1	6		3	8		7	4		9
Permitted Phases								8			4			
Total Split (s)		50.0		36.0	36.0	86.0		18.0	36.0		21.0	39.0		34.0
Total Lost Time (s)		5.0			6.0	5.0		6.0	5.0		6.0	5.0		
Act Effct Green (s)		37.7			30.6	74.4		42.9	31.7		49.0	34.7		
Actuated g/C Ratio		0.25			0.21	0.50		0.29	0.21		0.33	0.23		
v/c Ratio		0.85			1.21	0.80		0.71	0.92		0.58	1.06		
Control Delay		61.4			167.2	35.9		57.1	87.6		48.3	113.5		
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		61.4			167.2	35.9		57.1	87.6		48.3	113.5		
LOS		E			F	D		E	F		D	F		
Approach Delay		61.4				59.6			75.0			90.4		
Approach LOS		E				E			E			F		
Queue Length 50th (ft)		291			~416	448		158	299		159	403		
Queue Length 95th (ft)		438			#764	771		#372	#583		314	#852		
Internal Link Dist (ft)		409				879			820			473		
Turn Bay Length (ft)					100			150			100			
Base Capacity (vph)		1411			342	2615		348	383		434	433		
Starvation Cap Reductn		0			0	0		0	0		0	0		
Spillback Cap Reductn		0			0	0		0	0		0	0		
Storage Cap Reductn		0			0	0		0	0		0	0		
Reduced v/c Ratio		0.69			1.21	0.72		0.71	0.92		0.58	1.06		

Intersection Summary	
Cycle Length: 177	
Actuated Cycle Length: 148.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 66.8	Intersection LOS: E
Intersection Capacity Utilization 89.3%	ICU Level of Service E
Analysis Period (min) 15	

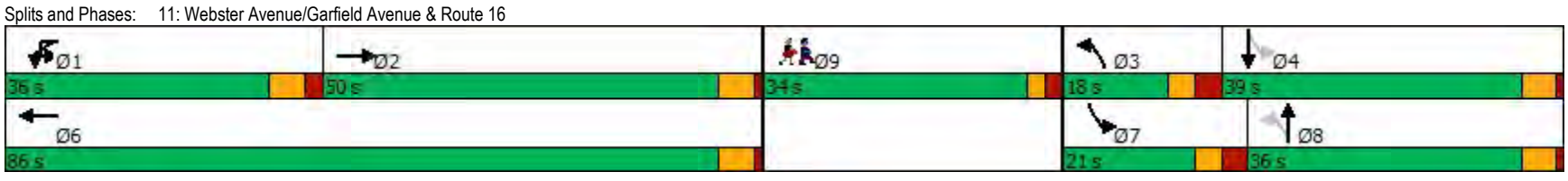
Description: Note: Phase 7 shows minimum green = 20 while maximum green = 12. Also, phases 1,2,6 show Recall = EXT - I used Min

* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Webster Avenue/Garfield Avenue & Route 16



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	2426	29	0	2154	5	22	14	9	9	14	27	
Future Volume (vph)	0	2426	29	0	2154	5	22	14	9	9	14	27	
Satd. Flow (prot)	0	2719	0	0	3131	0	0	1616	0	0	1530	0	
Flt Permitted								0.792			0.949		
Satd. Flow (perm)	0	2719	0	0	3131	0	0	1411	0	0	1610	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2612	0	0	2272	0	0	64	0	0	57	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		80.0			80.0		33.0	33.0		33.0	33.0		37.0
Total Lost Time (s)		6.0			6.0			5.0			5.0		
Act Effct Green (s)		120.6			120.6			13.6			13.5		
Actuated g/C Ratio		0.80			0.80			0.09			0.09		
v/c Ratio		1.20			0.90			0.50			0.40		
Control Delay		111.8			23.6			77.6			71.2		
Queue Delay		0.9			0.0			0.0			0.0		
Total Delay		112.7			23.6			77.6			71.2		
LOS		F			C			E			E		
Approach Delay		112.7			23.6			77.6			71.2		
Approach LOS		F			C			E			E		
Queue Length 50th (ft)		~1096			320			61			54		
Queue Length 95th (ft)		#1358			m#958			84			97		
Internal Link Dist (ft)		532			675			497			190		
Turn Bay Length (ft)													
Base Capacity (vph)	2185		2516		263		300						
Starvation Cap Reductn	0		0		0		0						
Spillback Cap Reductn	602		0		0		0						
Storage Cap Reductn	0		0		0		0						
Reduced v/c Ratio	1.65		0.90		0.24		0.19						

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 80 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 71.3	Intersection LOS: E
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

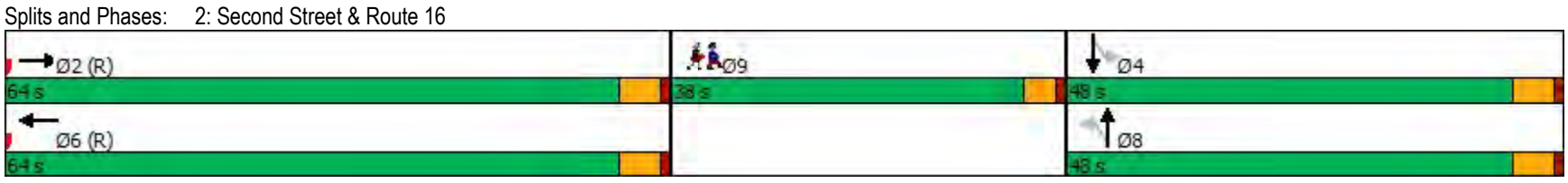
Splits and Phases: 1: Lewis Street & Route 16

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	2027	417	0	1839	128	268	51	2	45	41	52	
Future Volume (vph)	0	2027	417	0	1839	128	268	51	2	45	41	52	
Satd. Flow (prot)	0	4885	0	0	5029	0	0	895	0	0	1760	0	
Flt Permitted								0.651			0.801		
Satd. Flow (perm)	0	4885	0	0	5029	0	0	828	0	0	1432	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2573	0	0	1987	0	0	353	0	0	159	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		64.0			64.0		48.0	48.0		48.0	48.0		38.0
Total Lost Time (s)		5.0			5.0			5.0			5.0		
Act Effct Green (s)		59.0			59.0			76.6			76.6		
Actuated g/C Ratio		0.39			0.39			0.51			0.51		
v/c Ratio		1.34			1.00			0.83			0.22		
Control Delay		188.0			37.4			50.6			23.0		
Queue Delay		0.0			11.1			0.0			0.0		
Total Delay		188.0			48.5			50.6			23.0		
LOS		F			D			D			C		
Approach Delay		188.0			48.5			50.6			23.0		
Approach LOS		F			D			D			C		
Queue Length 50th (ft)		~1200			~215			269			78		
Queue Length 95th (ft)		m#880			m#810			#591			159		
Internal Link Dist (ft)		675			412			757			460		
Turn Bay Length (ft)													
Base Capacity (vph)	1921		1978		423		731						
Starvation Cap Reductn	0		66		0		0						
Spillback Cap Reductn	0		0		0		0						
Storage Cap Reductn	0		0		0		0						
Reduced v/c Ratio	1.34		1.04		0.83		0.22						

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 68 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.34	
Intersection Signal Delay: 118.6	Intersection LOS: F
Intersection Capacity Utilization 81.3%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Second Street & Route 16



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	35	114	1871	45	39	44	1742	50	49	50	60	26	35	132	
Future Volume (vph)	35	114	1871	45	39	44	1742	50	49	50	60	26	35	132	
Satd. Flow (prot)	0	1720	5111	0	0	1727	4894	0	0	1405	0	0	1371	0	
Flt Permitted		0.950				0.950				0.769			0.934		
Satd. Flow (perm)	0	1709	5111	0	0	1717	4894	0	0	1200	0	0	1422	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	178	2038	0	0	98	1829	0	0	194	0	0	242	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	20.0	20.0	73.0		15.0	15.0	68.0		24.0	24.0		24.0	24.0		38.0
Total Lost Time (s)		5.0	5.0			5.0	5.0			6.0			6.0		
Act Effct Green (s)		15.0	68.4			9.6	63.0			46.4			46.4		
Actuated g/C Ratio		0.10	0.46			0.06	0.42			0.31			0.31		
v/c Ratio		1.03	0.88			0.88	0.89			0.52			0.55		
Control Delay		120.4	8.9			91.4	54.7			52.0			51.7		
Queue Delay		0.0	11.1			0.0	46.4			0.0			0.0		
Total Delay		120.4	20.0			91.4	101.1			52.0			51.7		
LOS		F	B			F	F			D			D		
Approach Delay			28.0				100.6			52.0			51.7		
Approach LOS			C				F			D			D		
Queue Length 50th (ft)		~190	55			92	694			157			197		
Queue Length 95th (ft)		m143	m41			m101	743			266			320		
Internal Link Dist (ft)			412				550			363			385		
Turn Bay Length (ft)	150				225										
Base Capacity (vph)	172	2329			115	2055			371			439			
Starvation Cap Reductn	0	305			0	462			0			0			
Spillback Cap Reductn	0	88			0	170			0			0			
Storage Cap Reductn	0	0			0	0			0			0			
Reduced v/c Ratio	1.03	1.01			0.85	1.15			0.52			0.55			

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 71 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 60.9 Intersection LOS: E
Intersection Capacity Utilization 74.9% ICU Level of Service D
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

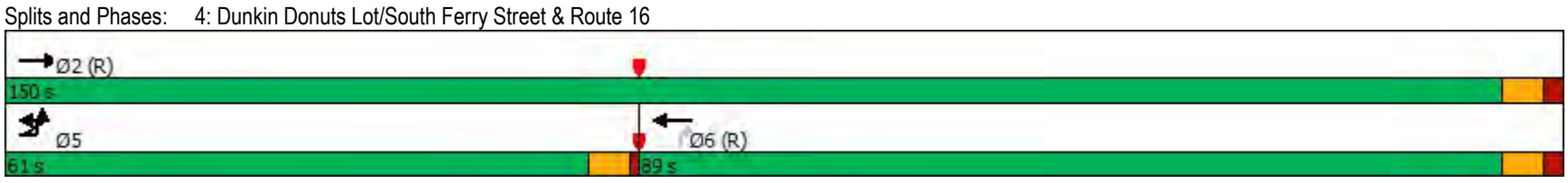
Splits and Phases: 3: Spring Street & Route 16

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	21	330	1645	0	0	1808	69	0	0	72	0	0	0
Future Volume (vph)	21	330	1645	0	0	1808	69	0	0	72	0	0	0
Satd. Flow (prot)	0	1165	3576	0	0	3484	0	0	0	1655	0	0	0
Flt Permitted		0.800											
Satd. Flow (perm)	0	1163	4471	0	0	3484	0	0	0	1655	0	0	0
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	366	1714	0	0	1915	0	0	0	129	0	0	0
Turn Type	Prot	Prot	NA			NA				Perm			
Protected Phases	5	5	2			6							
Permitted Phases										6			
Total Split (s)	61.0	61.0	150.0			89.0				89.0			
Total Lost Time (s)		5.0	6.0			6.0				6.0			
Act Effct Green (s)		50.0	150.0			89.0				89.0			
Actuated g/C Ratio		0.33	1.00			0.59				0.59			
v/c Ratio		0.94	0.48			0.93				0.13			
Control Delay		43.6	2.4			20.6				15.1			
Queue Delay		55.0	0.3			45.4				0.2			
Total Delay		98.6	2.7			66.0				15.4			
LOS		F	A			E				B			
Approach Delay			19.6			66.0			15.4				
Approach LOS			B			E			B				
Queue Length 50th (ft)		176	56			792				56			
Queue Length 95th (ft)		m326	0			m#901				57			
Internal Link Dist (ft)			550			503			557			380	
Turn Bay Length (ft)	225												
Base Capacity (vph)	434	3576		2067			982						
Starvation Cap Reductn	0	0		456			0						
Spillback Cap Reductn	164	1043		361			436						
Storage Cap Reductn	0	0		0			0						
Reduced v/c Ratio	1.36	0.68		1.19			0.24						

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 147 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 41.0 Intersection LOS: D
Intersection Capacity Utilization 65.1% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Dunkin Donuts Lot/South Ferry Street & Route 16

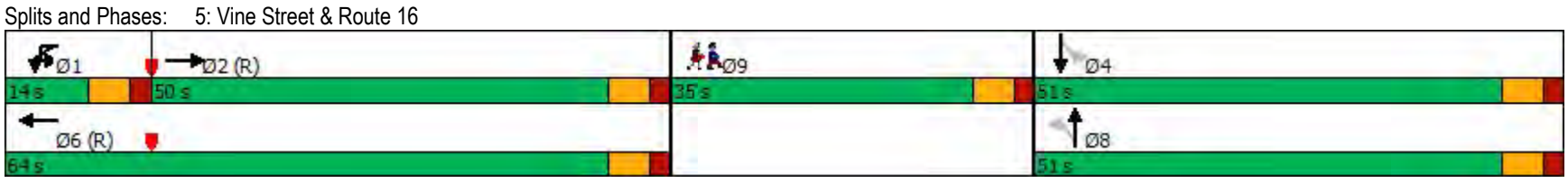


Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1631	86	18	24	1606	139	135	194	29	54	101	136	
Future Volume (vph)	0	1631	86	18	24	1606	139	135	194	29	54	101	136	
Satd. Flow (prot)	0	4862	0	0	1669	4846	0	0	1618	0	0	1397	0	
Flt Permitted					0.950				0.662			0.833		
Satd. Flow (perm)	0	4862	0	0	1643	4846	0	0	1089	0	0	1292	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1770	0	0	49	1799	0	0	421	0	0	343	0	
Turn Type		NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases		2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)		50.0		14.0	14.0	64.0		51.0	51.0		51.0	51.0		35.0
Total Lost Time (s)		6.0			6.0	6.0			6.0			6.0		
Act Effct Green (s)		46.8			8.0	58.0			70.4			70.4		
Actuated g/C Ratio		0.31			0.05	0.39			0.47			0.47		
v/c Ratio		1.17			0.55	0.96			0.83			0.57		
Control Delay		120.9			103.3	48.9			51.0			36.3		
Queue Delay		0.4			0.0	43.8			0.0			0.0		
Total Delay		121.3			103.3	92.7			51.0			36.3		
LOS		F			F	F			D			D		
Approach Delay		121.3				92.9			51.0			36.3		
Approach LOS		F				F			D			D		
Queue Length 50th (ft)		~805			46	645			338			231		
Queue Length 95th (ft)		#899			m84	#479			#664			420		
Internal Link Dist (ft)		503				521			407			333		
Turn Bay Length (ft)					100									
Base Capacity (vph)	1517			89	1873			510			606			
Starvation Cap Reductn	0			0	34			0			0			
Spillback Cap Reductn	155			0	569			0			0			
Storage Cap Reductn	0			0	0			0			0			
Reduced v/c Ratio	1.30			0.55	1.38			0.83			0.57			

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 95.9	Intersection LOS: F
Intersection Capacity Utilization 81.2%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

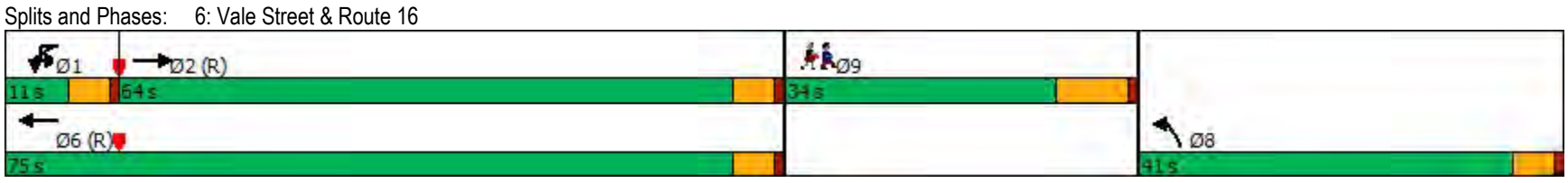
Splits and Phases: 5: Vine Street & Route 16



Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR	Ø9
Lane Configurations								
Traffic Volume (vph)	1573	159	5	0	1415	372	8	
Future Volume (vph)	1573	159	5	0	1415	372	8	
Satd. Flow (prot)	4409	0	0	1504	4916	1787	0	
Flt Permitted				0.900		0.953		
Satd. Flow (perm)	4409	0	0	1478	4916	1763	0	
Satd. Flow (RTOR)								
Lane Group Flow (vph)	1805	0	0	5	1459	422	0	
Turn Type	NA		Prot	Prot	NA	Prot		
Protected Phases	2		1	1	6	8		9
Permitted Phases								
Total Split (s)	64.0		11.0	11.0	75.0	41.0		34.0
Total Lost Time (s)	5.0			5.0	5.0	5.0		
Act Effct Green (s)	90.3			6.0	92.5	42.3		
Actuated g/C Ratio	0.60			0.04	0.62	0.28		
v/c Ratio	0.68			0.08	0.48	0.84		
Control Delay	10.0			72.6	17.9	66.1		
Queue Delay	0.6			0.0	0.1	0.0		
Total Delay	10.5			72.6	18.1	66.1		
LOS	B			E	B	E		
Approach Delay	10.5				18.3	66.1		
Approach LOS	B				B	E		
Queue Length 50th (ft)	149			5	250	386		
Queue Length 95th (ft)	m599			21	442	#529		
Internal Link Dist (ft)	521				488	647		
Turn Bay Length (ft)				150				
Base Capacity (vph)	2654			60	3032	503		
Starvation Cap Reductn	420			0	0	0		
Spillback Cap Reductn	0			0	540	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.81			0.08	0.59	0.84		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 14 (9%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 20.0	Intersection LOS: B
Intersection Capacity Utilization 63.5%	ICU Level of Service B
Analysis Period (min) 15	
Description: Note: Splits and offsets need to be optimized via synchro due to lack of coordination data	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: Vale Street & Route 16

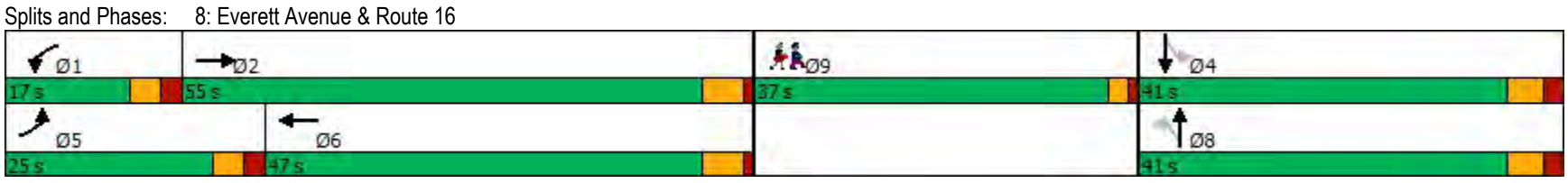


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	232	1377	158	65	1224	21	185	230	50	55	151	42	
Future Volume (vph)	232	1377	158	65	1224	21	185	230	50	55	151	42	
Satd. Flow (prot)	1728	4785	0	1678	4895	0	1694	1738	0	1601	1743	0	
Flt Permitted	0.950			0.950			0.507			0.295			
Satd. Flow (perm)	1720	4785	0	1663	4895	0	893	1738	0	493	1743	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	264	1633	0	73	1284	0	208	346	0	76	210	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	25.0	55.0		17.0	47.0		41.0	41.0		41.0	41.0		37.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.5	5.5		5.5	5.5		
Act Effct Green (s)	20.4	56.3		9.2	42.8		36.2	36.2		36.2	36.2		
Actuated g/C Ratio	0.16	0.44		0.07	0.34		0.28	0.28		0.28	0.28		
v/c Ratio	0.96	0.77		0.60	0.78		0.82	0.70		0.55	0.43		
Control Delay	98.4	36.7		81.4	44.2		71.1	52.4		60.7	43.8		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	98.4	36.7		81.4	44.2		71.1	52.4		60.7	43.8		
LOS	F	D		F	D		E	D		E	D		
Approach Delay		45.3			46.2			59.4			48.3		
Approach LOS		D			D			E			D		
Queue Length 50th (ft)	188	341		52	287		135	214		45	119		
Queue Length 95th (ft)	#467	#709		124	#536		#368	390		100	264		
Internal Link Dist (ft)		406			387			396			538		
Turn Bay Length (ft)	150			100			100			100			
Base Capacity (vph)	275	2115		161	1643		253	493		139	494		
Starvation Cap Reductn	0	0		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.96	0.77		0.45	0.78		0.82	0.70		0.55	0.43		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 127.4	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 47.7	Intersection LOS: D
Intersection Capacity Utilization 78.2%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

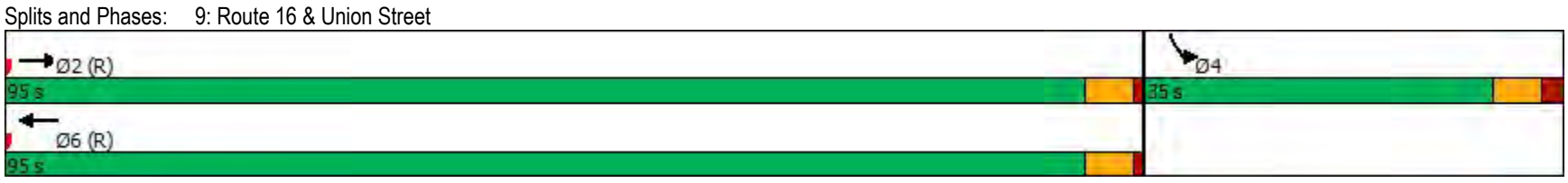
Splits and Phases: 8: Everett Avenue & Route 16



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1490	1299	224	126	11
Future Volume (vph)	0	1490	1299	224	126	11
Satd. Flow (prot)	0	4868	4797	0	1764	0
Flt Permitted					0.956	
Satd. Flow (perm)	0	4868	4797	0	1764	0
Satd. Flow (RTOR)						
Lane Group Flow (vph)	0	1620	1603	0	145	0
Turn Type		NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases						
Total Split (s)		95.0	95.0		35.0	
Total Lost Time (s)		5.0	5.0		6.0	
Act Effct Green (s)		103.9	103.9		15.1	
Actuated g/C Ratio		0.80	0.80		0.12	
v/c Ratio		0.42	0.42		0.71	
Control Delay		4.6	4.6		73.5	
Queue Delay		0.0	0.9		0.0	
Total Delay		4.6	5.5		73.5	
LOS		A	A		E	
Approach Delay		4.6	5.5		73.5	
Approach LOS		A	A		E	
Queue Length 50th (ft)		124	123		120	
Queue Length 95th (ft)		183	183		184	
Internal Link Dist (ft)		219	319		460	
Turn Bay Length (ft)						
Base Capacity (vph)	3891	3834	393			
Starvation Cap Reductn	0	1791	0			
Spillback Cap Reductn	0	0	0			
Storage Cap Reductn	0	0	0			
Reduced v/c Ratio	0.42	0.78	0.37			

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 77 (59%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 8.0	Intersection LOS: A
Intersection Capacity Utilization 47.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: Route 16 & Union Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	218	1185	213	155	1264	31	139	234	23	57	133	120	
Future Volume (vph)	218	1185	213	155	1264	31	139	234	23	57	133	120	
Satd. Flow (prot)	1745	4734	0	1728	4891	0	1736	1801	0	1770	1656	0	
Flt Permitted	0.950			0.950			0.413			0.414			
Satd. Flow (perm)	1738	4734	0	1727	4891	0	742	1801	0	760	1656	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	251	1607	0	174	1423	0	164	286	0	64	287	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	25.0	62.0		19.0	56.0		31.0	31.0		31.0	31.0		28.0
Total Lost Time (s)	5.5	5.0		5.5	5.0		6.0	6.0		6.0	6.0		
Act Effct Green (s)	19.5	57.0		13.5	51.0		42.6	42.6		42.6	42.6		
Actuated g/C Ratio	0.14	0.41		0.10	0.36		0.30	0.30		0.30	0.30		
v/c Ratio	1.03	0.83		1.05	0.80		0.73	0.52		0.28	0.57		
Control Delay	124.2	42.0		142.5	44.1		65.0	47.6		46.9	49.2		
Queue Delay	0.0	47.8		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	124.2	89.9		142.5	44.1		65.0	47.6		46.9	49.2		
LOS	F	F		F	D		E	D		D	D		
Approach Delay		94.5			54.8			54.0			48.7		
Approach LOS		F			D			D			D		
Queue Length 50th (ft)	~245	476		~171	423		118	191		39	195		
Queue Length 95th (ft)	#400	514		#321	485		#299	#397		103	#411		
Internal Link Dist (ft)		319			1066			414			597		
Turn Bay Length (ft)	100			150			150			150			
Base Capacity (vph)	243	1927		166	1781		225	547		231	503		
Starvation Cap Reductn	0	642		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	1.03	1.25		1.05	0.80		0.73	0.52		0.28	0.57		

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 71.5	Intersection LOS: E
Intersection Capacity Utilization 81.3%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Washington Avenue & Route 16

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1164	181	266	111	1194	13	288	349	219	226	270	175	
Future Volume (vph)	0	1164	181	266	111	1194	13	288	349	219	226	270	175	
Satd. Flow (prot)	0	4775	0	0	1673	4783	0	1736	1919	0	1787	1916	0	
Flt Permitted					0.950			*0.600			*0.600			
Satd. Flow (perm)	0	4775	0	0	1660	4783	0	1091	1919	0	1122	1916	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1373	0	0	418	1326	0	327	617	0	251	529	0	
Turn Type		NA		Prot	Prot	NA		pm+pt	NA		pm+pt	NA		
Protected Phases		2		1	1	6		3	8		7	4		9
Permitted Phases								8			4			
Total Split (s)		43.0		36.0	36.0	79.0		13.0	44.0		21.0	52.0		36.0
Total Lost Time (s)		5.0			6.0	5.0		6.0	5.5		6.0	5.5		
Act Effct Green (s)		38.0			30.0	74.0		45.0	38.5		59.0	46.5		
Actuated g/C Ratio		0.26			0.21	0.51		0.31	0.27		0.41	0.32		
v/c Ratio		1.09			1.20	0.54		0.88	1.20		0.48	0.86		
Control Delay		102.4			162.5	24.6		66.6	153.4		32.8	60.3		
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		102.4			162.5	24.6		66.6	153.4		32.8	60.3		
LOS		F			F	C		E	F		C	E		
Approach Delay		102.4				57.6			123.3			51.5		
Approach LOS		F				E			F			D		
Queue Length 50th (ft)		~529			~474	298		221	~701		160	464		
Queue Length 95th (ft)		#627			#686	343		#360	#938		233	559		
Internal Link Dist (ft)		409				879			820			473		
Turn Bay Length (ft)				100				150			100			
Base Capacity (vph)	1260			348	2457			372	513		528	618		
Starvation Cap Reductn	0			0	0			0	0		0	0		
Spillback Cap Reductn	0			0	0			0	0		0	0		
Storage Cap Reductn	0			0	0			0	0		0	0		
Reduced v/c Ratio	1.09			1.20	0.54			0.88	1.20		0.48	0.86		

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 144	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 82.2	Intersection LOS: F
Intersection Capacity Utilization 111.0%	ICU Level of Service H
Analysis Period (min) 15	
Description: Note: turning movmement counts show no volume heading southbound on Webster. Volumes shown were extrapolated from 2016 TMCs	
Note: Phase 7 shows minimum green = 20 while maximum green = 12. Also, phases 1,2,6 show Recall = EXT - I used Min	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 11: Webster Avenue/Garfield Avenue & Route 16

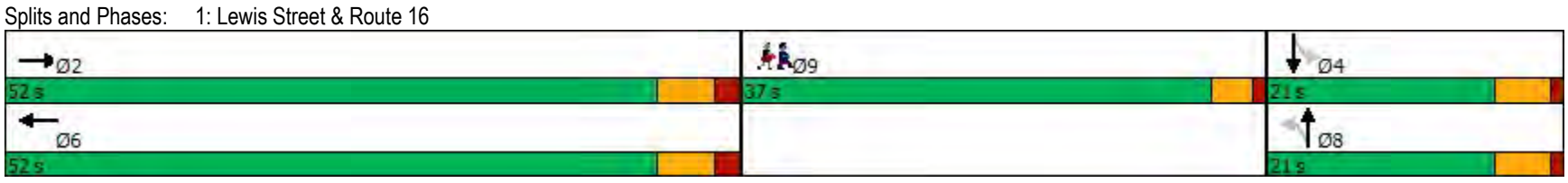
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	2108	18	0	2045	24	15	8	9	24	20	21	
Future Volume (vph)	0	2108	18	0	2045	24	15	8	9	24	20	21	
Satd. Flow (prot)	0	2890	0	0	3372	0	0	1636	0	0	1612	0	
Flt Permitted								0.869			0.859		
Satd. Flow (perm)	0	2890	0	0	3372	0	0	1579	0	0	1535	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2192	0	0	2325	0	0	43	0	0	78	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		52.0			52.0		21.0	21.0		21.0	21.0		37.0
Total Lost Time (s)		6.0			6.0			5.0			5.0		
Act Effct Green (s)		49.3			49.3			11.0			11.0		
Actuated g/C Ratio		0.71			0.71			0.16			0.16		
v/c Ratio		1.07			0.98			0.17			0.32		
Control Delay		61.3			30.3			30.6			33.2		
Queue Delay		0.0			0.0			0.0			0.0		
Total Delay		61.3			30.3			30.6			33.2		
LOS		E			C			C			C		
Approach Delay		61.3			30.3			30.6			33.2		
Approach LOS		E			C			C			C		
Queue Length 50th (ft)		~391			~310			16			29		
Queue Length 95th (ft)		#782			#776			44			77		
Internal Link Dist (ft)		532			675			497			190		
Turn Bay Length (ft)													
Base Capacity (vph)	2040		2380			374			364				
Starvation Cap Reductn	0		0			0			0				
Spillback Cap Reductn	0		0			0			0				
Storage Cap Reductn	0		0			0			0				
Reduced v/c Ratio	1.07		0.98			0.11			0.21				

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 69.9	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 45.0	Intersection LOS: D
Intersection Capacity Utilization 59.3%	ICU Level of Service B
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lewis Street & Route 16



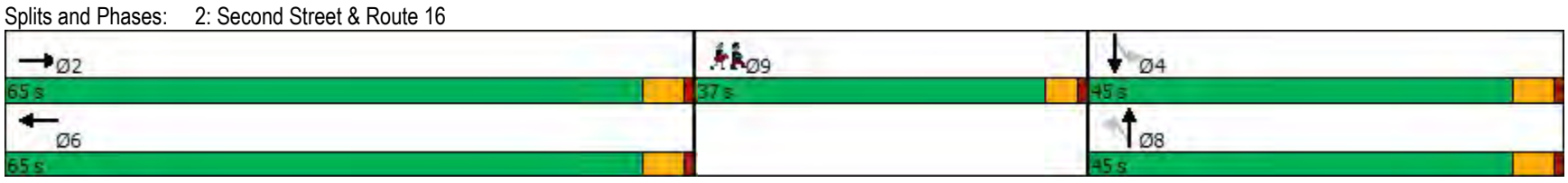
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1712	428	0	1702	132	306	74	8	43	60	61	
Future Volume (vph)	0	1712	428	0	1702	132	306	74	8	43	60	61	
Satd. Flow (prot)	0	4528	0	0	5083	0	0	1776	0	0	1771	0	
Flt Permitted								0.602			0.857		
Satd. Flow (perm)	0	4528	0	0	5083	0	0	1109	0	0	1537	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2253	0	0	2183	0	0	451	0	0	197	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		65.0			65.0		45.0	45.0		45.0	45.0		37.0
Total Lost Time (s)		5.0			5.0			5.0			5.0		
Act Effct Green (s)		60.3			60.3			40.2			40.2		
Actuated g/C Ratio		0.53			0.53			0.35			0.35		
v/c Ratio		0.94			0.81			1.16			0.37		
Control Delay		35.6			26.5			131.0			31.5		
Queue Delay		0.0			31.5			0.0			0.0		
Total Delay		35.6			58.1			131.0			31.5		
LOS		D			E			F			C		
Approach Delay		35.6			58.1			131.0			31.5		
Approach LOS		D			E			F			C		
Queue Length 50th (ft)		502			428			~367			100		
Queue Length 95th (ft)		#889			636			#669			190		
Internal Link Dist (ft)		675			412			757			460		
Turn Bay Length (ft)													
Base Capacity (vph)	2387		2680			390			539				
Starvation Cap Reductn	0		627			0			0				
Spillback Cap Reductn	0		0			0			0				
Storage Cap Reductn	0		0			0			0				
Reduced v/c Ratio	0.94		1.06			1.16			0.37				

Intersection Summary	
Cycle Length: 147	
Actuated Cycle Length: 114.4	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 53.5	Intersection LOS: D
Intersection Capacity Utilization 85.9%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Second Street & Route 16



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	47	109	1561	46	66	54	1608	45	63	51	85	40	43	116	
Future Volume (vph)	47	109	1561	46	66	54	1608	45	63	51	85	40	43	116	
Satd. Flow (prot)	0	1504	5063	0	0	1465	4940	0	0	1420	0	0	1403	0	
Flt Permitted		0.900				0.900				*0.800			*0.810		
Satd. Flow (perm)	0	1501	5063	0	0	1458	4940	0	0	1262	0	0	1262	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	166	1640	0	0	160	1922	0	0	234	0	0	240	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	20.0	20.0	60.0		20.0	20.0	60.0		24.0	24.0		24.0	24.0		36.0
Total Lost Time (s)		5.0	5.0			5.0	5.0			6.0			6.0		
Act Effct Green (s)		15.1	55.4			15.1	55.4			18.1			18.1		
Actuated g/C Ratio		0.14	0.51			0.14	0.51			0.17			0.17		
v/c Ratio		0.80	0.64			0.79	0.76			1.11			1.14		
Control Delay		73.7	21.9			73.2	25.2			139.3			148.2		
Queue Delay		0.0	1.1			0.0	0.4			0.0			0.0		
Total Delay		73.7	23.0			73.2	25.6			139.3			148.2		
LOS		E	C			E	C			F			F		
Approach Delay			27.7				29.2			139.3			148.2		
Approach LOS			C				C			F			F		
Queue Length 50th (ft)		118	265			114	344			~192			~202		
Queue Length 95th (ft)		#306	473			#221	563			#427			#425		
Internal Link Dist (ft)			412				550			363			385		
Turn Bay Length (ft)	150				225										
Base Capacity (vph)	208	2577			203	2514			210			210			
Starvation Cap Reductn	0	630			0	182			0			0			
Spillback Cap Reductn	0	0			0	0			0			0			
Storage Cap Reductn	0	0			0	0			0			0			
Reduced v/c Ratio	0.80	0.84			0.79	0.82			1.11			1.14			

Intersection Summary

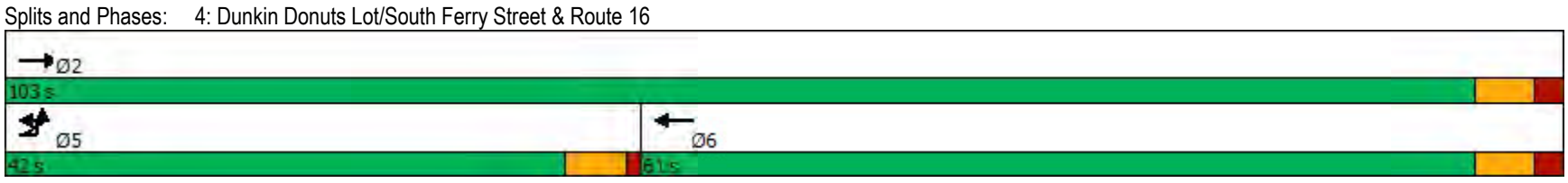
Cycle Length: 140
Actuated Cycle Length: 108.8
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 41.0 — Intersection LOS: D
Intersection Capacity Utilization 72.5% — ICU Level of Service C
Analysis Period (min) 15
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Spring Street & Route 16

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	21	221	1510	0	0	1732	67	0	0	60	0	0	0
Future Volume (vph)	21	221	1510	0	0	1732	67	0	0	60	0	0	0
Satd. Flow (prot)	0	1170	3576	0	0	4295	0	0	0	1589	0	0	0
Flt Permitted		0.800											
Satd. Flow (perm)	0	1169	4471	0	0	4295	0	0	0	1589	0	0	0
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	263	1624	0	0	2044	0	0	0	65	0	0	0
Turn Type	Prot	Prot	NA			NA				Perm			
Protected Phases	5	5	2			6							
Permitted Phases										2			
Total Split (s)	42.0	42.0	103.0			61.0				103.0			
Total Lost Time (s)		5.0	6.0			6.0				6.0			
Act Effct Green (s)		25.8	98.2			61.2				98.2			
Actuated g/C Ratio		0.26	1.00			0.62				1.00			
v/c Ratio		0.86	0.45			0.76				0.04			
Control Delay		59.1	0.4			17.5				0.1			
Queue Delay		0.0	0.0			0.5				0.0			
Total Delay		59.1	0.4			18.0				0.1			
LOS		E	A			B				A			
Approach Delay			8.6			18.0			0.1				
Approach LOS			A			B			A				
Queue Length 50th (ft)		205	0			365				0			
Queue Length 95th (ft)		292	0			541				0			
Internal Link Dist (ft)			550			503			557			380	
Turn Bay Length (ft)	225												
Base Capacity (vph)	446	3576		2678			1589						
Starvation Cap Reductn	0	0		239			0						
Spillback Cap Reductn	0	0		0			0						
Storage Cap Reductn	0	0		0			0						
Reduced v/c Ratio	0.59	0.45		0.84			0.04						

Intersection Summary	
Cycle Length: 103	
Actuated Cycle Length: 98.2	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 57.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Dunkin Donuts Lot/South Ferry Street & Route 16



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1462	108	9	22	1540	95	127	103	37	75	120	132	
Future Volume (vph)	0	1462	108	9	22	1540	95	127	103	37	75	120	132	
Satd. Flow (prot)	0	4414	0	0	1504	4870	0	0	1630	0	0	1564	0	
Flt Permitted					0.900				0.483			0.811		
Satd. Flow (perm)	0	4414	0	0	1495	4870	0	0	804	0	0	1280	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1688	0	0	42	1703	0	0	294	0	0	359	0	
Turn Type		NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases		2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)		56.0		22.0	22.0	78.0		36.0	36.0		36.0	36.0		36.0
Total Lost Time (s)		6.0			6.0	6.0			6.0			6.0		
Act Effct Green (s)		60.7			8.6	72.4			30.2			30.2		
Actuated g/C Ratio		0.51			0.07	0.61			0.25			0.25		
v/c Ratio		0.75			0.39	0.57			1.44			1.11		
Control Delay		27.7			65.5	15.9			259.2			123.5		
Queue Delay		0.4			0.0	0.5			0.0			0.0		
Total Delay		28.1			65.5	16.4			259.2			123.5		
LOS		C			E	B			F			F		
Approach Delay		28.1				17.6			259.2			123.5		
Approach LOS		C				B			F			F		
Queue Length 50th (ft)		347			32	239			~316			~319		
Queue Length 95th (ft)		#648			68	453			#627			#669		
Internal Link Dist (ft)		503				521			407			333		
Turn Bay Length (ft)					100									
Base Capacity (vph)	2256			204	2968		204		324					
Starvation Cap Reductn	181			0	704		0		0					
Spillback Cap Reductn	0			0	0		0		0					
Storage Cap Reductn	0			0	0		0		0					
Reduced v/c Ratio	0.81			0.21	0.75		1.44		1.11					

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 118.8	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.44	
Intersection Signal Delay: 48.6	Intersection LOS: D
Intersection Capacity Utilization 70.2%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

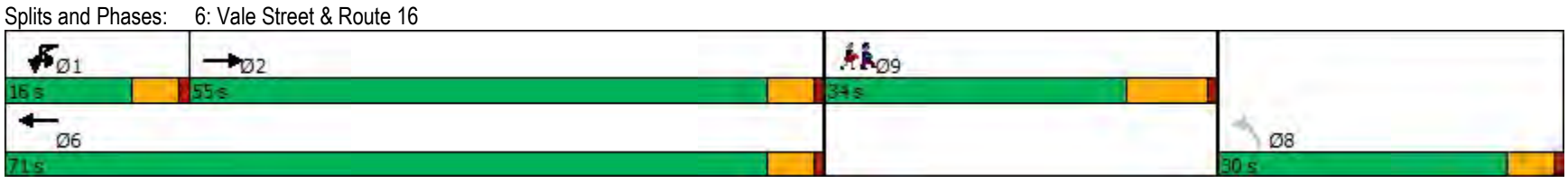
Splits and Phases: 5: Vine Street & Route 16

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR	Ø9
Lane Configurations								
Traffic Volume (vph)	1413	187	17	7	1442	224	1	
Future Volume (vph)	1413	187	17	7	1442	224	1	
Satd. Flow (prot)	4414	0	0	1504	4916	1791	0	
Flt Permitted				0.900		0.953		
Satd. Flow (perm)	4414	0	0	1504	4916	1779	0	
Satd. Flow (RTOR)								
Lane Group Flow (vph)	1860	0	0	25	1502	242	0	
Turn Type	NA		Prot	Prot	NA	Perm		
Protected Phases	2		1	1	6			9
Permitted Phases						8		
Total Split (s)	55.0		16.0	16.0	71.0	30.0		34.0
Total Lost Time (s)	5.0			5.0	5.0	5.0		
Act Effct Green (s)	52.3			6.9	56.6	16.4		
Actuated g/C Ratio	0.60			0.08	0.65	0.19		
v/c Ratio	0.70			0.21	0.47	0.72		
Control Delay	18.4			49.2	10.4	48.4		
Queue Delay	0.0			0.0	0.0	0.0		
Total Delay	18.4			49.2	10.4	48.4		
LOS	B			D	B	D		
Approach Delay	18.4				11.0	48.4		
Approach LOS	B				B	D		
Queue Length 50th (ft)	167			12	112	105		
Queue Length 95th (ft)	#644			53	350	276		
Internal Link Dist (ft)	521				488	647		
Turn Bay Length (ft)				150				
Base Capacity (vph)	2651			198	3897	534		
Starvation Cap Reductn	31			0	0	0		
Spillback Cap Reductn	0			0	0	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.71			0.13	0.39	0.45		

Intersection Summary	
Cycle Length: 135	
Actuated Cycle Length: 87.1	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 52.3%	ICU Level of Service A
Analysis Period (min) 15	
Description: Note: Splits and offsets need to be optimized via synchro due to lack of coordination data	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Vale Street & Route 16



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	186	1221	187	101	1213	18	230	173	82	90	219	76	
Future Volume (vph)	186	1221	187	101	1213	18	230	173	82	90	219	76	
Satd. Flow (prot)	1745	4806	0	1694	4900	0	1728	1716	0	1694	1749	0	
Flt Permitted	0.950			0.950			0.382			0.427			
Satd. Flow (perm)	1745	4806	0	1686	4900	0	690	1716	0	759	1749	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	204	1437	0	123	1398	0	247	283	0	100	314	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	17.0	52.0		15.0	50.0		40.0	40.0		40.0	40.0		33.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.5	5.5		5.5	5.5		
Act Effct Green (s)	12.2	44.7		10.2	42.7		35.1	35.1		35.1	35.1		
Actuated g/C Ratio	0.11	0.40		0.09	0.39		0.32	0.32		0.32	0.32		
v/c Ratio	1.07	0.74		0.79	0.74		1.13	0.52		0.42	0.57		
Control Delay	132.3	32.1		85.0	33.5		138.9	38.2		40.8	39.3		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	132.3	32.1		85.0	33.5		138.9	38.2		40.8	39.3		
LOS	F	C		F	C		F	D		D	D		
Approach Delay		44.5			37.6			85.1			39.7		
Approach LOS		D			D			F			D		
Queue Length 50th (ft)	~152	276		84	278		~194	157		53	177		
Queue Length 95th (ft)	m#414	518		#220	491		#482	339		146	377		
Internal Link Dist (ft)		406			387			396			538		
Turn Bay Length (ft)	150			100			100			100			
Base Capacity (vph)	191	2070		155	2020		218	542		239	553		
Starvation Cap Reductn	0	0		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	1.07	0.69		0.79	0.69		1.13	0.52		0.42	0.57		

Intersection Summary

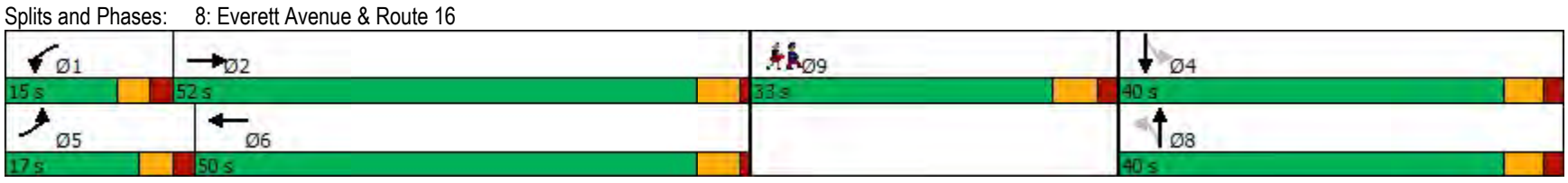
Cycle Length: 140
Actuated Cycle Length: 110.9
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.13
Intersection Signal Delay: 46.7 — Intersection LOS: D
Intersection Capacity Utilization 80.8% — ICU Level of Service D
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

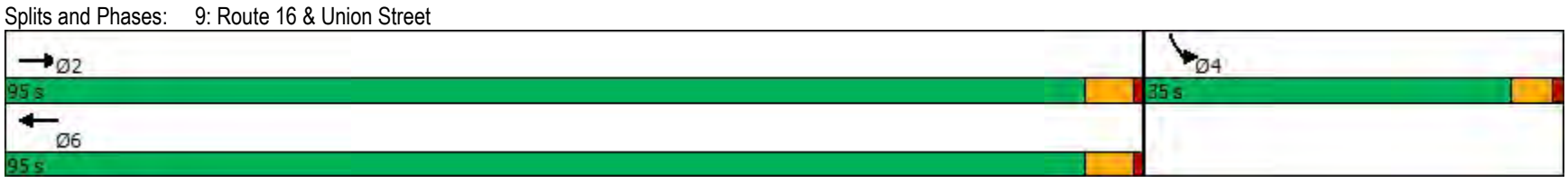
Splits and Phases: 8: Everett Avenue & Route 16



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1432	1315	175	146	11
Future Volume (vph)	0	1432	1315	175	146	11
Satd. Flow (prot)	0	4916	4828	0	1798	0
Flt Permitted					0.955	
Satd. Flow (perm)	0	4916	4828	0	1798	0
Satd. Flow (RTOR)						
Lane Group Flow (vph)	0	1446	1689	0	175	0
Turn Type		NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases						
Total Split (s)		95.0	95.0		35.0	
Total Lost Time (s)		5.0	5.0		4.5	
Act Effct Green (s)		22.1	22.1		9.6	
Actuated g/C Ratio		0.53	0.53		0.23	
v/c Ratio		0.55	0.66		0.42	
Control Delay		7.3	8.4		18.8	
Queue Delay		0.0	0.0		0.0	
Total Delay		7.3	8.4		18.8	
LOS		A	A		B	
Approach Delay		7.3	8.4		18.8	
Approach LOS		A	A		B	
Queue Length 50th (ft)		64	82		33	
Queue Length 95th (ft)		115	142		93	
Internal Link Dist (ft)		219	319		460	
Turn Bay Length (ft)						
Base Capacity (vph)		4916	4828		1363	
Starvation Cap Reductn		0	83		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.29	0.36		0.13	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 41.5	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 8.4	Intersection LOS: A
Intersection Capacity Utilization 46.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: Route 16 & Union Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	212	1188	178	88	1224	38	113	123	55	60	158	153	
Future Volume (vph)	212	1188	178	88	1224	38	113	123	55	60	158	153	
Satd. Flow (prot)	1745	4758	0	1694	4896	0	1736	1753	0	1770	1706	0	
Flt Permitted	0.950			0.950			*0.450			0.515			
Satd. Flow (perm)	1740	4758	0	1692	4896	0	817	1753	0	955	1706	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	230	1438	0	116	1342	0	128	203	0	64	331	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	18.0	67.0		16.0	65.0		31.0	31.0		31.0	31.0		26.0
Total Lost Time (s)	6.0	5.0		6.0	5.0		6.0	6.0		6.0	6.0		
Act Effct Green (s)	12.4	46.0		10.3	44.0		25.7	25.7		25.7	25.7		
Actuated g/C Ratio	0.12	0.44		0.10	0.43		0.25	0.25		0.25	0.25		
v/c Ratio	1.11	0.68		0.69	0.64		0.63	0.47		0.27	0.78		
Control Delay	137.5	25.1		69.9	25.5		54.5	41.5		41.5	52.8		
Queue Delay	0.0	0.2		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	137.5	25.3		69.9	25.5		54.5	41.5		41.5	52.8		
LOS	F	C		E	C		D	D		D	D		
Approach Delay		40.8			29.0			46.5			51.0		
Approach LOS		D			C			D			D		
Queue Length 50th (ft)	~158	241		70	226		70	105		32	189		
Queue Length 95th (ft)	#465	433		#182	400		#231	256		102	#534		
Internal Link Dist (ft)		319			1066			414			597		
Turn Bay Length (ft)	100			150			150			150			
Base Capacity (vph)	208	2937		168	2924		203	436		237	424		
Starvation Cap Reductn	0	662		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	1.11	0.63		0.69	0.46		0.63	0.47		0.27	0.78		

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 103.4	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 37.9	Intersection LOS: D
Intersection Capacity Utilization 81.7%	ICU Level of Service D
Analysis Period (min) 15	

* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Washington Avenue & Route 16

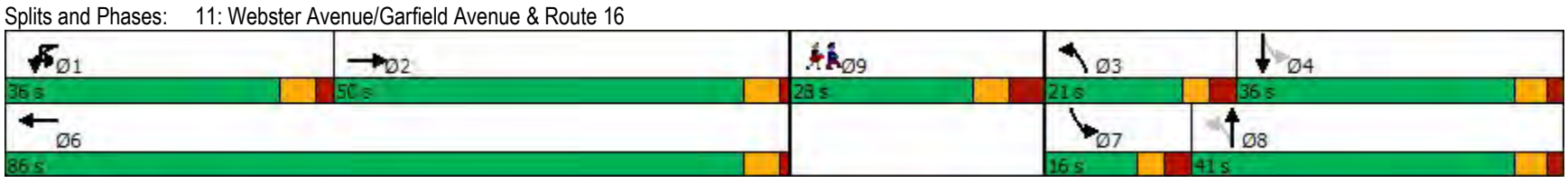
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1225	184	171	128	1172	13	299	209	229	190	170	146	
Future Volume (vph)	0	1225	184	171	128	1172	13	299	209	229	190	170	146	
Satd. Flow (prot)	0	4777	0	0	1652	4737	0	1752	1885	0	1787	1913	0	
Flt Permitted					0.950			*0.600			*0.600			
Satd. Flow (perm)	0	4777	0	0	1647	4737	0	1105	1885	0	1119	1913	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1515	0	0	329	1248	0	336	486	0	209	344	0	
Turn Type		NA		Prot	Prot	NA		pm+pt	NA		pm+pt	NA		
Protected Phases		2		1	1	6		3	8		7	4		9
Permitted Phases								8			4			
Total Split (s)		50.0		36.0	36.0	86.0		21.0	41.0		16.0	36.0		28.0
Total Lost Time (s)		5.0			6.0	5.0		6.0	5.5		6.0	5.5		
Act Effct Green (s)		45.3			30.2	81.6		50.4	35.8		40.3	30.7		
Actuated g/C Ratio		0.29			0.20	0.53		0.33	0.23		0.26	0.20		
v/c Ratio		1.08			1.02	0.50		0.79	1.11		0.62	0.90		
Control Delay		98.4			114.3	25.6		60.7	130.0		54.5	87.3		
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		98.4			114.3	25.6		60.7	130.0		54.5	87.3		
LOS		F			F	C		E	F		D	F		
Approach Delay		98.4				44.1			101.7			74.9		
Approach LOS		F				D			F			E		
Queue Length 50th (ft)		~525			305	241		248	~487		141	310		
Queue Length 95th (ft)		#849			#636	409		#503	#908		270	#616		
Internal Link Dist (ft)		409				879			820			473		
Turn Bay Length (ft)					100			150			100			
Base Capacity (vph)	1405				323	2507		424	437		335	381		
Starvation Cap Reductn	0				0	0		0	0		0	0		
Spillback Cap Reductn	0				0	0		0	0		0	0		
Storage Cap Reductn	0				0	0		0	0		0	0		
Reduced v/c Ratio	1.08				1.02	0.50		0.79	1.11		0.62	0.90		

Intersection Summary

Cycle Length: 171
Actuated Cycle Length: 154.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.11
Intersection Signal Delay: 76.9 Intersection LOS: E
Intersection Capacity Utilization 99.4% ICU Level of Service F
Analysis Period (min) 15
Description: Note: Phase 7 shows minimum green = 20 while maximum green = 12. Also, phases 1,2,6 show Recall = EXT - I used Min

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Webster Avenue/Garfield Avenue & Route 16



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1958	13	0	1726	6	20	5	9	7	9	16	
Future Volume (vph)	0	1958	13	0	1726	6	20	5	9	7	9	16	
Satd. Flow (prot)	0	2919	0	0	2919	0	0	1638	0	0	1583	0	
Flt Permitted								0.788			0.912		
Satd. Flow (perm)	0	2919	0	0	2919	0	0	1432	0	0	1601	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2054	0	0	2038	0	0	48	0	0	56	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		52.0			52.0		21.0	21.0		21.0	21.0		37.0
Total Lost Time (s)		6.0			6.0			5.0			5.0		
Act Effct Green (s)		51.1			51.1			10.0			10.1		
Actuated g/C Ratio		0.77			0.77			0.15			0.15		
v/c Ratio		0.91			0.90			0.22			0.23		
Control Delay		21.6			21.0			31.9			31.6		
Queue Delay		0.0			0.0			0.0			0.0		
Total Delay		21.6			21.0			31.9			31.6		
LOS		C			C			C			C		
Approach Delay		21.6			21.0			31.9			31.6		
Approach LOS		C			C			C			C		
Queue Length 50th (ft)		~271			~257			18			21		
Queue Length 95th (ft)		#692			#628			45			41		
Internal Link Dist (ft)		532			675			497			190		
Turn Bay Length (ft)													
Base Capacity (vph)	2261		2261		362		405						
Starvation Cap Reductn	0		0		0		0						
Spillback Cap Reductn	0		0		0		0						
Storage Cap Reductn	0		0		0		0						
Reduced v/c Ratio	0.91		0.90		0.13		0.14						

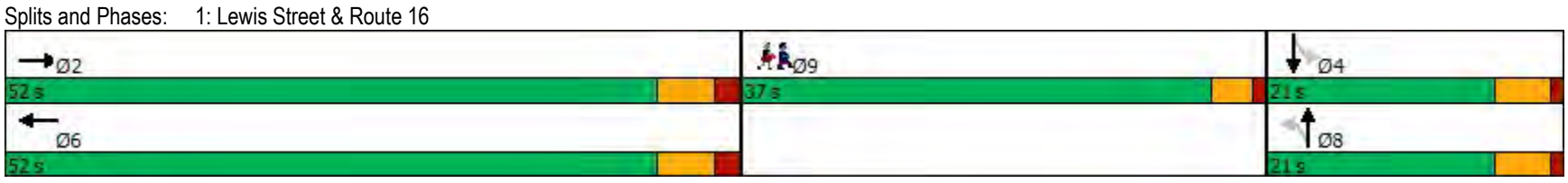
Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 66
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 21.5 — Intersection LOS: C
Intersection Capacity Utilization 56.1% — ICU Level of Service B
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lewis Street & Route 16



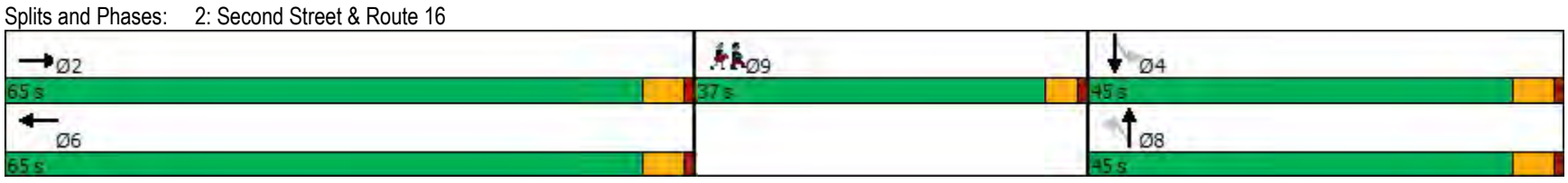
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1605	369	0	1445	77	267	96	13	48	55	20	
Future Volume (vph)	0	1605	369	0	1445	77	267	96	13	48	55	20	
Satd. Flow (prot)	0	4578	0	0	5091	0	0	1371	0	0	1818	0	
Flt Permitted								0.650			0.783		
Satd. Flow (perm)	0	4578	0	0	5091	0	0	989	0	0	1451	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2123	0	0	1730	0	0	430	0	0	190	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		65.0			65.0		45.0	45.0		45.0	45.0		37.0
Total Lost Time (s)		5.0			5.0			5.0			5.0		
Act Effct Green (s)		60.3			60.3			40.2			40.2		
Actuated g/C Ratio		0.53			0.53			0.35			0.35		
v/c Ratio		0.88			0.64			1.24			0.37		
Control Delay		30.0			21.7			163.5			31.8		
Queue Delay		0.0			1.7			0.0			0.0		
Total Delay		30.0			23.5			163.5			31.8		
LOS		C			C			F			C		
Approach Delay		30.0			23.5			163.5			31.8		
Approach LOS		C			C			F			C		
Queue Length 50th (ft)		443			293			~405			97		
Queue Length 95th (ft)		#798			482			#729			139		
Internal Link Dist (ft)		675			412			757			460		
Turn Bay Length (ft)													
Base Capacity (vph)	2414		2684			347			509				
Starvation Cap Reductn	0		734			0			0				
Spillback Cap Reductn	0		0			0			0				
Storage Cap Reductn	0		0			0			0				
Reduced v/c Ratio	0.88		0.89			1.24			0.37				

Intersection Summary	
Cycle Length: 147	
Actuated Cycle Length: 114.4	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 40.4	Intersection LOS: D
Intersection Capacity Utilization 74.9%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Second Street & Route 16



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	38	106	1466	56	45	66	1345	39	23	55	67	30	46	117	
Future Volume (vph)	38	106	1466	56	45	66	1345	39	23	55	67	30	46	117	
Satd. Flow (prot)	0	1504	5048	0	0	1486	4938	0	0	1416	0	0	1401	0	
Flt Permitted		0.900				*0.900				*0.800			*0.810		
Satd. Flow (perm)	0	1500	5048	0	0	1471	4938	0	0	1258	0	0	1258	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	163	1602	0	0	139	1537	0	0	165	0	0	257	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	20.0	20.0	60.0		20.0	20.0	60.0		24.0	24.0		24.0	24.0		36.0
Total Lost Time (s)		5.0	5.0			5.0	5.0			6.0			6.0		
Act Effct Green (s)		15.1	56.8			13.7	55.4			18.1			18.1		
Actuated g/C Ratio		0.14	0.52			0.13	0.51			0.17			0.17		
v/c Ratio		0.78	0.61			0.75	0.61			0.79			1.23		
Control Delay		72.1	20.8			71.0	21.5			71.2			177.8		
Queue Delay		0.0	0.7			0.0	0.1			0.0			0.0		
Total Delay		72.1	21.6			71.0	21.6			71.2			177.8		
LOS		E	C			E	C			E			F		
Approach Delay			26.2				25.7			71.2			177.8		
Approach LOS			C				C			E			F		
Queue Length 50th (ft)		115	256			96	244			116			~228		
Queue Length 95th (ft)		#289	458			#202	438			#297			#401		
Internal Link Dist (ft)			412				550			363			385		
Turn Bay Length (ft)	150				225										
Base Capacity (vph)	208	2636			206	2513			209			209			
Starvation Cap Reductn	0	631			0	207			0			0			
Spillback Cap Reductn	0	0			0	0			0			0			
Storage Cap Reductn	0	0			0	0			0			0			
Reduced v/c Ratio	0.78	0.80			0.67	0.67			0.79			1.23			

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 108.8	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 38.0	Intersection LOS: D
Intersection Capacity Utilization 64.7%	ICU Level of Service C
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

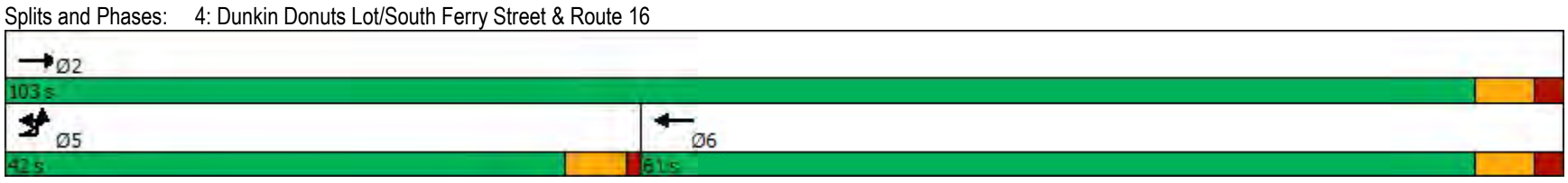
Splits and Phases: 3: Spring Street & Route 16

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	13	277	1318	0	0	1455	73	0	0	20	0	0	0
Future Volume (vph)	13	277	1318	0	0	1455	73	0	0	20	0	0	0
Satd. Flow (prot)	0	1164	3612	0	0	4328	0	0	0	1589	0	0	0
Flt Permitted		0.800											
Satd. Flow (perm)	0	1163	4515	0	0	4328	0	0	0	1589	0	0	0
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	326	1448	0	0	1643	0	0	0	22	0	0	0
Turn Type	Prot	Prot	NA			NA				Perm			
Protected Phases	5	5	2			6							
Permitted Phases										2			
Total Split (s)	42.0	42.0	103.0			61.0				103.0			
Total Lost Time (s)		5.0	6.0			6.0				6.0			
Act Effct Green (s)		29.8	96.9			56.1				96.9			
Actuated g/C Ratio		0.31	1.00			0.58				1.00			
v/c Ratio		0.91	0.40			0.66				0.01			
Control Delay		62.6	0.3			16.6				0.0			
Queue Delay		0.0	0.0			0.0				0.0			
Total Delay		62.6	0.3			16.6				0.0			
LOS		E	A			B				A			
Approach Delay			11.8			16.6							
Approach LOS			B			B							
Queue Length 50th (ft)		248	0			295				0			
Queue Length 95th (ft)		#408	0			387				0			
Internal Link Dist (ft)			550			503			557			380	
Turn Bay Length (ft)	225												
Base Capacity (vph)	448	3612		2503			1589						
Starvation Cap Reductn	0	0		0			0						
Spillback Cap Reductn	0	0		0			0						
Storage Cap Reductn	0	0		0			0						
Reduced v/c Ratio	0.73	0.40		0.66			0.01						

Intersection Summary	
Cycle Length: 103	
Actuated Cycle Length: 96.9	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 55.0%	ICU Level of Service B
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Dunkin Donuts Lot/South Ferry Street & Route 16



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1262	76	2	17	1332	73	64	112	42	59	104	132	
Future Volume (vph)	0	1262	76	2	17	1332	73	64	112	42	59	104	132	
Satd. Flow (prot)	0	4462	0	0	1504	4922	0	0	1645	0	0	1596	0	
Flt Permitted					0.900				0.595			0.766		
Satd. Flow (perm)	0	4462	0	0	1497	4922	0	0	992	0	0	1234	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1486	0	0	27	1527	0	0	294	0	0	329	0	
Turn Type		NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases		2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)		56.0		22.0	22.0	78.0		36.0	36.0		36.0	36.0		36.0
Total Lost Time (s)		6.0			6.0	6.0			6.0			6.0		
Act Effct Green (s)		64.0			8.2	72.4			30.2			30.2		
Actuated g/C Ratio		0.54			0.07	0.61			0.25			0.25		
v/c Ratio		0.62			0.26	0.51			1.17			1.05		
Control Delay		22.9			61.8	14.9			149.8			108.5		
Queue Delay		0.2			0.0	0.3			0.0			0.0		
Total Delay		23.1			61.8	15.2			149.8			108.5		
LOS		C			E	B			F			F		
Approach Delay		23.1				16.0			149.8			108.5		
Approach LOS		C				B			F			F		
Queue Length 50th (ft)		283			20	202			~274			~272		
Queue Length 95th (ft)		489			48	386			#442			#610		
Internal Link Dist (ft)		503				521			407			333		
Turn Bay Length (ft)					100									
Base Capacity (vph)	2404			204	3000			252			313			
Starvation Cap Reductn	224			0	771			0			0			
Spillback Cap Reductn	0			0	0			0			0			
Storage Cap Reductn	0			0	0			0			0			
Reduced v/c Ratio	0.68			0.13	0.69			1.17			1.05			

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 118.8	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 37.9	Intersection LOS: D
Intersection Capacity Utilization 57.5%	ICU Level of Service B
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

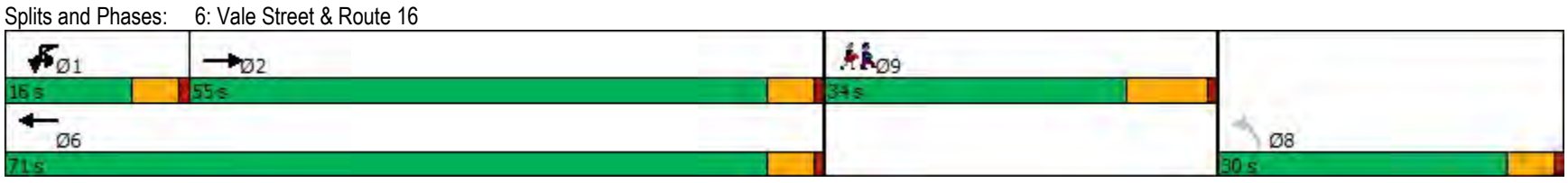
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Vine Street & Route 16

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR	Ø9
Lane Configurations								
Traffic Volume (vph)	1363	2	20	7	1253	171	0	
Future Volume (vph)	1363	2	20	7	1253	171	0	
Satd. Flow (prot)	4468	0	0	1504	4964	1770	0	
Flt Permitted				0.900		0.950		
Satd. Flow (perm)	4468	0	0	1504	4964	1758	0	
Satd. Flow (RTOR)								
Lane Group Flow (vph)	1452	0	0	43	1408	184	0	
Turn Type	NA		Prot	Prot	NA	Perm		
Protected Phases	2		1	1	6			9
Permitted Phases						8		
Total Split (s)	55.0		16.0	16.0	71.0	30.0		34.0
Total Lost Time (s)	5.0			5.0	5.0	5.0		
Act Effct Green (s)	33.3			8.5	40.0	14.6		
Actuated g/C Ratio	0.48			0.12	0.57	0.21		
v/c Ratio	0.68			0.24	0.49	0.50		
Control Delay	19.2			42.8	10.3	36.3		
Queue Delay	0.0			0.0	0.0	0.0		
Total Delay	19.2			42.8	10.3	36.3		
LOS	B			D	B	D		
Approach Delay	19.2				11.3	36.3		
Approach LOS	B				B	D		
Queue Length 50th (ft)	160			17	86	67		
Queue Length 95th (ft)	445			54	306	215		
Internal Link Dist (ft)	521				488	647		
Turn Bay Length (ft)				150				
Base Capacity (vph)	3410			288	4366	766		
Starvation Cap Reductn	12			0	0	0		
Spillback Cap Reductn	0			0	0	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.43			0.15	0.32	0.24		

Intersection Summary	
Cycle Length: 135	
Actuated Cycle Length: 69.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 16.5	Intersection LOS: B
Intersection Capacity Utilization 44.2%	ICU Level of Service A
Analysis Period (min) 15	
Description: Note: Splits and offsets need to be optimized via synchro due to lack of coordination data	

Splits and Phases: 6: Vale Street & Route 16



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	175	1153	176	56	1095	12	178	145	49	74	168	79	
Future Volume (vph)	175	1153	176	56	1095	12	178	145	49	74	168	79	
Satd. Flow (prot)	1728	4844	0	1711	4951	0	1745	1759	0	1728	1717	0	
Flt Permitted	0.950			0.950			0.436			0.496			
Satd. Flow (perm)	1728	4844	0	1707	4951	0	794	1759	0	899	1717	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	208	1444	0	102	1216	0	205	237	0	96	278	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	17.0	52.0		15.0	50.0		40.0	40.0		40.0	40.0		33.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.5	5.5		5.5	5.5		
Act Effct Green (s)	12.2	44.5		9.7	42.0		35.1	35.1		35.1	35.1		
Actuated g/C Ratio	0.11	0.40		0.09	0.38		0.32	0.32		0.32	0.32		
v/c Ratio	1.09	0.74		0.68	0.65		0.81	0.42		0.34	0.51		
Control Delay	138.5	31.8		74.0	31.1		62.5	35.7		37.4	37.7		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	138.5	31.8		74.0	31.1		62.5	35.7		37.4	37.7		
LOS	F	C		E	C		E	D		D	D		
Approach Delay		45.3			34.4			48.2			37.6		
Approach LOS		D			C			D			D		
Queue Length 50th (ft)	~160	278		69	229		128	126		50	153		
Queue Length 95th (ft)	#385	518		93	423		#348	249		112	327		
Internal Link Dist (ft)		406			387			396			538		
Turn Bay Length (ft)	150			100			100			100			
Base Capacity (vph)	191	2100		157	2055		252	560		285	546		
Starvation Cap Reductn	0	0		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	1.09	0.69		0.65	0.59		0.81	0.42		0.34	0.51		

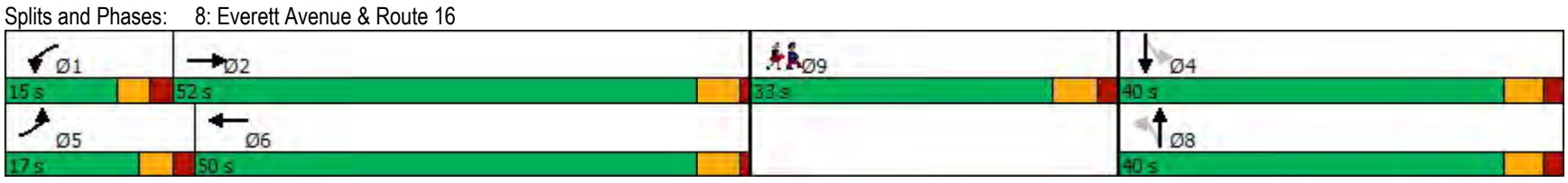
Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 110.3
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 41.1 — Intersection LOS: D
Intersection Capacity Utilization 72.5% — ICU Level of Service C
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

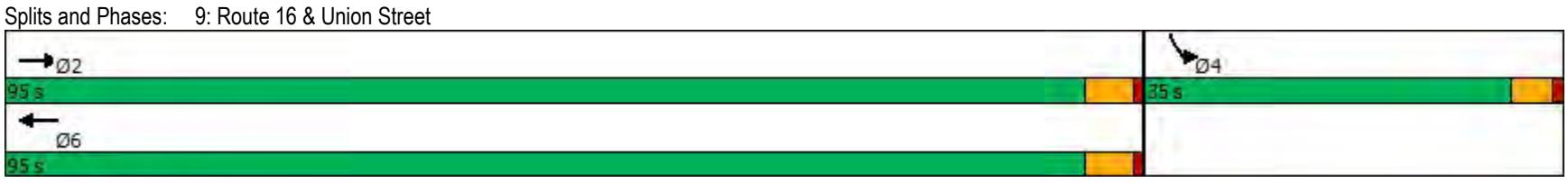
Splits and Phases: 8: Everett Avenue & Route 16



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1277	1199	183	153	4
Future Volume (vph)	0	1277	1199	183	153	4
Satd. Flow (prot)	0	4964	4858	0	1790	0
Flt Permitted					0.954	
Satd. Flow (perm)	0	4964	4858	0	1790	0
Satd. Flow (RTOR)						
Lane Group Flow (vph)	0	1316	1486	0	201	0
Turn Type		NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases						
Total Split (s)		95.0	95.0		35.0	
Total Lost Time (s)		5.0	5.0		4.5	
Act Effct Green (s)		19.7	19.7		9.7	
Actuated g/C Ratio		0.50	0.50		0.25	
v/c Ratio		0.53	0.61		0.45	
Control Delay		7.4	8.2		17.5	
Queue Delay		0.0	0.0		0.0	
Total Delay		7.4	8.2		17.5	
LOS		A	A		B	
Approach Delay		7.4	8.2		17.5	
Approach LOS		A	A		B	
Queue Length 50th (ft)		57	68		35	
Queue Length 95th (ft)		103	123		82	
Internal Link Dist (ft)		219	319		460	
Turn Bay Length (ft)						
Base Capacity (vph)		4964	4858		1432	
Starvation Cap Reductn		0	25		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.27	0.31		0.14	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 39.1	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 8.5	Intersection LOS: A
Intersection Capacity Utilization 43.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: Route 16 & Union Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	205	1077	148	102	1164	36	100	116	44	49	154	118	
Future Volume (vph)	205	1077	148	102	1164	36	100	116	44	49	154	118	
Satd. Flow (prot)	1745	4863	0	1745	4941	0	1752	1772	0	1770	1723	0	
Flt Permitted	0.950			0.950			*0.450			0.497			
Satd. Flow (perm)	1727	4863	0	1745	4941	0	819	1772	0	919	1723	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	223	1361	0	134	1237	0	128	225	0	56	323	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	18.0	67.0		16.0	65.0		31.0	31.0		31.0	31.0		26.0
Total Lost Time (s)	6.0	5.0		6.0	5.0		6.0	6.0		6.0	6.0		
Act Effct Green (s)	12.4	42.4		10.3	40.3		25.8	25.8		25.8	25.8		
Actuated g/C Ratio	0.12	0.43		0.10	0.41		0.26	0.26		0.26	0.26		
v/c Ratio	1.03	0.66		0.74	0.62		0.60	0.49		0.24	0.72		
Control Delay	113.7	24.5		70.7	24.9		50.5	39.8		38.9	47.0		
Queue Delay	0.0	0.1		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	113.7	24.6		70.7	24.9		50.5	39.8		38.9	47.0		
LOS	F	C		E	C		D	D		D	D		
Approach Delay		37.2			29.4			43.7			45.8		
Approach LOS		D			C			D			D		
Queue Length 50th (ft)	133	221		77	201		65	110		26	170		
Queue Length 95th (ft)	#439	382		#208	346		#183	213		87	#447		
Internal Link Dist (ft)		319			1066			414			597		
Turn Bay Length (ft)	100			150			150			150			
Base Capacity (vph)	217	3130		181	3078		212	460		238	447		
Starvation Cap Reductn	0	630		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	1.03	0.54		0.74	0.40		0.60	0.49		0.24	0.72		

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 99.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 35.8 — Intersection LOS: D
Intersection Capacity Utilization 78.0% — ICU Level of Service D
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Washington Avenue & Route 16

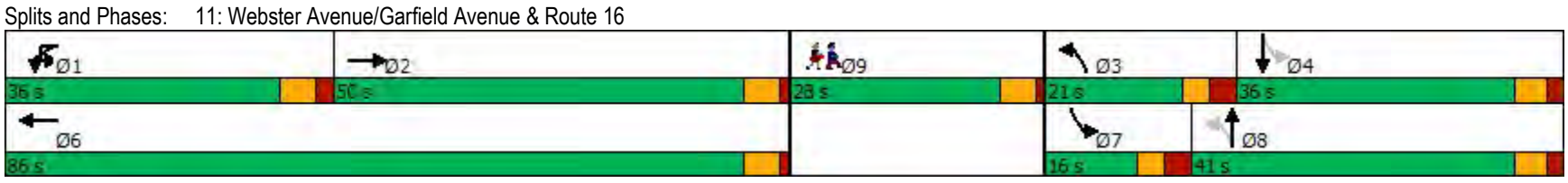
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1120	145	177	132	1169	23	250	216	185	175	159	170	
Future Volume (vph)	0	1120	145	177	132	1169	23	250	216	185	175	159	170	
Satd. Flow (prot)	0	4886	0	0	1685	4778	0	1787	1898	0	1787	1892	0	
Flt Permitted					0.950			*0.600			*0.600			
Satd. Flow (perm)	0	4886	0	0	1678	4778	0	1126	1898	0	1118	1892	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1291	0	0	344	1282	0	272	446	0	199	374	0	
Turn Type		NA		Prot	Prot	NA		pm+pt	NA		pm+pt	NA		
Protected Phases		2		1	1	6		3	8		7	4		9
Permitted Phases								8			4			
Total Split (s)		50.0		36.0	36.0	86.0		21.0	41.0		16.0	36.0		28.0
Total Lost Time (s)		5.0			6.0	5.0		6.0	5.5		6.0	5.5		
Act Effct Green (s)		45.2			30.2	81.4		50.3	35.7		40.2	30.7		
Actuated g/C Ratio		0.30			0.20	0.53		0.33	0.23		0.26	0.20		
v/c Ratio		0.89			1.03	0.50		0.62	1.00		0.59	0.98		
Control Delay		60.1			115.8	24.5		49.4	100.5		51.2	101.5		
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		60.1			115.8	24.5		49.4	100.5		51.2	101.5		
LOS		E			F	C		D	F		D	F		
Approach Delay		60.1				43.8			81.1			84.0		
Approach LOS		E				D			F			F		
Queue Length 50th (ft)		410			321	249		192	411		134	345		
Queue Length 95th (ft)		#615			#641	397		339	#774		241	#642		
Internal Link Dist (ft)		409				879			820			473		
Turn Bay Length (ft)					100			150			100			
Base Capacity (vph)	1452				333	2556		437	445		339	381		
Starvation Cap Reductn	0				0	0		0	0		0	0		
Spillback Cap Reductn	0				0	0		0	0		0	0		
Storage Cap Reductn	0				0	0		0	0		0	0		
Reduced v/c Ratio	0.89				1.03	0.50		0.62	1.00		0.59	0.98		

Intersection Summary

Cycle Length: 171
Actuated Cycle Length: 152.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 60.7 Intersection LOS: E
Intersection Capacity Utilization 93.8% ICU Level of Service F
Analysis Period (min) 15
Description: Note: Phase 7 shows minimum green = 20 while maximum green = 12. Also, phases 1,2,6 show Recall = EXT - I used Min

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Webster Avenue/Garfield Avenue & Route 16



Arterial Level of Service: EB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Lewis Street	III	35	15.6	96.3	111.9	0.12	3.7	F
Second Street	III	35	18.3	87.6	105.9	0.14	4.9	F
Spring Street	III	35	12.6	28.8	41.4	0.09	8.1	F
Dunkin Donuts Lot	III	35	16.1	1.3	17.4	0.12	24.7	B
Vine Street	III	35	14.9	32.7	47.6	0.11	8.4	F
Vale Street	III	35	15.4	9.5	24.9	0.11	16.5	D
Everett Avenue	III	35	24.0	40.9	64.9	0.20	11.1	E
Union Street	III	35	32.0	4.7	36.7	0.27	26.1	B
Washington Avenue	III	35	10.2	32.1	42.3	0.08	6.4	F
Webster Avenue	III	35	37.2	61.4	98.6	0.31	11.3	E
Total	III		196.3	395.3	591.6	1.55	9.4	F

Arterial Level of Service: WB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Garfield Avenue	III	35	21.8	35.9	57.7	0.18	11.3	E
Washington Avenue	III	35	37.2	30.3	67.5	0.31	16.5	D
Union Street	III	35	10.2	6.0	16.2	0.08	16.8	D
Everett Avenue	III	35	32.0	49.3	81.3	0.27	11.8	E
Vale Street	III	35	24.0	8.5	32.5	0.20	22.1	C
Vine Street	III	35	15.4	25.6	41.0	0.11	10.0	F
South Ferry Street	III	35	14.9	29.7	44.6	0.11	8.9	F
Spring Street	III	35	16.1	54.7	70.8	0.12	6.1	F
Second Street	III	35	12.6	111.3	123.9	0.09	2.7	F
Lewis Street	III	35	18.3	45.3	63.6	0.14	8.1	F
Total	III		202.5	396.6	599.1	1.61	9.7	F

Arterial Level of Service: EB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Lewis Street	III	35	15.6	111.8	127.4	0.12	3.3	F
Second Street	III	35	18.3	188.0	206.3	0.14	2.5	F
Spring Street	III	35	12.6	8.9	21.5	0.09	15.6	D
Dunkin Donuts Lot	III	35	16.1	2.4	18.5	0.12	23.2	C
Vine Street	III	35	14.9	120.9	135.8	0.11	2.9	F
Vale Street	III	35	15.4	10.0	25.4	0.11	16.1	D
Everett Avenue	III	35	24.0	36.7	60.7	0.20	11.8	E
Union Street	III	35	32.0	4.6	36.6	0.27	26.2	B
Washington Avenue	III	35	10.2	42.0	52.2	0.08	5.2	F
Webster Avenue	III	35	37.2	102.4	139.6	0.31	8.0	F
Total	III		196.3	627.7	824.0	1.55	6.8	F

Arterial Level of Service: WB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Garfield Avenue	III	35	21.8	24.6	46.4	0.18	14.1	D
Washington Avenue	III	35	37.2	44.1	81.3	0.31	13.7	E
Union Street	III	35	10.2	4.6	14.8	0.08	18.4	C
Everett Avenue	III	35	32.0	44.2	76.2	0.27	12.6	E
Vale Street	III	35	24.0	17.9	41.9	0.20	17.2	D
Vine Street	III	35	15.4	48.9	64.3	0.11	6.4	F
South Ferry Street	III	35	14.9	20.6	35.5	0.11	11.2	E
Spring Street	III	35	16.1	54.7	70.8	0.12	6.1	F
Second Street	III	35	12.6	37.4	50.0	0.09	6.7	F
Lewis Street	III	35	18.3	23.6	41.9	0.14	12.3	E
Total	III		202.5	320.6	523.1	1.61	11.1	E

Arterial Level of Service: EB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Lewis Street	III	35	15.6	61.3	76.9	0.12	5.4	F
Second Street	III	35	18.3	35.6	53.9	0.14	9.6	F
Spring Street	III	35	12.6	21.9	34.5	0.09	9.7	F
Dunkin Donuts Lot	III	35	16.1	0.4	16.5	0.12	26.0	B
Vine Street	III	35	14.9	27.7	42.6	0.11	9.3	F
Vale Street	III	35	15.4	18.4	33.8	0.11	12.1	E
Everett Avenue	III	35	24.0	32.1	56.1	0.20	12.8	E
Union Street	III	35	32.0	7.3	39.3	0.27	24.4	B
Washington Avenue	III	35	10.2	25.1	35.3	0.08	7.7	F
Webster Avenue	III	35	37.2	98.4	135.6	0.31	8.2	F
Total	III		196.3	328.2	524.5	1.55	10.6	E

Arterial Level of Service: WB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Garfield Avenue	III	35	21.8	25.6	47.4	0.18	13.8	E
Washington Avenue	III	35	37.2	25.5	62.7	0.31	17.8	D
Union Street	III	35	10.2	8.4	18.6	0.08	14.6	D
Everett Avenue	III	35	32.0	33.5	65.5	0.27	14.6	D
Vale Street	III	32	25.4	10.4	35.8	0.20	20.1	C
Vine Street	III	35	15.4	15.9	31.3	0.11	13.1	E
South Ferry Street	III	35	14.9	17.5	32.4	0.11	12.3	E
Spring Street	III	35	16.1	25.2	41.3	0.12	10.4	E
Second Street	III	35	12.6	26.5	39.1	0.09	8.6	F
Lewis Street	III	35	18.3	30.3	48.6	0.14	10.6	E
Total	III		203.9	218.8	422.7	1.61	13.7	E

Arterial Level of Service: EB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Lewis Street	III	35	15.6	21.6	37.2	0.12	11.2	E
Second Street	III	35	18.3	30.0	48.3	0.14	10.7	E
Spring Street	III	35	12.6	20.8	33.4	0.09	10.0	E
Dunkin Donuts Lot	III	35	16.1	0.3	16.4	0.12	26.2	B
Vine Street	III	35	14.9	22.9	37.8	0.11	10.5	E
Vale Street	III	35	15.4	19.2	34.6	0.11	11.8	E
Everett Avenue	III	35	24.0	31.8	55.8	0.20	12.9	E
Union Street	III	35	32.0	7.4	39.4	0.27	24.3	B
Washington Avenue	III	35	10.2	24.5	34.7	0.08	7.8	F
Webster Avenue	III	35	37.2	60.1	97.3	0.31	11.5	E
Total	III		196.3	238.6	434.9	1.55	12.8	E

Arterial Level of Service: WB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Garfield Avenue	III	35	21.8	24.5	46.3	0.18	14.1	D
Washington Avenue	III	35	37.2	24.9	62.1	0.31	18.0	D
Union Street	III	35	10.2	8.2	18.4	0.08	14.8	D
Everett Avenue	III	35	32.0	31.1	63.1	0.27	15.2	D
Vale Street	III	32	25.4	10.3	35.7	0.20	20.1	C
Vine Street	III	35	15.4	14.9	30.3	0.11	13.5	E
South Ferry Street	III	35	14.9	16.6	31.5	0.11	12.6	E
Spring Street	III	35	16.1	21.5	37.6	0.12	11.4	E
Second Street	III	35	12.6	21.7	34.3	0.09	9.8	F
Lewis Street	III	35	18.3	21.0	39.3	0.14	13.1	E
Total	III		203.9	194.7	398.6	1.61	14.6	D

Part 2 -Short- and Medium-Term Improvements

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1584	8	0	2047	6	23	10	12	19	18	36	
Future Volume (vph)	0	1584	8	0	2047	6	23	10	12	19	18	36	
Satd. Flow (prot)	0	2021	0	0	2772	0	0	1709	0	0	1691	0	
Flt Permitted								0.761			0.914		
Satd. Flow (perm)	0	2021	0	0	2772	0	0	1319	0	0	1566	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	1712	0	0	2232	0	0	55	0	0	97	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		71.0			71.0		22.0	22.0		22.0	22.0		37.0
Total Lost Time (s)		6.0			6.0			5.5			5.5		
Act Effct Green (s)		98.9			98.9			15.2			15.2		
Actuated g/C Ratio		0.76			0.76			0.12			0.12		
v/c Ratio		1.11			1.06			0.36			0.53		
Control Delay		79.2			54.9			58.0			63.7		
Queue Delay		0.0			0.0			0.0			0.0		
Total Delay		79.2			54.9			58.0			63.7		
LOS		E			D			E			E		
Approach Delay		79.2			54.9			58.0			63.7		
Approach LOS		E			D			E			E		
Queue Length 50th (ft)		~583			~654			43			78		
Queue Length 95th (ft)		#815			#1004			76			108		
Internal Link Dist (ft)		532			675			497			190		
Turn Bay Length (ft)													
Base Capacity (vph)	1536		2107		177		210						
Starvation Cap Reductn	0		0		0		0						
Spillback Cap Reductn	0		0		0		0						
Storage Cap Reductn	0		0		0		0						
Reduced v/c Ratio	1.11		1.06		0.31		0.46						

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 65.5 (50%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 65.3	Intersection LOS: E
Intersection Capacity Utilization 63.4%	ICU Level of Service B
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lewis Street & Route 16

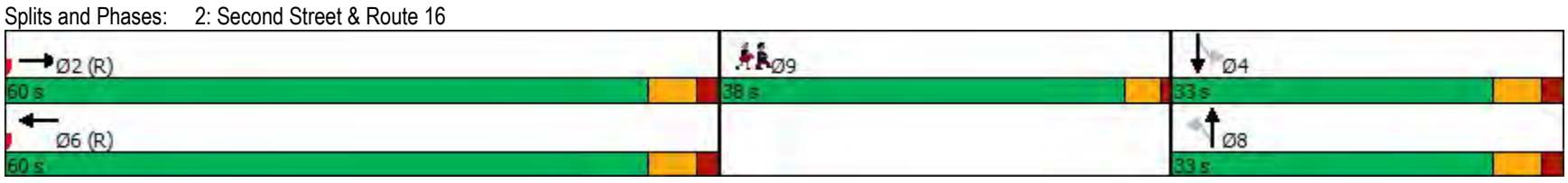
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1187	428	0	1790	92	178	37	3	28	56	73	
Future Volume (vph)	0	1187	428	0	1790	92	178	37	3	28	56	73	
Satd. Flow (prot)	0	4275	0	0	4997	0	0	826	0	0	1718	0	
Flt Permitted								0.618			0.919		
Satd. Flow (perm)	0	4275	0	0	4997	0	0	638	0	0	1590	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	1700	0	0	2139	0	0	273	0	0	200	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		60.0			60.0		33.0	33.0		33.0	33.0		38.0
Total Lost Time (s)		6.0			6.0			6.0			6.0		
Act Effct Green (s)		54.0			54.0			60.6			60.6		
Actuated g/C Ratio		0.41			0.41			0.46			0.46		
v/c Ratio		0.96			1.04			0.93			0.27		
Control Delay		52.3			68.5			71.5			24.9		
Queue Delay		0.0			25.5			0.0			0.0		
Total Delay		52.3			94.0			71.5			24.9		
LOS		D			F			E			C		
Approach Delay		52.3			94.0			71.5			24.9		
Approach LOS		D			F			E			C		
Queue Length 50th (ft)		509			~716			248			95		
Queue Length 95th (ft)		#626			#777			#538			159		
Internal Link Dist (ft)		675			412			757			460		
Turn Bay Length (ft)													
Base Capacity (vph)	1762		2059		295		735						
Starvation Cap Reductn	0		408		0		0						
Spillback Cap Reductn	0		0		0		0						
Storage Cap Reductn	0		0		0		0						
Reduced v/c Ratio	0.96		1.30		0.93		0.27						

Intersection Summary

Cycle Length: 131
Actuated Cycle Length: 131
Offset: 80 (61%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 73.0 — Intersection LOS: E
Intersection Capacity Utilization 72.7% — ICU Level of Service C
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Second Street & Route 16



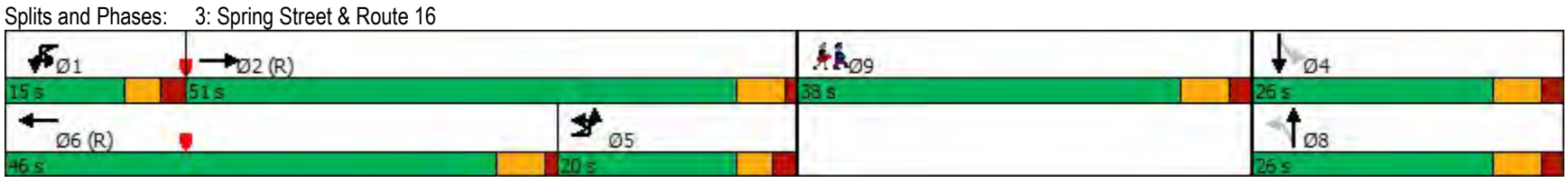
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	10	55	1139	8	19	13	1675	23	34	18	29	37	42	163	
Future Volume (vph)	10	55	1139	8	19	13	1675	23	34	18	29	37	42	163	
Satd. Flow (prot)	0	1405	4844	0	0	1347	4856	0	0	1316	0	0	1372	0	
Flt Permitted		0.950				0.950				0.792			*0.810		
Satd. Flow (perm)	0	1404	4844	0	0	1342	4856	0	0	1158	0	0	1234	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	78	1382	0	0	37	1951	0	0	100	0	0	244	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	20.0	20.0	51.0		15.0	15.0	46.0		26.0	26.0		26.0	26.0		38.0
Total Lost Time (s)		5.0	5.0			5.0	5.0			6.0			6.0		
Act Effct Green (s)		13.6	62.1			8.5	54.4			43.8			43.8		
Actuated g/C Ratio		0.10	0.48			0.07	0.42			0.34			0.34		
v/c Ratio		0.53	0.60			0.42	0.96			0.26			0.59		
Control Delay		68.1	27.4			72.5	34.8			36.4			44.9		
Queue Delay		0.0	0.9			0.0	0.0			0.0			0.0		
Total Delay		68.1	28.3			72.5	34.8			36.4			44.9		
LOS		E	C			E	C			D			D		
Approach Delay			30.5				35.5			36.4			44.9		
Approach LOS			C				D			D			D		
Queue Length 50th (ft)		69	292			36	321			70			193		
Queue Length 95th (ft)		117	396			m50	#805			121			#350		
Internal Link Dist (ft)			412				550			363			385		
Turn Bay Length (ft)	150				225										
Base Capacity (vph)	162	2314			103	2033			389			415			
Starvation Cap Reductn	0	597			0	0			0			0			
Spillback Cap Reductn	0	0			0	0			0			0			
Storage Cap Reductn	0	0			0	0			0			0			
Reduced v/c Ratio	0.48	0.80			0.36	0.96			0.26			0.59			

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 92.5 (71%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 34.2 — Intersection LOS: C
Intersection Capacity Utilization 67.9% — ICU Level of Service C
Analysis Period (min) 15

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

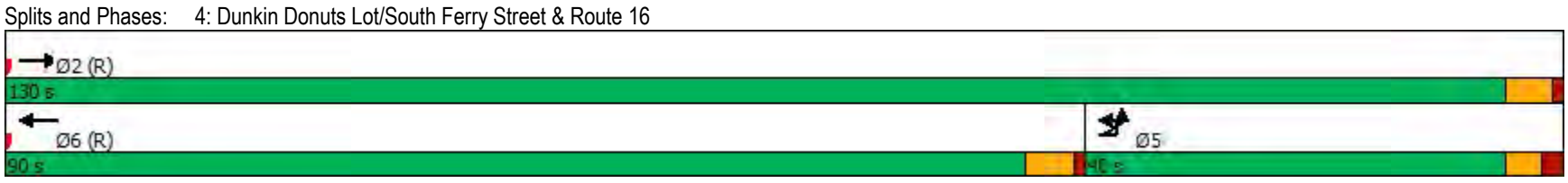
Splits and Phases: 3: Spring Street & Route 16



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	15	126	977	0	0	1591	128	0	0	92	0	0	0
Future Volume (vph)	15	126	977	0	0	1591	128	0	0	92	0	0	0
Satd. Flow (prot)	0	1121	3409	0	0	3415	0	0	0	1406	0	0	0
Flt Permitted		0.800											
Satd. Flow (perm)	0	1120	4262	0	0	3415	0	0	0	1406	0	0	0
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	166	1149	0	0	1810	0	0	0	184	0	0	0
Turn Type	Prot	Prot	NA			NA				Perm			
Protected Phases	5	5	2			6							
Permitted Phases										2			
Total Split (s)	40.0	40.0	130.0			90.0				130.0			
Total Lost Time (s)		5.0	5.0			5.0				5.0			
Act Effct Green (s)		24.9	130.0			95.1				130.0			
Actuated g/C Ratio		0.19	1.00			0.73				1.00			
v/c Ratio		0.78	0.34			0.72				0.13			
Control Delay		43.9	1.5			18.4				0.2			
Queue Delay		0.0	0.0			0.0				0.0			
Total Delay		43.9	1.5			18.4				0.2			
LOS		D	A			B				A			
Approach Delay			6.9			18.4			0.2				
Approach LOS			A			B			A				
Queue Length 50th (ft)		172	23			227				0			
Queue Length 95th (ft)		108	0			280				0			
Internal Link Dist (ft)			550			503			557			380	
Turn Bay Length (ft)	225												
Base Capacity (vph)	301	3409		2499			1406						
Starvation Cap Reductn	0	0		0			0						
Spillback Cap Reductn	0	0		0			0						
Storage Cap Reductn	0	0		0			0						
Reduced v/c Ratio	0.55	0.34		0.72			0.13						

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 25.5 (20%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 12.8	Intersection LOS: B
Intersection Capacity Utilization 49.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Dunkin Donuts Lot/South Ferry Street & Route 16

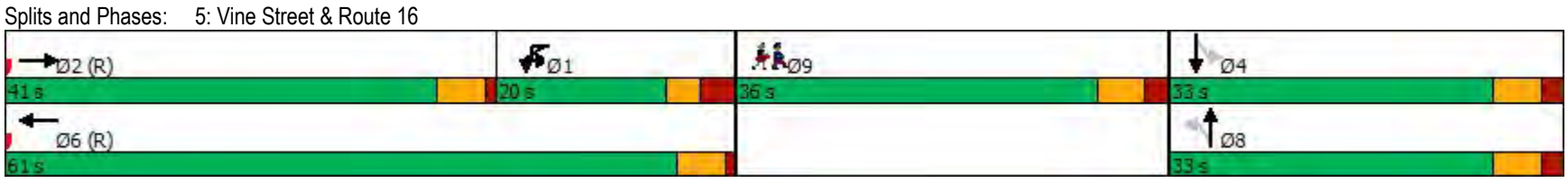


Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	970	99	1	38	1486	22	52	53	28	41	170	181	
Future Volume (vph)	0	970	99	1	38	1486	22	52	53	28	41	170	181	
Satd. Flow (prot)	0	4159	0	0	1301	4852	0	0	1166	0	0	1224	0	
Flt Permitted					0.900				0.580			0.940		
Satd. Flow (perm)	0	4159	0	0	1280	4852	0	0	750	0	0	1277	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1125	0	0	41	1587	0	0	180	0	0	516	0	
Turn Type		NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases		2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)		41.0		20.0	20.0	61.0		33.0	33.0		33.0	33.0		36.0
Total Lost Time (s)		5.0			6.0	5.0			6.0			6.0		
Act Effct Green (s)		40.0			12.8	56.0			58.2			58.2		
Actuated g/C Ratio		0.31			0.10	0.43			0.45			0.45		
v/c Ratio		0.88			0.32	0.76			0.54			0.90		
Control Delay		72.1			72.4	51.8			36.2			54.5		
Queue Delay		0.0			0.0	0.2			0.0			0.0		
Total Delay		72.1			72.4	52.0			36.2			54.5		
LOS		E			E	D			D			D		
Approach Delay		72.1				52.6			36.2			54.5		
Approach LOS		E				D			D			D		
Queue Length 50th (ft)		366			40	522			125			458		
Queue Length 95th (ft)		#459			m83	295			228			#767		
Internal Link Dist (ft)		503				521			407			333		
Turn Bay Length (ft)					100									
Base Capacity (vph)	1279			140	2090		335			571				
Starvation Cap Reductn	0			0	83		0			0				
Spillback Cap Reductn	0			0	0		0			0				
Storage Cap Reductn	0			0	0		0			0				
Reduced v/c Ratio	0.88			0.29	0.79		0.54			0.90				

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 57.5 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 58.4	Intersection LOS: E
Intersection Capacity Utilization 65.1%	ICU Level of Service C
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

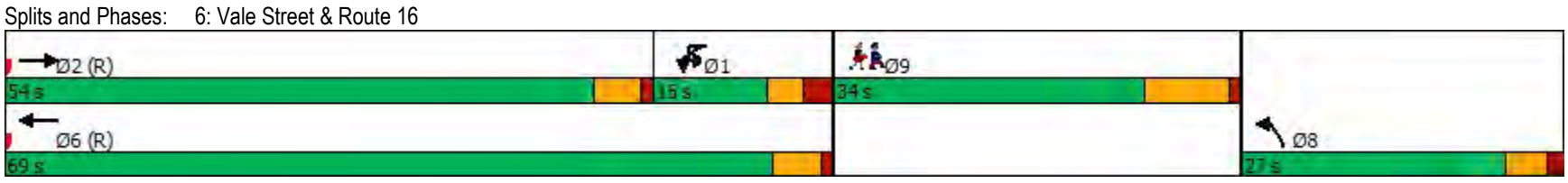
Splits and Phases: 5: Vine Street & Route 16



Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR	Ø9
Lane Configurations								
Traffic Volume (vph)	921	134	3	5	1425	117	2	
Future Volume (vph)	921	134	3	5	1425	117	2	
Satd. Flow (prot)	4178	0	0	1504	4868	1720	0	
Flt Permitted				0.900		0.953		
Satd. Flow (perm)	4178	0	0	1486	4868	1711	0	
Satd. Flow (RTOR)								
Lane Group Flow (vph)	1159	0	0	8	1566	151	0	
Turn Type	NA		Prot	Prot	NA	Prot		
Protected Phases	2		1	1	6	8		9
Permitted Phases								
Total Split (s)	54.0		15.0	15.0	69.0	27.0		34.0
Total Lost Time (s)	5.0			5.5	5.0	5.0		
Act Effct Green (s)	96.1			6.7	99.1	15.7		
Actuated g/C Ratio	0.74			0.05	0.76	0.12		
v/c Ratio	0.38			0.10	0.42	0.73		
Control Delay	1.6			56.7	10.8	74.2		
Queue Delay	0.0			0.0	0.0	0.0		
Total Delay	1.6			56.7	10.8	74.2		
LOS	A			E	B	E		
Approach Delay	1.6				11.1	74.2		
Approach LOS	A				B	E		
Queue Length 50th (ft)	16			5	127	125		
Queue Length 95th (ft)	m43			m6	m261	163		
Internal Link Dist (ft)	521				488	647		
Turn Bay Length (ft)				150				
Base Capacity (vph)	3088			109	3710	291		
Starvation Cap Reductn	0			0	0	0		
Spillback Cap Reductn	0			0	67	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.38			0.07	0.43	0.52		

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 72.5 (56%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 10.6	Intersection LOS: B
Intersection Capacity Utilization 42.5%	ICU Level of Service A
Analysis Period (min) 15	
Description: Note: Splits and offsets need to be optimized via synchro due to lack of coordination data	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: Vale Street & Route 16



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	73	745	146	76	1387	8	126	76	34	71	221	51	
Future Volume (vph)	73	745	146	76	1387	8	126	76	34	71	221	51	
Satd. Flow (prot)	1694	4453	0	1631	4808	0	1711	1606	0	1678	1736	0	
Flt Permitted	0.950			0.950			0.433			0.671			
Satd. Flow (perm)	1694	4453	0	1619	4808	0	776	1606	0	1181	1736	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	97	1048	0	107	1453	0	152	133	0	100	340	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	13.2	36.5		20.5	43.8		40.0	40.0		40.0	40.0		33.0
Total Lost Time (s)	5.5	5.0		5.5	5.0		6.0	6.0		6.0	6.0		
Act Effct Green (s)	12.3	40.3		15.0	42.9		53.4	53.4		53.4	53.4		
Actuated g/C Ratio	0.09	0.31		0.12	0.33		0.41	0.41		0.41	0.41		
v/c Ratio	0.61	0.76		0.57	0.91		0.48	0.20		0.21	0.48		
Control Delay	97.6	20.1		50.7	71.5		36.4	27.3		28.1	32.3		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	97.6	20.1		50.7	71.5		36.4	27.3		28.1	32.3		
LOS	F	C		D	E		D	C		C	C		
Approach Delay		26.6			70.1			32.2			31.3		
Approach LOS		C			E			C			C		
Queue Length 50th (ft)	86	60		92	479		93	72		54	209		
Queue Length 95th (ft)	#150	#385		126	#587		167	123		84	292		
Internal Link Dist (ft)		406			387			396			538		
Turn Bay Length (ft)	150			100			100			100			
Base Capacity (vph)	160	1379		188	1588		318	660		485	713		
Starvation Cap Reductn	0	0		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.61	0.76		0.57	0.91		0.48	0.20		0.21	0.48		

Intersection Summary

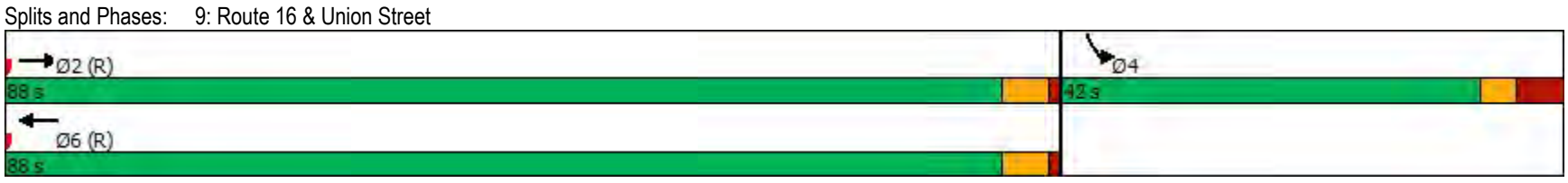
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100.5 (77%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 47.5 — Intersection LOS: D
Intersection Capacity Utilization 73.7% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Everett Avenue & Route 16

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	852	1487	182	175	12
Future Volume (vph)	0	852	1487	182	175	12
Satd. Flow (prot)	0	4600	4703	0	1761	0
Flt Permitted					0.955	
Satd. Flow (perm)	0	4600	4703	0	1761	0
Satd. Flow (RTOR)						
Lane Group Flow (vph)	0	979	1721	0	205	0
Turn Type		NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases						
Total Split (s)		88.0	88.0		42.0	
Total Lost Time (s)		5.0	5.0		7.0	
Act Effct Green (s)		98.4	98.4		19.6	
Actuated g/C Ratio		0.76	0.76		0.15	
v/c Ratio		0.28	0.48		0.77	
Control Delay		0.6	1.9		71.7	
Queue Delay		0.0	0.3		0.0	
Total Delay		0.6	2.3		71.7	
LOS		A	A		E	
Approach Delay		0.6	2.3		71.7	
Approach LOS		A	A		E	
Queue Length 50th (ft)		4	12		168	
Queue Length 95th (ft)		10	81		240	
Internal Link Dist (ft)		219	319		460	
Turn Bay Length (ft)						
Base Capacity (vph)	3481	3559	474			
Starvation Cap Reductn	0	1079	0			
Spillback Cap Reductn	56	0	0			
Storage Cap Reductn	0	0	0			
Reduced v/c Ratio	0.29	0.69	0.43			

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 121.5 (93%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 6.6	Intersection LOS: A
Intersection Capacity Utilization 53.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: Route 16 & Union Street

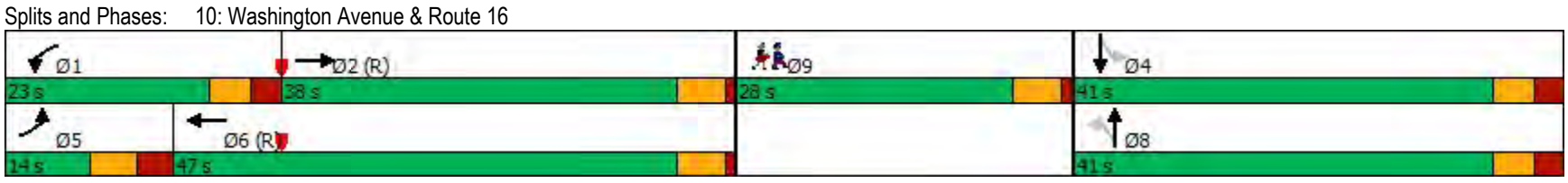


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	80	769	178	179	1429	33	136	89	19	57	190	104	
Future Volume (vph)	80	769	178	179	1429	33	136	89	19	57	190	104	
Satd. Flow (prot)	1694	4510	0	1662	4742	0	1719	1659	0	1736	1650	0	
Flt Permitted	0.950			0.950			0.406			0.669			
Satd. Flow (perm)	1685	4510	0	1662	4742	0	725	1659	0	1194	1650	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	98	1041	0	218	1539	0	160	127	0	72	323	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	14.0	38.0		23.0	47.0		41.0	41.0		41.0	41.0		28.0
Total Lost Time (s)	7.0	5.0		6.0	5.0		6.0	6.0		6.0	6.0		
Act Effct Green (s)	13.1	40.6		23.0	49.4		44.8	44.8		44.8	44.8		
Actuated g/C Ratio	0.10	0.31		0.18	0.38		0.34	0.34		0.34	0.34		
v/c Ratio	0.57	0.74		0.74	0.85		0.64	0.22		0.18	0.57		
Control Delay	79.6	21.7		66.6	43.1		49.8	31.9		31.6	39.7		
Queue Delay	0.0	1.1		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	79.6	22.8		66.6	43.1		49.8	31.9		31.6	39.7		
LOS	E	C		E	D		D	C		C	D		
Approach Delay		27.7			46.0			41.8			38.2		
Approach LOS		C			D			D			D		
Queue Length 50th (ft)	78	178		173	426		110	73		41	214		
Queue Length 95th (ft)	#190	#263		#307	#593		#206	126		74	341		
Internal Link Dist (ft)		319			1066			414			597		
Turn Bay Length (ft)	100			150			150			150			
Base Capacity (vph)	171	1407		294	1803		250	572		411	568		
Starvation Cap Reductn	0	162		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.57	0.84		0.74	0.85		0.64	0.22		0.18	0.57		

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 39.0 — Intersection LOS: D
Intersection Capacity Utilization 79.9% — ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Washington Avenue & Route 16



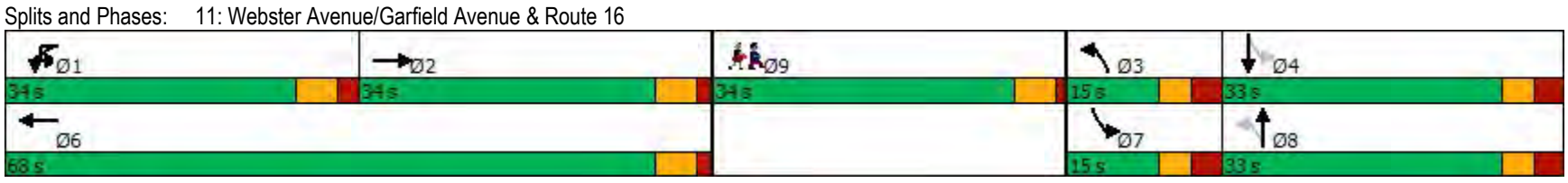
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	748	113	136	203	1752	1	218	122	168	214	167	233	
Future Volume (vph)	0	748	113	136	203	1752	1	218	122	168	214	167	233	
Satd. Flow (prot)	0	4566	0	0	1661	4700	0	1641	1803	0	1770	1856	0	
Flt Permitted					0.950			*0.600			*0.600			
Satd. Flow (perm)	0	4566	0	0	1657	4700	0	1036	1803	0	1112	1856	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	978	0	0	414	1885	0	248	354	0	252	460	0	
Turn Type		NA		Prot	Prot	NA		pm+pt	NA		pm+pt	NA		
Protected Phases		2		1	1	6		3	8		7	4		9
Permitted Phases								8			4			
Total Split (s)		34.0		34.0	34.0	68.0		15.0	33.0		15.0	33.0		34.0
Total Lost Time (s)		5.5			6.0	5.5		6.0	6.0		6.0	6.0		
Act Effct Green (s)		28.6			28.1	62.8		36.2	27.1		36.2	27.1		
Actuated g/C Ratio		0.24			0.23	0.52		0.30	0.22		0.30	0.22		
v/c Ratio		0.90			1.07	0.77		0.70	0.87		0.66	1.10		
Control Delay		57.1			110.0	26.9		45.9	68.2		43.1	118.0		
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		57.1			110.0	26.9		45.9	68.2		43.1	118.0		
LOS		E			F	C		D	E		D	F		
Approach Delay		57.1				41.9			59.0			91.5		
Approach LOS		E				D			E			F		
Queue Length 50th (ft)		258			~332	380		138	254		139	~380		
Queue Length 95th (ft)		#427			#585	637		#295	#459		254	#707		
Internal Link Dist (ft)		409				879			820			473		
Turn Bay Length (ft)					100			150			100			
Base Capacity (vph)	1084				387	2448		356	405		383	418		
Starvation Cap Reductn	0				0	0		0	0		0	0		
Spillback Cap Reductn	0				0	0		0	0		0	0		
Storage Cap Reductn	0				0	0		0	0		0	0		
Reduced v/c Ratio	0.90				1.07	0.77		0.70	0.87		0.66	1.10		

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 120.6
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 55.1 Intersection LOS: E
Intersection Capacity Utilization 90.5% ICU Level of Service E
Analysis Period (min) 15
Description: Note: Phase 7 shows minimum green = 20 while maximum green = 12. Also, phases 1,2,6 show Recall = EXT - I used Min

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Webster Avenue/Garfield Avenue & Route 16



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	2426	29	0	2154	5	22	14	9	9	14	27	
Future Volume (vph)	0	2426	29	0	2154	5	22	14	9	9	14	27	
Satd. Flow (prot)	0	2863	0	0	2891	0	0	1614	0	0	1523	0	
Flt Permitted								0.811			0.945		
Satd. Flow (perm)	0	2863	0	0	2891	0	0	1439	0	0	1595	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2612	0	0	2272	0	0	64	0	0	57	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		88.0			88.0		25.0	25.0		25.0	25.0		37.0
Total Lost Time (s)		5.0			5.0			5.5			5.5		
Act Effct Green (s)		121.0			121.0			13.6			13.5		
Actuated g/C Ratio		0.81			0.81			0.09			0.09		
v/c Ratio		1.13			0.97			0.49			0.40		
Control Delay		83.9			28.5			76.9			71.4		
Queue Delay		0.8			0.0			0.0			0.0		
Total Delay		84.6			28.5			76.9			71.4		
LOS		F			C			E			E		
Approach Delay		84.6			28.5			76.9			71.4		
Approach LOS		F			C			E			E		
Queue Length 50th (ft)		~1047			517			61			54		
Queue Length 95th (ft)		#1319			m#1061			84			97		
Internal Link Dist (ft)		532			675			497			190		
Turn Bay Length (ft)													
Base Capacity (vph)	2309		2331			187			207				
Starvation Cap Reductn	0		0			0			0				
Spillback Cap Reductn	575		0			0			0				
Storage Cap Reductn	0		0			0			0				
Reduced v/c Ratio	1.51		0.97			0.34			0.28				

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 80 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 58.9	Intersection LOS: E
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Lewis Street & Route 16

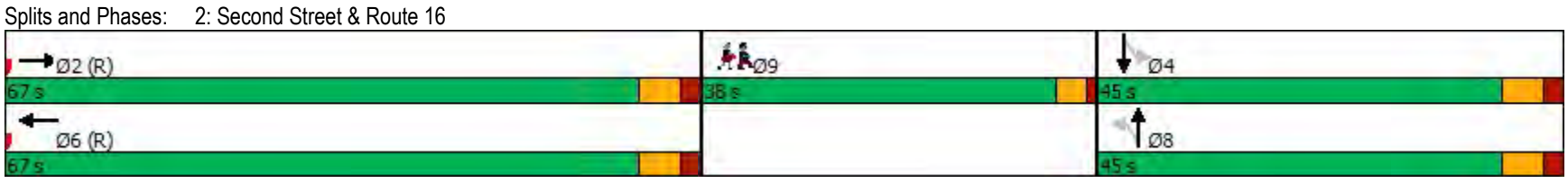
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	2027	417	0	1839	128	268	51	2	45	41	52	
Future Volume (vph)	0	2027	417	0	1839	128	268	51	2	45	41	52	
Satd. Flow (prot)	0	4885	0	0	5029	0	0	895	0	0	1759	0	
Flt Permitted								0.653			0.801		
Satd. Flow (perm)	0	4885	0	0	5029	0	0	830	0	0	1432	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2573	0	0	1987	0	0	353	0	0	159	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		67.0			67.0		45.0	45.0		45.0	45.0		38.0
Total Lost Time (s)		6.0			6.0			6.0			6.0		
Act Effct Green (s)		61.0			61.0			72.6			72.6		
Actuated g/C Ratio		0.41			0.41			0.48			0.48		
v/c Ratio		1.30			0.97			0.88			0.23		
Control Delay		170.7			35.2			58.9			25.5		
Queue Delay		0.1			6.6			0.0			0.0		
Total Delay		170.9			41.8			58.9			25.5		
LOS		F			D			E			C		
Approach Delay		170.9			41.8			58.9			25.5		
Approach LOS		F			D			E			C		
Queue Length 50th (ft)		~1175			231			286			83		
Queue Length 95th (ft)		m#946			m#380			#612			167		
Internal Link Dist (ft)		675			412			757			460		
Turn Bay Length (ft)													
Base Capacity (vph)	1986		2045		402		693						
Starvation Cap Reductn	18		71		0		0						
Spillback Cap Reductn	97		0		0		0						
Storage Cap Reductn	0		0		0		0						
Reduced v/c Ratio	1.36		1.01		0.88		0.23						

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 61 (41%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.30
Intersection Signal Delay: 108.0 Intersection LOS: F
Intersection Capacity Utilization 83.0% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Second Street & Route 16

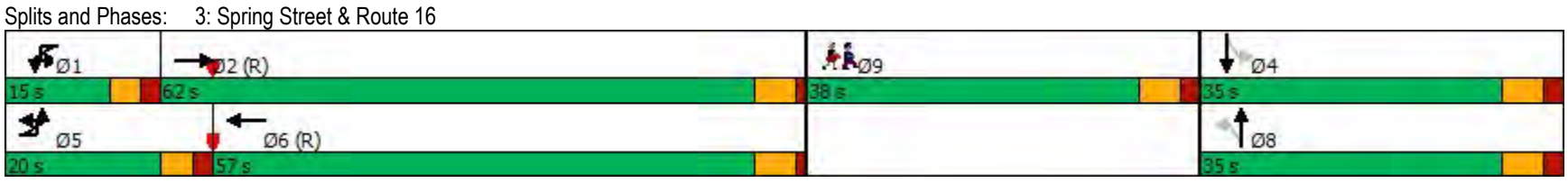


Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	35	114	1871	45	39	44	1742	50	49	50	60	26	35	132	
Future Volume (vph)	35	114	1871	45	39	44	1742	50	49	50	60	26	35	132	
Satd. Flow (prot)	0	1720	5111	0	0	1727	4894	0	0	1409	0	0	1374	0	
Flt Permitted		0.950				0.950				0.770			0.934		
Satd. Flow (perm)	0	1709	5111	0	0	1717	4894	0	0	1205	0	0	1425	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	178	2038	0	0	98	1829	0	0	194	0	0	242	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	20.0	20.0	62.0		15.0	15.0	57.0		35.0	35.0		35.0	35.0		38.0
Total Lost Time (s)		5.0	5.0			5.0	5.0			6.0			6.0		
Act Effct Green (s)		19.1	67.3			10.6	58.8			46.6			46.6		
Actuated g/C Ratio		0.13	0.45			0.07	0.39			0.31			0.31		
v/c Ratio		0.82	0.89			0.81	0.95			0.52			0.55		
Control Delay		96.7	6.7			86.6	52.7			49.5			49.5		
Queue Delay		0.0	18.5			0.0	43.8			0.0			0.0		
Total Delay		96.7	25.3			86.6	96.5			49.5			49.5		
LOS		F	C			F	F			D			D		
Approach Delay			31.0				96.0			49.5			49.5		
Approach LOS			C				F			D			D		
Queue Length 50th (ft)		185	22			88	693			173			217		
Queue Length 95th (ft)		m137	m19			m105	#845			240			288		
Internal Link Dist (ft)			412				550			363			385		
Turn Bay Length (ft)	150				225										
Base Capacity (vph)	218	2292			126	1917			373		442				
Starvation Cap Reductn	0	316			0	372			0		0				
Spillback Cap Reductn	0	49			0	41			0		0				
Storage Cap Reductn	0	0			0	0			0		0				
Reduced v/c Ratio	0.82	1.03			0.78	1.18			0.52		0.55				

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 80 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 60.1 Intersection LOS: E
Intersection Capacity Utilization 74.9% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Spring Street & Route 16

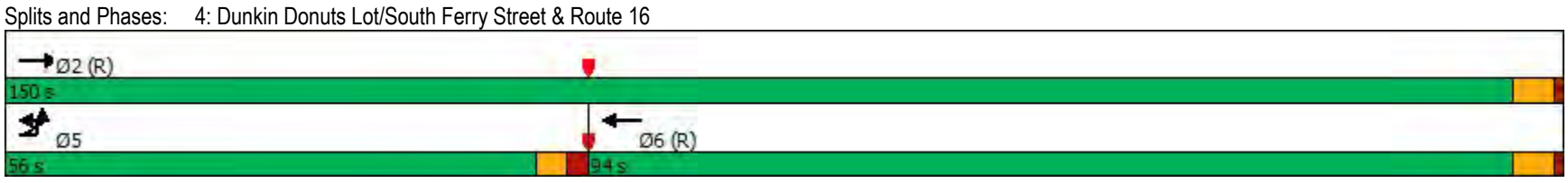


Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	21	330	1645	0	0	1808	69	0	0	72	0	0	0
Future Volume (vph)	21	330	1645	0	0	1808	69	0	0	72	0	0	0
Satd. Flow (prot)	0	1165	3576	0	0	3484	0	0	0	1655	0	0	0
Flt Permitted		0.800											
Satd. Flow (perm)	0	1163	4471	0	0	3484	0	0	0	1655	0	0	0
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	366	1714	0	0	1915	0	0	0	129	0	0	0
Turn Type	Prot	Prot	NA			NA				Perm			
Protected Phases	5	5	2			6							
Permitted Phases										2			
Total Split (s)	56.0	56.0	150.0			94.0				150.0			
Total Lost Time (s)		5.0	5.0			5.0				5.0			
Act Effct Green (s)		48.6	150.0			91.4				150.0			
Actuated g/C Ratio		0.32	1.00			0.61				1.00			
v/c Ratio		0.97	0.48			0.90				0.08			
Control Delay		41.6	4.1			28.0				0.1			
Queue Delay		47.2	0.2			46.2				0.0			
Total Delay		88.8	4.3			74.2				0.1			
LOS		F	A			E				A			
Approach Delay			19.2			74.2			0.1				
Approach LOS			B			E			A				
Queue Length 50th (ft)		345	2			787				0			
Queue Length 95th (ft)		m#565	695			867				0			
Internal Link Dist (ft)			550			503			557			380	
Turn Bay Length (ft)	225												
Base Capacity (vph)	396	3576		2122			1655						
Starvation Cap Reductn	0	0		499			0						
Spillback Cap Reductn	85	932		427			431						
Storage Cap Reductn	0	0		0			0						
Reduced v/c Ratio	1.18	0.65		1.18			0.11						

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 3 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 44.1 Intersection LOS: D
Intersection Capacity Utilization 64.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Dunkin Donuts Lot/South Ferry Street & Route 16



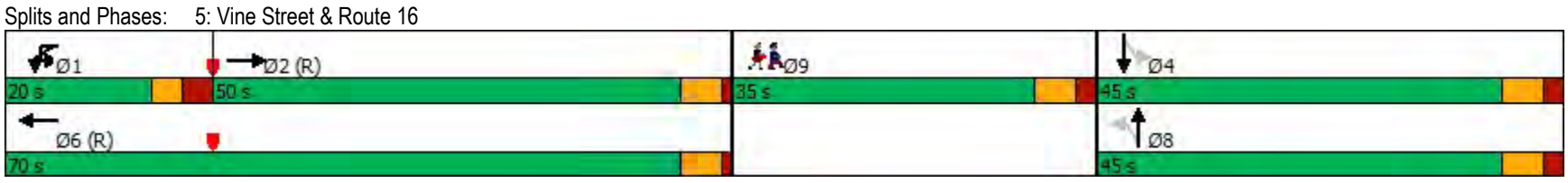
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1631	86	18	24	1606	139	135	194	29	54	101	136	
Future Volume (vph)	0	1631	86	18	24	1606	139	135	194	29	54	101	136	
Satd. Flow (prot)	0	4862	0	0	1669	4846	0	0	1618	0	0	1396	0	
Flt Permitted					0.950				0.647			0.827		
Satd. Flow (perm)	0	4862	0	0	1654	4846	0	0	1064	0	0	1281	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1770	0	0	49	1799	0	0	421	0	0	343	0	
Turn Type		NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases		2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)		50.0		20.0	20.0	70.0		45.0	45.0		45.0	45.0		35.0
Total Lost Time (s)		5.0			6.0	5.0			6.0			6.0		
Act Effct Green (s)		52.8			9.0	65.0			64.4			64.4		
Actuated g/C Ratio		0.35			0.06	0.43			0.43			0.43		
v/c Ratio		1.04			0.49	0.86			0.92			0.62		
Control Delay		70.8			105.8	25.0			67.7			42.4		
Queue Delay		11.2			0.0	47.4			4.4			0.2		
Total Delay		82.0			105.8	72.4			72.1			42.7		
LOS		F			F	E			E			D		
Approach Delay		82.0				73.3			72.1			42.7		
Approach LOS		F				E			E			D		
Queue Length 50th (ft)		~717			50	661			376			253		
Queue Length 95th (ft)		#859			m80	232			#722			450		
Internal Link Dist (ft)		503				521			407			333		
Turn Bay Length (ft)					100									
Base Capacity (vph)	1710			155	2099			456			549			
Starvation Cap Reductn	47			0	55			0			0			
Spillback Cap Reductn	0			0	687			16			20			
Storage Cap Reductn	0			0	0			0			0			
Reduced v/c Ratio	1.06			0.32	1.27			0.96			0.65			

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 74.3 Intersection LOS: E
Intersection Capacity Utilization 80.3% ICU Level of Service D
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Vine Street & Route 16



Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR	Ø9
Lane Configurations								
Traffic Volume (vph)	1573	159	5	0	1415	372	8	
Future Volume (vph)	1573	159	5	0	1415	372	8	
Satd. Flow (prot)	4410	0	0	1504	4916	1787	0	
Flt Permitted				0.900		0.953		
Satd. Flow (perm)	4410	0	0	1478	4916	1764	0	
Satd. Flow (RTOR)								
Lane Group Flow (vph)	1805	0	0	5	1459	422	0	
Turn Type	NA		Prot	Prot	NA	Prot		
Protected Phases	2		1	1	6	8		9
Permitted Phases								
Total Split (s)	70.5		11.5	11.5	82.0	42.0		26.0
Total Lost Time (s)	5.0			5.5	5.0	5.0		
Act Effct Green (s)	92.7			6.0	95.0	39.8		
Actuated g/C Ratio	0.62			0.04	0.63	0.27		
v/c Ratio	0.66			0.08	0.47	0.89		
Control Delay	22.3			65.6	8.2	74.0		
Queue Delay	0.1			0.0	0.0	0.0		
Total Delay	22.4			65.6	8.2	74.0		
LOS	C			E	A	E		
Approach Delay	22.4				8.4	74.0		
Approach LOS	C				A	E		
Queue Length 50th (ft)	242			5	42	388		
Queue Length 95th (ft)	m163			m6	m553	#626		
Internal Link Dist (ft)	521				488	647		
Turn Bay Length (ft)				150				
Base Capacity (vph)	2724			60	3112	481		
Starvation Cap Reductn	176			0	0	0		
Spillback Cap Reductn	0			0	174	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.71			0.08	0.50	0.88		

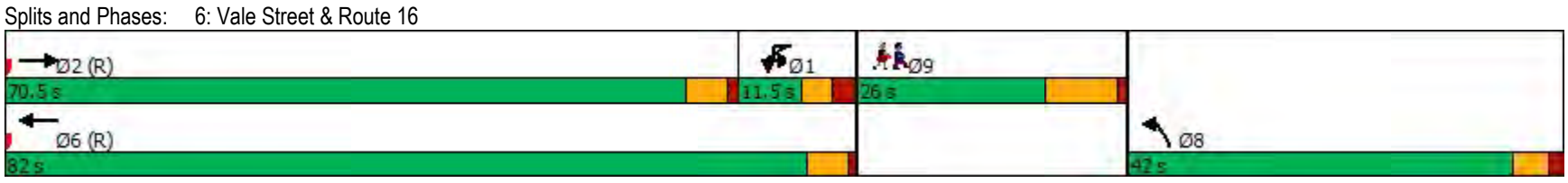
Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 139 (93%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 22.8 Intersection LOS: C
Intersection Capacity Utilization 63.5% ICU Level of Service B
Analysis Period (min) 15
Description: Note: Splits and offsets need to be optimized via synchro due to lack of coordination data

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Vale Street & Route 16

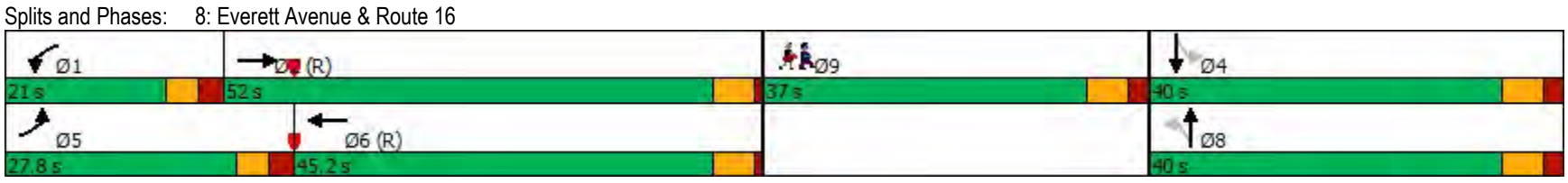


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	232	1377	158	65	1224	21	185	230	50	55	151	42	
Future Volume (vph)	232	1377	158	65	1224	21	185	230	50	55	151	42	
Satd. Flow (prot)	1728	4784	0	1678	4896	0	1694	1737	0	1601	1743	0	
Flt Permitted	0.950			0.950			0.551			0.385			
Satd. Flow (perm)	1722	4784	0	1666	4896	0	970	1737	0	643	1743	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	264	1633	0	73	1284	0	208	346	0	76	210	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	27.8	52.0		21.0	45.2		40.0	40.0		40.0	40.0		37.0
Total Lost Time (s)	5.5	5.0		5.5	5.0		6.0	6.0		6.0	6.0		
Act Effct Green (s)	27.2	54.1		15.1	42.1		54.7	54.7		54.7	54.7		
Actuated g/C Ratio	0.18	0.36		0.10	0.28		0.36	0.36		0.36	0.36		
v/c Ratio	0.85	0.95		0.43	0.94		0.59	0.55		0.32	0.33		
Control Delay	78.2	64.4		86.4	56.3		49.1	43.6		42.2	38.1		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	78.2	64.4		86.4	56.3		49.1	43.6		42.2	38.1		
LOS	E	E		F	E		D	D		D	D		
Approach Delay		66.3			57.9			45.7			39.2		
Approach LOS		E			E			D			D		
Queue Length 50th (ft)	270	413		76	487		163	265		53	147		
Queue Length 95th (ft)	#457	#770		131	#580		276	352		85	238		
Internal Link Dist (ft)		406			387			396			538		
Turn Bay Length (ft)	150			100			100			100			
Base Capacity (vph)	312	1726		173	1373		353	633		234	635		
Starvation Cap Reductn	0	0		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.85	0.95		0.42	0.94		0.59	0.55		0.32	0.33		

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 110 (73%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 58.8 Intersection LOS: E
Intersection Capacity Utilization 85.3% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Everett Avenue & Route 16

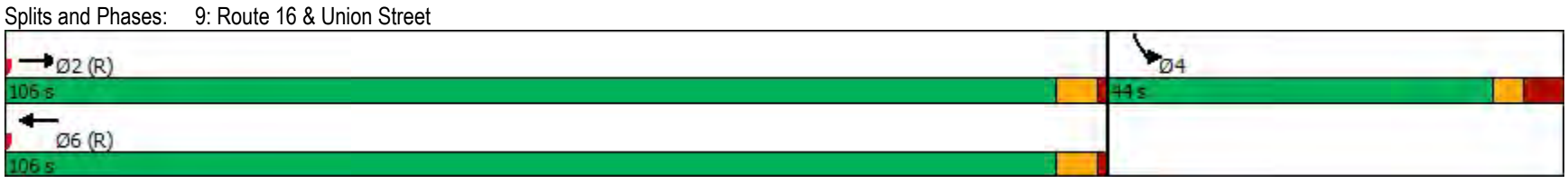


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1490	1299	224	126	11
Future Volume (vph)	0	1490	1299	224	126	11
Satd. Flow (prot)	0	4868	4797	0	1764	0
Flt Permitted					0.956	
Satd. Flow (perm)	0	4868	4797	0	1764	0
Satd. Flow (RTOR)						
Lane Group Flow (vph)	0	1620	1603	0	145	0
Turn Type		NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases						
Total Split (s)		106.0	106.0		44.0	
Total Lost Time (s)		5.0	5.0		7.0	
Act Effct Green (s)		121.2	121.2		16.8	
Actuated g/C Ratio		0.81	0.81		0.11	
v/c Ratio		0.41	0.41		0.74	
Control Delay		14.3	8.3		85.2	
Queue Delay		0.3	0.8		0.0	
Total Delay		14.6	9.1		85.2	
LOS		B	A		F	
Approach Delay		14.6	9.1		85.2	
Approach LOS		B	A		F	
Queue Length 50th (ft)		561	143		140	
Queue Length 95th (ft)		m595	259		209	
Internal Link Dist (ft)		219	319		460	
Turn Bay Length (ft)						
Base Capacity (vph)		3933	3876		435	
Starvation Cap Reductn		0	1803		0	
Spillback Cap Reductn		1388	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.64	0.77		0.33	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 10 (7%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 47.8%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Route 16 & Union Street

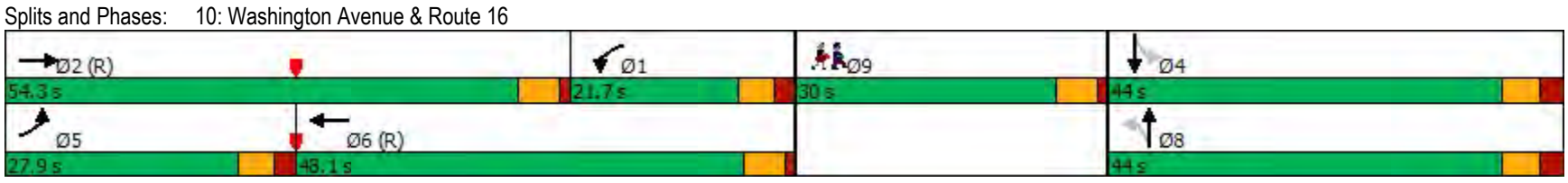


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	218	1185	213	155	1264	31	139	234	23	57	133	120	
Future Volume (vph)	218	1185	213	155	1264	31	139	234	23	57	133	120	
Satd. Flow (prot)	1745	4734	0	1728	4891	0	1736	1802	0	1770	1665	0	
Flt Permitted	0.950			0.950			0.420			0.421			
Satd. Flow (perm)	1738	4734	0	1727	4891	0	757	1802	0	775	1665	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	251	1607	0	174	1423	0	164	286	0	64	287	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	27.9	54.3		21.7	48.1		44.0	44.0		44.0	44.0		30.0
Total Lost Time (s)	5.5	5.0		5.5	5.0		6.0	6.0		6.0	6.0		
Act Effct Green (s)	24.8	60.4		16.2	51.9		47.7	47.7		47.7	47.7		
Actuated g/C Ratio	0.17	0.40		0.11	0.35		0.32	0.32		0.32	0.32		
v/c Ratio	0.87	0.84		0.94	0.84		0.68	0.50		0.26	0.54		
Control Delay	66.2	48.8		116.2	51.2		61.2	45.5		42.3	47.2		
Queue Delay	0.0	5.4		0.0	0.0		0.2	0.0		0.0	0.0		
Total Delay	66.2	54.3		116.2	51.2		61.3	45.5		42.3	47.3		
LOS	E	D		F	D		E	D		D	D		
Approach Delay		55.9			58.3			51.3			46.4		
Approach LOS		E			E			D			D		
Queue Length 50th (ft)	252	602		172	461		135	220		45	224		
Queue Length 95th (ft)	#415	#684		#316	#632		223	331		92	331		
Internal Link Dist (ft)		319			1066			414			597		
Turn Bay Length (ft)	100			150			150			150			
Base Capacity (vph)	288	1907		186	1691		240	572		246	528		
Starvation Cap Reductn	0	250		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		2	0		0	6		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.87	0.97		0.94	0.84		0.69	0.50		0.26	0.55		

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 79 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 55.5 — Intersection LOS: E
Intersection Capacity Utilization 81.3% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Washington Avenue & Route 16



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1164	181	266	111	1194	13	288	349	219	226	270	175	
Future Volume (vph)	0	1164	181	266	111	1194	13	288	349	219	226	270	175	
Satd. Flow (prot)	0	4775	0	0	1673	4783	0	1736	1920	0	1787	1915	0	
Flt Permitted					0.950			*0.800			*0.800			
Satd. Flow (perm)	0	4775	0	0	1661	4783	0	1455	1920	0	1494	1915	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1373	0	0	418	1326	0	327	617	0	251	529	0	
Turn Type		NA		Prot	Prot	NA		pm+pt	NA		pm+pt	NA		
Protected Phases		2		1	1	6		3	8		7	4		9
Permitted Phases								8			4			
Total Split (s)		48.0		37.0	37.0	85.0		14.0	45.0		14.0	45.0		36.0
Total Lost Time (s)		5.5			6.0	5.0		6.0	5.5		5.0	5.5		
Act Effct Green (s)		42.7			31.2	80.4		47.2	39.7		49.3	39.7		
Actuated g/C Ratio		0.28			0.20	0.52		0.31	0.26		0.32	0.26		
v/c Ratio		1.03			1.23	0.53		0.71	1.24		0.51	1.07		
Control Delay		86.0			175.4	26.1		55.8	170.5		45.4	112.1		
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		86.0			175.4	26.1		55.8	170.5		45.4	112.1		
LOS		F			F	C		E	F		D	F		
Approach Delay		86.0				61.9			130.8			90.6		
Approach LOS		F				E			F			F		
Queue Length 50th (ft)		468			~463	270		238	~688		170	~505		
Queue Length 95th (ft)		#731			#819	426		402	#1130		306	#828		
Internal Link Dist (ft)		409				879			820			473		
Turn Bay Length (ft)					100			150			100			
Base Capacity (vph)	1331				340	2511		463	497		497	496		
Starvation Cap Reductn	0				0	0		0	0		0	0		
Spillback Cap Reductn	0				0	0		0	0		0	0		
Storage Cap Reductn	0				0	0		0	0		0	0		
Reduced v/c Ratio	1.03				1.23	0.53		0.71	1.24		0.51	1.07		

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 153.2	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 86.8	Intersection LOS: F
Intersection Capacity Utilization 110.6%	ICU Level of Service H
Analysis Period (min) 15	
Description: Note: turning movmement counts show no volume heading southbound on Webster. Volumes shown were extrapolated from 2016 TMCs	

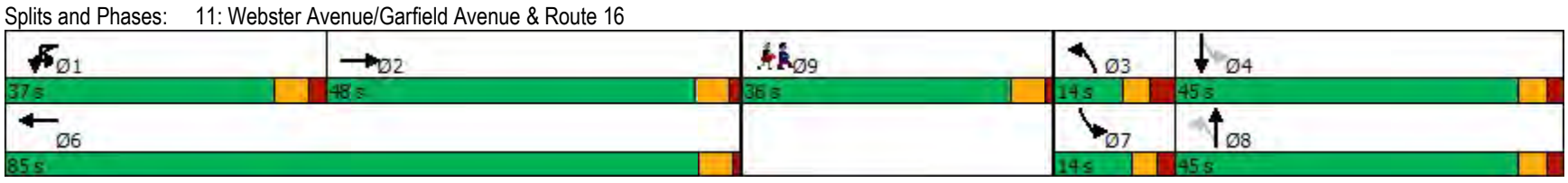
Note: Phase 7 shows minimum green = 20 while maximum green = 12. Also, phases 1,2,6 show Recall = EXT - I used Min

* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Webster Avenue/Garfield Avenue & Route 16

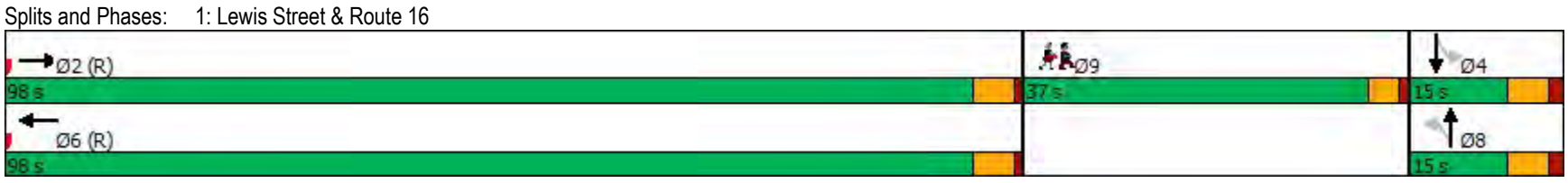


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	2108	18	0	2045	24	15	8	9	24	20	21	
Future Volume (vph)	0	2108	18	0	2045	24	15	8	9	24	20	21	
Satd. Flow (prot)	0	3131	0	0	3131	0	0	1631	0	0	1612	0	
Flt Permitted								0.828			0.884		
Satd. Flow (perm)	0	3131	0	0	3131	0	0	1501	0	0	1574	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2192	0	0	2325	0	0	43	0	0	78	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		98.0			98.0		15.0	15.0		15.0	15.0		37.0
Total Lost Time (s)		5.0			5.0			5.5			5.5		
Act Effct Green (s)		115.4			115.4			15.3			15.3		
Actuated g/C Ratio		0.77			0.77			0.10			0.10		
v/c Ratio		0.91			0.97			0.28			0.49		
Control Delay		23.0			26.5			65.7			73.2		
Queue Delay		33.1			0.0			0.0			0.0		
Total Delay		56.1			26.5			65.7			73.2		
LOS		E			C			E			E		
Approach Delay		56.1			26.5			65.7			73.2		
Approach LOS		E			C			E			E		
Queue Length 50th (ft)		374			328			39			73		
Queue Length 95th (ft)		#957			m#1012			65			116		
Internal Link Dist (ft)		532			675			497			190		
Turn Bay Length (ft)													
Base Capacity (vph)	2408		2408			153			160				
Starvation Cap Reductn	0		0			0			0				
Spillback Cap Reductn	360		0			0			0				
Storage Cap Reductn	0		0			0			0				
Reduced v/c Ratio	1.07		0.97			0.28			0.49				

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 110 (73%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 41.6	Intersection LOS: D
Intersection Capacity Utilization 58.8%	ICU Level of Service B
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Lewis Street & Route 16

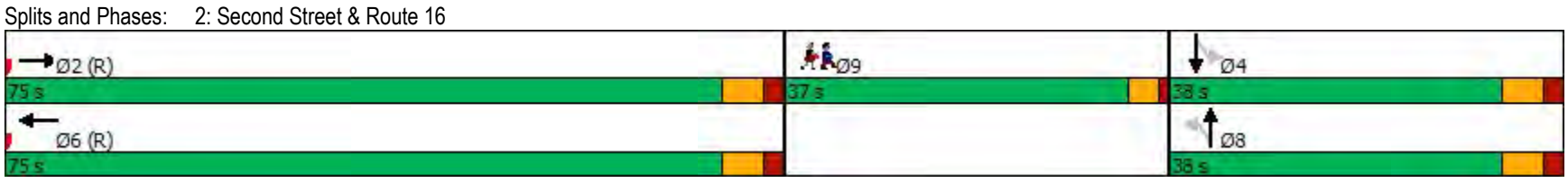


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1712	428	0	1702	132	306	74	8	43	60	61	
Future Volume (vph)	0	1712	428	0	1702	132	306	74	8	43	60	61	
Satd. Flow (prot)	0	4529	0	0	5083	0	0	1776	0	0	1770	0	
Flt Permitted								0.616			0.831		
Satd. Flow (perm)	0	4529	0	0	5083	0	0	1134	0	0	1490	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2253	0	0	2183	0	0	451	0	0	197	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		75.0			75.0		38.0	38.0		38.0	38.0		37.0
Total Lost Time (s)		6.0			6.0			6.0			6.0		
Act Effct Green (s)		69.0			69.0			60.2			60.2		
Actuated g/C Ratio		0.46			0.46			0.40			0.40		
v/c Ratio		1.08			0.93			0.99			0.33		
Control Delay		73.9			20.7			84.1			35.7		
Queue Delay		7.9			1.3			4.4			0.0		
Total Delay		81.9			22.0			88.5			35.7		
LOS		F			C			F			D		
Approach Delay		81.9			22.0			88.5			35.7		
Approach LOS		F			C			F			D		
Queue Length 50th (ft)		~902			799			390			118		
Queue Length 95th (ft)		#980			m118			#725			209		
Internal Link Dist (ft)		675			412			757			460		
Turn Bay Length (ft)													
Base Capacity (vph)	2083		2338		455		597						
Starvation Cap Reductn	42		55		0		0						
Spillback Cap Reductn	104		0		8		11						
Storage Cap Reductn	0		0		0		0						
Reduced v/c Ratio	1.14		0.96		1.01		0.34						

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 120 (80%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 55.0	Intersection LOS: D
Intersection Capacity Utilization 88.4%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Second Street & Route 16



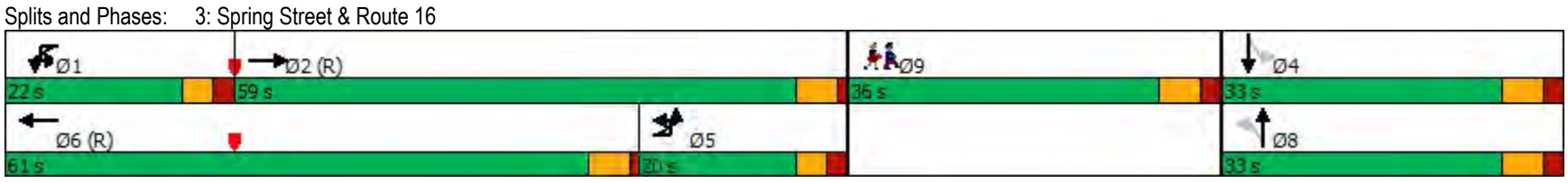
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	47	109	1561	46	66	54	1608	45	63	51	85	40	43	116	
Future Volume (vph)	47	109	1561	46	66	54	1608	45	63	51	85	40	43	116	
Satd. Flow (prot)	0	1488	5063	0	0	1449	4940	0	0	1420	0	0	1403	0	
Flt Permitted		0.900				0.900				*0.800			*0.810		
Satd. Flow (perm)	0	1485	5063	0	0	1442	4940	0	0	1262	0	0	1262	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	166	1640	0	0	160	1922	0	0	234	0	0	240	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	20.0	20.0	59.0		22.0	22.0	61.0		33.0	33.0		33.0	33.0		36.0
Total Lost Time (s)		5.0	5.0			5.0	5.0			6.0			6.0		
Act Effct Green (s)		15.0	63.9			19.5	68.3			41.1			41.1		
Actuated g/C Ratio		0.10	0.43			0.13	0.46			0.27			0.27		
v/c Ratio		1.12	0.76			0.85	0.85			0.68			0.70		
Control Delay		96.8	6.9			77.0	28.9			60.3			61.3		
Queue Delay		0.0	3.6			0.0	7.3			0.0			0.0		
Total Delay		96.8	10.4			77.0	36.2			60.3			61.3		
LOS		F	B			E	D			E			E		
Approach Delay			18.4				39.3			60.3			61.3		
Approach LOS			B				D			E			E		
Queue Length 50th (ft)		~208	19			143	663			225			233		
Queue Length 95th (ft)		m#185	m305			#256	#789			323			323		
Internal Link Dist (ft)			412				550			363			385		
Turn Bay Length (ft)	150				225										
Base Capacity (vph)	148	2155			188	2250			345			345			
Starvation Cap Reductn	0	415			0	150			0			0			
Spillback Cap Reductn	0	0			0	304			0			0			
Storage Cap Reductn	0	0			0	0			0			0			
Reduced v/c Ratio	1.12	0.94			0.85	0.99			0.68			0.70			

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 147 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 33.0 — Intersection LOS: C
Intersection Capacity Utilization 72.5% — ICU Level of Service C
Analysis Period (min) 15

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Spring Street & Route 16

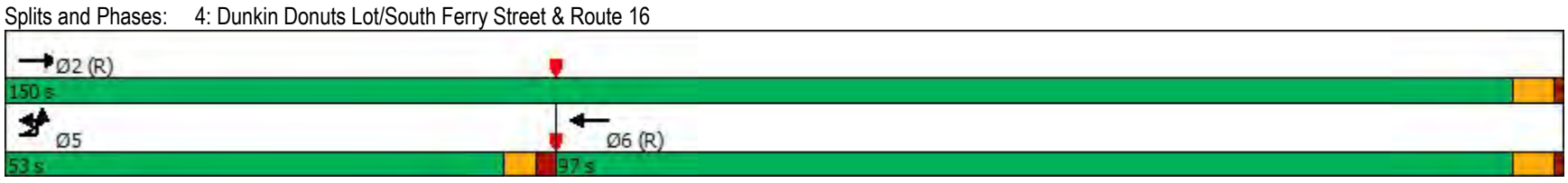


Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	21	221	1510	0	0	1732	67	0	0	60	0	0	0
Future Volume (vph)	21	221	1510	0	0	1732	67	0	0	60	0	0	0
Satd. Flow (prot)	0	1170	3576	0	0	4295	0	0	0	1589	0	0	0
Flt Permitted		0.800											
Satd. Flow (perm)	0	1169	4471	0	0	4295	0	0	0	1589	0	0	0
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	263	1624	0	0	2044	0	0	0	65	0	0	0
Turn Type	Prot	Prot	NA			NA				Perm			
Protected Phases	5	5	2			6							
Permitted Phases										2			
Total Split (s)	53.0	53.0	150.0			97.0				150.0			
Total Lost Time (s)		5.0	5.0			5.0				5.0			
Act Effct Green (s)		37.2	150.0			102.8				150.0			
Actuated g/C Ratio		0.25	1.00			0.69				1.00			
v/c Ratio		0.91	0.45			0.69				0.04			
Control Delay		50.0	2.6			12.6				0.1			
Queue Delay		0.0	0.4			0.7				0.0			
Total Delay		50.0	3.0			13.3				0.1			
LOS		D	A			B				A			
Approach Delay			9.6			13.3			0.1				
Approach LOS			A			B			A				
Queue Length 50th (ft)		278	13			767				0			
Queue Length 95th (ft)		m425	551			787				0			
Internal Link Dist (ft)			550			503			557			380	
Turn Bay Length (ft)	225												
Base Capacity (vph)	374	3576		2943			1589						
Starvation Cap Reductn	0	0		453			0						
Spillback Cap Reductn	0	1232		508			547						
Storage Cap Reductn	0	0		0			0						
Reduced v/c Ratio	0.70	0.69		0.84			0.06						

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 77 (51%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 56.7%	ICU Level of Service B
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Dunkin Donuts Lot/South Ferry Street & Route 16



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1462	108	9	22	1540	95	127	103	37	75	120	132	
Future Volume (vph)	0	1462	108	9	22	1540	95	127	103	37	75	120	132	
Satd. Flow (prot)	0	4414	0	0	1504	4870	0	0	1629	0	0	1561	0	
Flt Permitted					0.900				0.572			0.828		
Satd. Flow (perm)	0	4414	0	0	1494	4870	0	0	951	0	0	1305	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1688	0	0	42	1703	0	0	294	0	0	359	0	
Turn Type		NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases		2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)		64.0		20.0	20.0	84.0		30.0	30.0		30.0	30.0		36.0
Total Lost Time (s)		5.0			6.0	5.0			6.0			6.0		
Act Effct Green (s)		66.8			9.0	79.0			55.2			55.2		
Actuated g/C Ratio		0.45			0.06	0.53			0.37			0.37		
v/c Ratio		0.86			0.47	0.66			0.84			0.75		
Control Delay		55.9			75.0	25.9			64.9			52.5		
Queue Delay		3.5			0.0	0.5			0.0			0.0		
Total Delay		59.4			75.0	26.3			64.9			52.5		
LOS		E			E	C			E			D		
Approach Delay		59.4				27.5			64.9			52.5		
Approach LOS		E				C			E			D		
Queue Length 50th (ft)		620			45	421			272			317		
Queue Length 95th (ft)		#691			m76	499			#613			#679		
Internal Link Dist (ft)		503				521			407			333		
Turn Bay Length (ft)					100									
Base Capacity (vph)	1965			140	2564			350			480			
Starvation Cap Reductn	104			0	367			0			0			
Spillback Cap Reductn	197			0	382			0			0			
Storage Cap Reductn	0			0	0			0			0			
Reduced v/c Ratio	0.95			0.30	0.78			0.84			0.75			

Intersection Summary

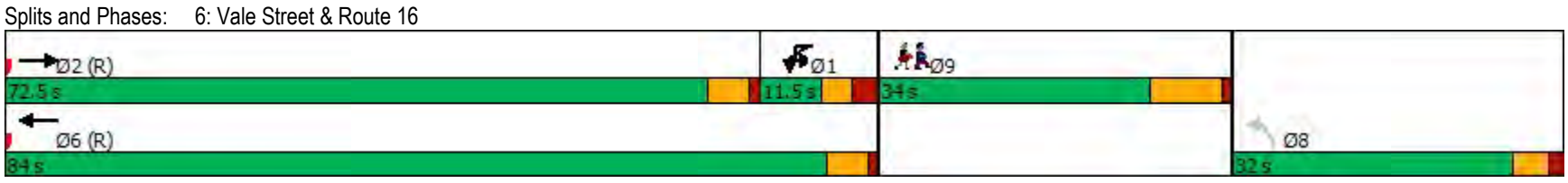
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 80 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 45.6 Intersection LOS: D
Intersection Capacity Utilization 69.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Vine Street & Route 16

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR	Ø9
Lane Configurations								
Traffic Volume (vph)	1413	187	17	7	1442	224	1	
Future Volume (vph)	1413	187	17	7	1442	224	1	
Satd. Flow (prot)	4816	0	0	1745	4916	1791	0	
Flt Permitted				0.950		0.953		
Satd. Flow (perm)	4816	0	0	1745	4916	1779	0	
Satd. Flow (RTOR)								
Lane Group Flow (vph)	1860	0	0	25	1502	242	0	
Turn Type	NA		Prot	Prot	NA	Perm		
Protected Phases	2		1	1	6			9
Permitted Phases						8		
Total Split (s)	72.5		11.5	11.5	84.0	32.0		34.0
Total Lost Time (s)	5.0			5.5	5.0	5.0		
Act Effct Green (s)	103.0			6.0	109.9	24.9		
Actuated g/C Ratio	0.69			0.04	0.73	0.17		
v/c Ratio	0.56			0.36	0.42	0.82		
Control Delay	9.5			69.3	12.9	81.7		
Queue Delay	0.8			0.0	0.0	1.6		
Total Delay	10.3			69.3	12.9	83.2		
LOS	B			E	B	F		
Approach Delay	10.3				13.8	83.2		
Approach LOS	B				B	F		
Queue Length 50th (ft)	30			21	175	231		
Queue Length 95th (ft)	706			m25	m234	314		
Internal Link Dist (ft)	521				488	647		
Turn Bay Length (ft)				150				
Base Capacity (vph)	3307			69	3601	336		
Starvation Cap Reductn	1005			0	0	0		
Spillback Cap Reductn	0			0	0	23		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.81			0.36	0.42	0.77		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 120 (80%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 16.7	Intersection LOS: B
Intersection Capacity Utilization 52.3%	ICU Level of Service A
Analysis Period (min) 15	
Description: Note: Splits and offsets need to be optimized via synchro due to lack of coordination data	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: Vale Street & Route 16



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	186	1221	187	101	1213	18	230	173	82	90	219	76	
Future Volume (vph)	186	1221	187	101	1213	18	230	173	82	90	219	76	
Satd. Flow (prot)	1745	4806	0	1694	4900	0	1728	1714	0	1694	1746	0	
Flt Permitted	0.950			0.950			0.411			0.450			
Satd. Flow (perm)	1745	4806	0	1690	4900	0	742	1714	0	799	1746	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	204	1437	0	123	1398	0	247	283	0	100	314	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	30.0	57.0		28.0	55.0		30.0	30.0		30.0	30.0		35.0
Total Lost Time (s)	5.5	5.0		5.5	5.0		6.0	6.0		6.0	6.0		
Act Effct Green (s)	21.4	52.0		19.4	50.0		52.5	52.5		52.5	52.5		
Actuated g/C Ratio	0.14	0.35		0.13	0.33		0.35	0.35		0.35	0.35		
v/c Ratio	0.82	0.86		0.56	0.86		0.95	0.47		0.36	0.51		
Control Delay	89.4	38.6		43.8	45.0		91.8	45.2		46.5	46.0		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	89.4	38.6		43.8	45.0		91.8	45.2		46.5	46.0		
LOS	F	D		D	D		F	D		D	D		
Approach Delay		44.9			44.9			66.9			46.2		
Approach LOS		D			D			E			D		
Queue Length 50th (ft)	211	523		116	369		212	194		66	220		
Queue Length 95th (ft)	m#298	355		130	420		#508	366		155	#412		
Internal Link Dist (ft)		406			387			396			538		
Turn Bay Length (ft)	150			100			100			100			
Base Capacity (vph)	285	1666		254	1633		259	599		279	611		
Starvation Cap Reductn	0	0		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.72	0.86		0.48	0.86		0.95	0.47		0.36	0.51		

Intersection Summary

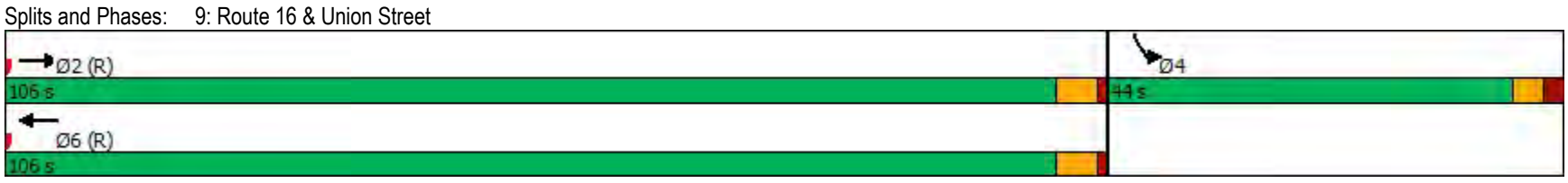
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 47.9 Intersection LOS: D
Intersection Capacity Utilization 88.3% ICU Level of Service E
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Everett Avenue & Route 16

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1432	1315	175	146	11
Future Volume (vph)	0	1432	1315	175	146	11
Satd. Flow (prot)	0	4916	4828	0	1798	0
Flt Permitted					0.955	
Satd. Flow (perm)	0	4916	4828	0	1798	0
Satd. Flow (RTOR)						
Lane Group Flow (vph)	0	1446	1689	0	175	0
Turn Type		NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases						
Total Split (s)		106.0	106.0		44.0	
Total Lost Time (s)		5.0	5.0		5.0	
Act Effct Green (s)		120.9	120.9		19.1	
Actuated g/C Ratio		0.81	0.81		0.13	
v/c Ratio		0.36	0.43		0.77	
Control Delay		2.1	0.9		83.9	
Queue Delay		0.0	0.1		0.0	
Total Delay		2.1	1.0		83.9	
LOS		A	A		F	
Approach Delay		2.1	1.0		83.9	
Approach LOS		A	A		F	
Queue Length 50th (ft)		13	44		168	
Queue Length 95th (ft)		84	8		239	
Internal Link Dist (ft)		219	319		460	
Turn Bay Length (ft)						
Base Capacity (vph)		3962	3891		467	
Starvation Cap Reductn		0	794		0	
Spillback Cap Reductn		46	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.37	0.55		0.37	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 120 (80%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 5.9	Intersection LOS: A
Intersection Capacity Utilization 46.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: Route 16 & Union Street



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	212	1188	178	12	76	1224	38	113	123	55	60	158	153	
Future Volume (vph)	212	1188	178	12	76	1224	38	113	123	55	60	158	153	
Satd. Flow (prot)	1745	4757	0	0	1701	4895	0	1736	1754	0	1770	1708	0	
Flt Permitted	0.950				0.950			*0.450			0.460			
Satd. Flow (perm)	1742	4757	0	0	1694	4895	0	818	1754	0	854	1708	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	230	1438	0	0	116	1342	0	128	203	0	64	331	0	
Turn Type	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)	30.0	61.0		21.0	21.0	52.0		38.0	38.0		38.0	38.0		30.0
Total Lost Time (s)	8.0	5.0			7.5	5.0		5.5	5.5		5.5	5.5		
Act Effct Green (s)	22.0	75.6			13.1	66.2		34.1	34.1		34.1	34.1		
Actuated g/C Ratio	0.15	0.50			0.09	0.44		0.23	0.23		0.23	0.23		
v/c Ratio	0.90	0.60			0.78	0.62		0.69	0.51		0.33	0.85		
Control Delay	77.3	16.9			99.2	36.7		71.9	54.6		51.9	75.8		
Queue Delay	0.0	0.5			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	77.3	17.4			99.2	36.7		71.9	54.6		51.9	75.8		
LOS	E	B			F	D		E	D		D	E		
Approach Delay		25.6				41.6			61.3			71.9		
Approach LOS		C				D			E			E		
Queue Length 50th (ft)	190	153			111	328		114	173		52	310		
Queue Length 95th (ft)	#375	241			#155	520		183	242		96	417		
Internal Link Dist (ft)		319				1066			414			597		
Turn Bay Length (ft)	100				150			150			150			
Base Capacity (vph)	255	2397			159	2160		194	416		203	406		
Starvation Cap Reductn	0	479			0	0		0	0		0	0		
Spillback Cap Reductn	0	0			0	0		0	0		0	0		
Storage Cap Reductn	0	0			0	0		0	0		0	0		
Reduced v/c Ratio	0.90	0.75			0.73	0.62		0.66	0.49		0.32	0.82		

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 20 (13%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 39.5 Intersection LOS: D
Intersection Capacity Utilization 84.2% ICU Level of Service E
Analysis Period (min) 15

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Washington Avenue & Route 16

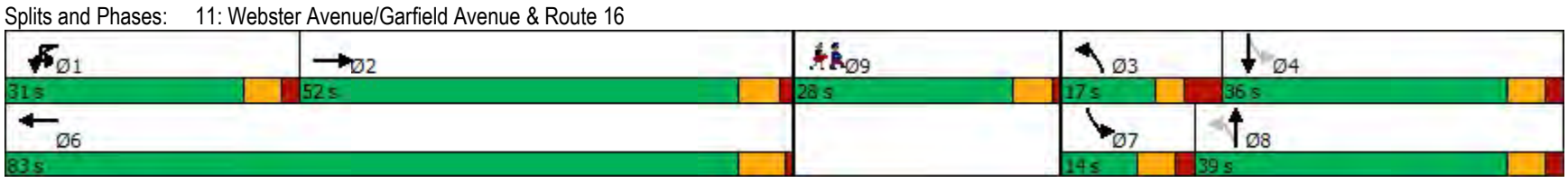
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1225	184	171	128	1172	13	299	209	229	190	170	146	
Future Volume (vph)	0	1225	184	171	128	1172	13	299	209	229	190	170	146	
Satd. Flow (prot)	0	4777	0	0	1652	4737	0	1752	1884	0	1787	1913	0	
Flt Permitted					0.950			*0.700			*0.600			
Satd. Flow (perm)	0	4777	0	0	1646	4737	0	1289	1884	0	1118	1913	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1515	0	0	329	1248	0	336	486	0	209	344	0	
Turn Type		NA		Prot	Prot	NA		pm+pt	NA		pm+pt	NA		
Protected Phases		2		1	1	6		3	8		7	4		9
Permitted Phases								8			4			
Total Split (s)		52.0		31.0	31.0	83.0		17.0	39.0		14.0	36.0		28.0
Total Lost Time (s)		6.0			6.0	6.0		7.0	6.0		6.0	6.0		
Act Effct Green (s)		46.3			25.1	77.5		42.2	33.2		38.2	30.2		
Actuated g/C Ratio		0.32			0.17	0.53		0.29	0.23		0.26	0.21		
v/c Ratio		1.00			1.15	0.49		0.83	1.13		0.63	0.87		
Control Delay		70.9			152.6	23.5		64.3	132.9		53.4	78.0		
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		70.9			152.6	23.5		64.3	132.9		53.4	78.0		
LOS		E			F	C		E	F		D	E		
Approach Delay		70.9				50.4			104.8			68.7		
Approach LOS		E				D			F			E		
Queue Length 50th (ft)		473			~325	228		243	~472		136	291		
Queue Length 95th (ft)		#746			#633	373		#496	#856		255	#559		
Internal Link Dist (ft)		409				879			820			473		
Turn Bay Length (ft)					100			150			100			
Base Capacity (vph)	1522				285	2526		407	431		331	397		
Starvation Cap Reductn	0				0	0		0	0		0	0		
Spillback Cap Reductn	0				0	0		0	0		0	0		
Storage Cap Reductn	0				0	0		0	0		0	0		
Reduced v/c Ratio	1.00				1.15	0.49		0.83	1.13		0.63	0.87		

Intersection Summary

Cycle Length: 164
Actuated Cycle Length: 145.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.15
Intersection Signal Delay: 69.6 Intersection LOS: E
Intersection Capacity Utilization 100.6% ICU Level of Service G
Analysis Period (min) 15
Description: Note: Phase 7 shows minimum green = 20 while maximum green = 12. Also, phases 1,2,6 show Recall = EXT - I used Min

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Webster Avenue/Garfield Avenue & Route 16

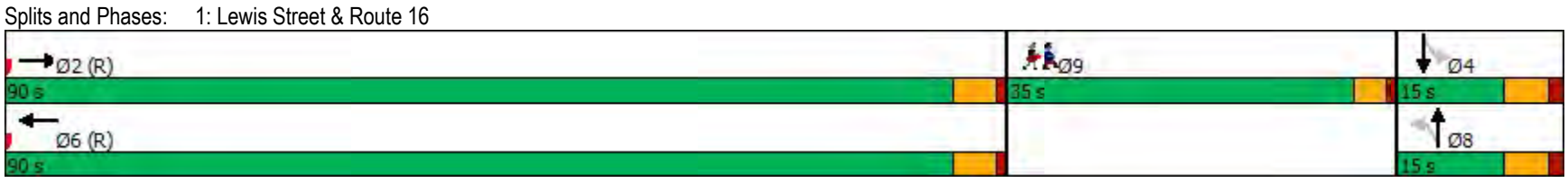


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1958	13	0	1726	6	20	5	9	7	9	16	
Future Volume (vph)	0	1958	13	0	1726	6	20	5	9	7	9	16	
Satd. Flow (prot)	0	2919	0	0	2919	0	0	1636	0	0	1581	0	
Flt Permitted								0.863			0.934		
Satd. Flow (perm)	0	2919	0	0	2919	0	0	1565	0	0	1635	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2054	0	0	2038	0	0	38	0	0	36	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		90.0			90.0		15.0	15.0		15.0	15.0		35.0
Total Lost Time (s)		5.0			5.0			5.5			5.5		
Act Effct Green (s)		115.2			115.2			9.2			9.2		
Actuated g/C Ratio		0.82			0.82			0.07			0.07		
v/c Ratio		0.86			0.85			0.37			0.34		
Control Delay		16.8			17.2			73.1			71.3		
Queue Delay		0.0			0.0			0.0			0.0		
Total Delay		16.8			17.2			73.1			71.3		
LOS		B			B			E			E		
Approach Delay		16.8			17.2			73.1			71.3		
Approach LOS		B			B			E			E		
Queue Length 50th (ft)		247			250			34			32		
Queue Length 95th (ft)		#808			m427			73			70		
Internal Link Dist (ft)		532			675			497			190		
Turn Bay Length (ft)													
Base Capacity (vph)	2402		2402		106		110						
Starvation Cap Reductn	0		0		0		0						
Spillback Cap Reductn	0		0		0		0						
Storage Cap Reductn	0		0		0		0						
Reduced v/c Ratio	0.86		0.85		0.36		0.33						

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 40 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 18.0	Intersection LOS: B
Intersection Capacity Utilization 55.7%	ICU Level of Service B
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Lewis Street & Route 16

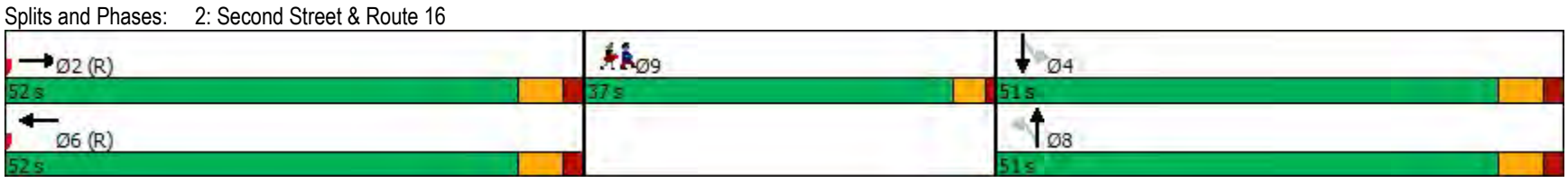


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1605	369	0	1445	77	267	96	13	48	55	20	
Future Volume (vph)	0	1605	369	0	1445	77	267	96	13	48	55	20	
Satd. Flow (prot)	0	4578	0	0	5091	0	0	1516	0	0	1819	0	
Flt Permitted								0.645			0.781		
Satd. Flow (perm)	0	4578	0	0	5091	0	0	1085	0	0	1448	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2123	0	0	1730	0	0	430	0	0	190	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		52.0			52.0		51.0	51.0		51.0	51.0		37.0
Total Lost Time (s)		6.0			6.0			6.0			6.0		
Act Effct Green (s)		74.2			74.2			45.0			45.0		
Actuated g/C Ratio		0.53			0.53			0.32			0.32		
v/c Ratio		0.88			0.64			1.24			0.41		
Control Delay		28.8			20.7			168.7			40.4		
Queue Delay		11.4			0.3			0.0			0.0		
Total Delay		40.2			21.0			168.7			40.4		
LOS		D			C			F			D		
Approach Delay		40.2			21.0			168.7			40.4		
Approach LOS		D			C			F			D		
Queue Length 50th (ft)		477			200			~530			135		
Queue Length 95th (ft)		#864			238			#715			142		
Internal Link Dist (ft)		675			412			757			460		
Turn Bay Length (ft)													
Base Capacity (vph)	2426		2698			348			465				
Starvation Cap Reductn	0		360			0			0				
Spillback Cap Reductn	321		0			0			0				
Storage Cap Reductn	0		0			0			0				
Reduced v/c Ratio	1.01		0.74			1.24			0.41				

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 60 (43%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 45.1	Intersection LOS: D
Intersection Capacity Utilization 76.6%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Second Street & Route 16



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	38	106	1466	56	45	66	1345	39	23	55	67	30	46	117	
Future Volume (vph)	38	106	1466	56	45	66	1345	39	23	55	67	30	46	117	
Satd. Flow (prot)	0	1745	5048	0	0	1724	4938	0	0	1419	0	0	1401	0	
Flt Permitted		0.950				0.950				*0.800			*0.810		
Satd. Flow (perm)	0	1740	5048	0	0	1706	4938	0	0	1261	0	0	1259	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	163	1602	0	0	139	1537	0	0	165	0	0	257	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	19.0	19.0	58.0		19.0	19.0	58.0		30.0	30.0		30.0	30.0		33.0
Total Lost Time (s)		5.0	5.0			5.0	5.0			6.0			6.0		
Act Effct Green (s)		21.7	53.0			21.7	53.0			44.5			44.5		
Actuated g/C Ratio		0.16	0.38			0.16	0.38			0.32			0.32		
v/c Ratio		0.60	0.84			0.52	0.82			0.41			0.64		
Control Delay		79.7	17.9			65.8	20.3			43.8			51.2		
Queue Delay		0.0	3.9			0.0	0.2			0.0			0.0		
Total Delay		79.7	21.8			65.8	20.5			43.8			51.2		
LOS		E	C			E	C			D			D		
Approach Delay			27.1				24.3			43.8			51.2		
Approach LOS			C				C			D			D		
Queue Length 50th (ft)		106	488			127	168			132			224		
Queue Length 95th (ft)		m#198	197			#190	415			230			297		
Internal Link Dist (ft)			412				550			363			385		
Turn Bay Length (ft)	150				225										
Base Capacity (vph)	270	1911			266	1869			401			400			
Starvation Cap Reductn	0	232			0	36			0			0			
Spillback Cap Reductn	0	0			0	0			0			0			
Storage Cap Reductn	0	0			0	0			0			0			
Reduced v/c Ratio	0.60	0.95			0.52	0.84			0.41			0.64			

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 60 (43%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 28.2 — Intersection LOS: C
Intersection Capacity Utilization 64.7% — ICU Level of Service C
Analysis Period (min) 15

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

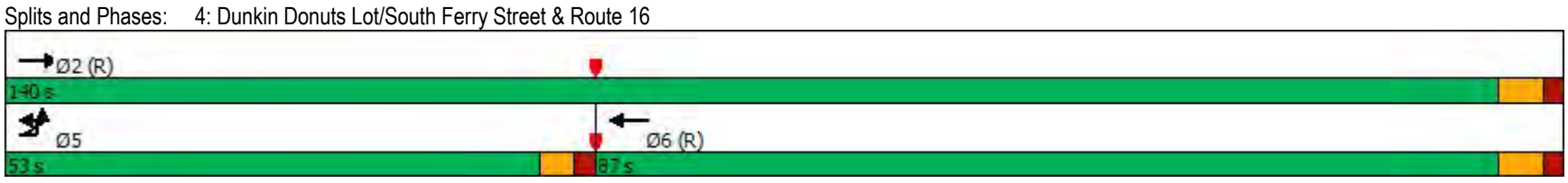
Splits and Phases: 3: Spring Street & Route 16

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	13	277	1318	0	0	1455	73	0	0	20	0	0	0
Future Volume (vph)	13	277	1318	0	0	1455	73	0	0	20	0	0	0
Satd. Flow (prot)	0	1728	3612	0	0	4328	0	0	0	1589	0	0	0
Flt Permitted		0.950											
Satd. Flow (perm)	0	1726	4515	0	0	4328	0	0	0	1589	0	0	0
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	326	1448	0	0	1643	0	0	0	22	0	0	0
Turn Type	Prot	Prot	NA			NA				Perm			
Protected Phases	5	5	2			6							
Permitted Phases										2			
Total Split (s)	53.0	53.0	140.0			87.0				140.0			
Total Lost Time (s)		5.0	6.0			6.0				6.0			
Act Effct Green (s)		30.6	140.0			98.4				140.0			
Actuated g/C Ratio		0.22	1.00			0.70				1.00			
v/c Ratio		0.86	0.40			0.54				0.01			
Control Delay		46.1	2.1			12.1				0.0			
Queue Delay		0.0	0.0			0.1				0.0			
Total Delay		46.1	2.1			12.2				0.0			
LOS		D	A			B				A			
Approach Delay			10.2			12.2							
Approach LOS			B			B							
Queue Length 50th (ft)		309	30			97				0			
Queue Length 95th (ft)		m381	13			406				0			
Internal Link Dist (ft)			550			503			557			380	
Turn Bay Length (ft)	225												
Base Capacity (vph)	592	3612		3042			1589						
Starvation Cap Reductn	0	0		363			0						
Spillback Cap Reductn	0	0		0			0						
Storage Cap Reductn	0	0		0			0						
Reduced v/c Ratio	0.55	0.40		0.61			0.01						

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 20 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 11.1 — Intersection LOS: B
Intersection Capacity Utilization 55.0% — ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Dunkin Donuts Lot/South Ferry Street & Route 16

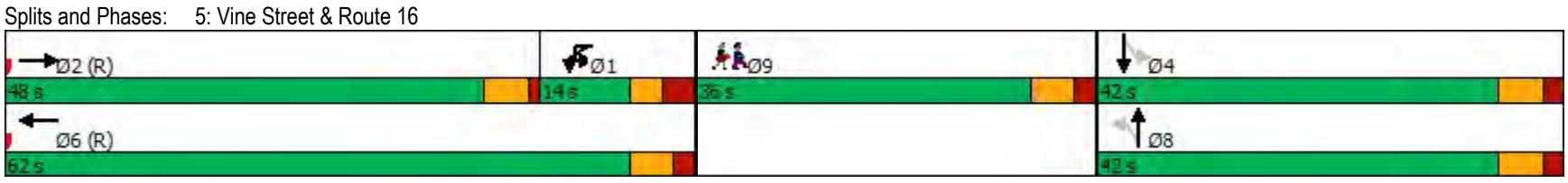


Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1262	76	2	17	1332	73	64	112	42	59	104	132	
Future Volume (vph)	0	1262	76	2	17	1332	73	64	112	42	59	104	132	
Satd. Flow (prot)	0	4462	0	0	1504	4922	0	0	1646	0	0	1597	0	
Flt Permitted					0.900				0.729			0.845		
Satd. Flow (perm)	0	4462	0	0	1491	4922	0	0	1216	0	0	1362	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1486	0	0	27	1527	0	0	294	0	0	329	0	
Turn Type		NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases		2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)		48.0		14.0	14.0	62.0		42.0	42.0		42.0	42.0		36.0
Total Lost Time (s)		5.0			6.0	6.0			6.0			6.0		
Act Effct Green (s)		61.2			8.0	68.6			54.6			54.6		
Actuated g/C Ratio		0.44			0.06	0.49			0.39			0.39		
v/c Ratio		0.76			0.32	0.63			0.62			0.62		
Control Delay		31.0			65.8	22.1			42.8			42.0		
Queue Delay		0.0			0.0	0.2			0.0			0.0		
Total Delay		31.0			65.8	22.3			42.8			42.0		
LOS		C			E	C			D			D		
Approach Delay		31.0				23.0			42.8			42.0		
Approach LOS		C				C			D			D		
Queue Length 50th (ft)		253			27	368			238			267		
Queue Length 95th (ft)		#636			m50	548			289			415		
Internal Link Dist (ft)		503				521			407			333		
Turn Bay Length (ft)					100									
Base Capacity (vph)	1951			85	2412		473		530					
Starvation Cap Reductn	0			0	227		0		0					
Spillback Cap Reductn	0			0	0		0		0					
Storage Cap Reductn	0			0	0		0		0					
Reduced v/c Ratio	0.76			0.32	0.70		0.62		0.62					

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 70 (50%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 29.6 Intersection LOS: C
Intersection Capacity Utilization 57.5% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Vine Street & Route 16



Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR	Ø9
Lane Configurations								
Traffic Volume (vph)	1363	2	20	7	1253	171	0	
Future Volume (vph)	1363	2	20	7	1253	171	0	
Satd. Flow (prot)	4468	0	0	1653	4964	1770	0	
Flt Permitted				0.900		0.950		
Satd. Flow (perm)	4468	0	0	1653	4964	1758	0	
Satd. Flow (RTOR)								
Lane Group Flow (vph)	1452	0	0	43	1408	184	0	
Turn Type	NA		Prot	Prot	NA	Perm		
Protected Phases	2		1	1	6			9
Permitted Phases						8		
Total Split (s)	67.0		16.0	16.0	83.0	31.0		26.0
Total Lost Time (s)	5.0			5.5	5.0	5.0		
Act Effct Green (s)	54.4			45.9	105.8	19.0		
Actuated g/C Ratio	0.39			0.33	0.76	0.14		
v/c Ratio	0.84			0.08	0.38	0.78		
Control Delay	20.5			34.6	5.6	79.2		
Queue Delay	0.2			0.0	0.0	0.0		
Total Delay	20.7			34.6	5.6	79.2		
LOS	C			C	A	E		
Approach Delay	20.7				6.4	79.2		
Approach LOS	C				A	E		
Queue Length 50th (ft)	270			16	9	164		
Queue Length 95th (ft)	39			m51	432	237		
Internal Link Dist (ft)	521				488	647		
Turn Bay Length (ft)				150				
Base Capacity (vph)	1978			542	3752	326		
Starvation Cap Reductn	97			0	0	0		
Spillback Cap Reductn	0			0	172	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.77			0.08	0.39	0.56		

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 70 (50%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 17.5	Intersection LOS: B
Intersection Capacity Utilization 44.2%	ICU Level of Service A
Analysis Period (min) 15	
Description: Note: Splits and offsets need to be optimized via synchro due to lack of coordination data	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: Vale Street & Route 16

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	175	1153	176	56	1095	12	178	145	49	74	168	79	
Future Volume (vph)	175	1153	176	56	1095	12	178	145	49	74	168	79	
Satd. Flow (prot)	1728	4844	0	1711	4951	0	1745	1757	0	1728	1710	0	
Flt Permitted	0.950			0.950			0.452			0.507			
Satd. Flow (perm)	1728	4844	0	1709	4951	0	822	1757	0	917	1710	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	208	1444	0	102	1216	0	205	237	0	96	278	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	26.0	56.0		26.0	56.0		25.0	25.0		25.0	25.0		33.0
Total Lost Time (s)	5.5	5.0		5.5	5.0		6.0	6.0		6.0	6.0		
Act Effct Green (s)	19.1	58.8		12.7	52.4		47.2	47.2		47.2	47.2		
Actuated g/C Ratio	0.14	0.42		0.09	0.37		0.34	0.34		0.34	0.34		
v/c Ratio	0.89	0.71		0.66	0.66		0.74	0.40		0.31	0.48		
Control Delay	68.6	38.1		85.4	41.5		58.9	40.5		41.2	42.2		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	68.6	38.1		85.4	41.5		58.9	40.5		41.2	42.2		
LOS	E	D		F	D		E	D		D	D		
Approach Delay		42.0			44.9			49.0			41.9		
Approach LOS		D			D			D			D		
Queue Length 50th (ft)	165	493		99	275		156	156		61	189		
Queue Length 95th (ft)	#272	554		99	303		#378	265		119	#378		
Internal Link Dist (ft)		406			387			396			538		
Turn Bay Length (ft)	150			100			100			100			
Base Capacity (vph)	253	2034		250	1853		277	592		309	576		
Starvation Cap Reductn	0	0		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.82	0.71		0.41	0.66		0.74	0.40		0.31	0.48		

Intersection Summary

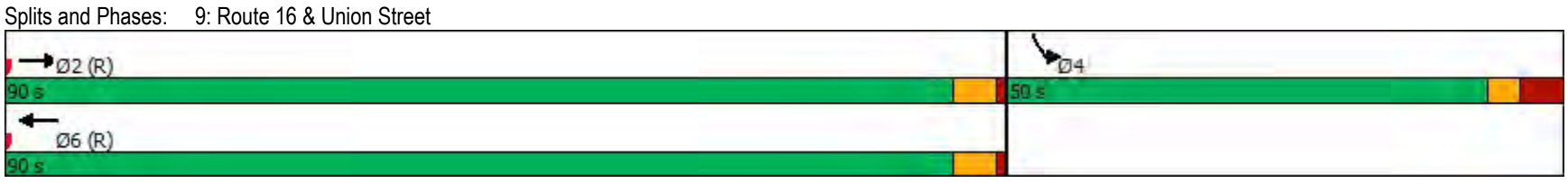
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 43.8 — Intersection LOS: D
Intersection Capacity Utilization 73.8% — ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Everett Avenue & Route 16

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1277	1199	183	153	4
Future Volume (vph)	0	1277	1199	183	153	4
Satd. Flow (prot)	0	4964	4858	0	1790	0
Flt Permitted					0.954	
Satd. Flow (perm)	0	4964	4858	0	1790	0
Satd. Flow (RTOR)						
Lane Group Flow (vph)	0	1316	1486	0	201	0
Turn Type		NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases						
Total Split (s)		90.0	90.0		50.0	
Total Lost Time (s)		5.0	5.0		7.0	
Act Effct Green (s)		107.7	107.7		20.3	
Actuated g/C Ratio		0.77	0.77		0.14	
v/c Ratio		0.34	0.40		0.77	
Control Delay		1.9	2.6		76.6	
Queue Delay		0.0	0.1		0.0	
Total Delay		1.9	2.7		76.6	
LOS		A	A		E	
Approach Delay		1.9	2.7		76.6	
Approach LOS		A	A		E	
Queue Length 50th (ft)		39	52		179	
Queue Length 95th (ft)		31	106		213	
Internal Link Dist (ft)		219	319		460	
Turn Bay Length (ft)						
Base Capacity (vph)	3817	3735	549			
Starvation Cap Reductn	0	592	0			
Spillback Cap Reductn	0	0	0			
Storage Cap Reductn	0	0	0			
Reduced v/c Ratio	0.34	0.47	0.37			

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 7.3	Intersection LOS: A
Intersection Capacity Utilization 46.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: Route 16 & Union Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	205	1077	148	102	1164	36	100	116	44	49	154	118	
Future Volume (vph)	205	1077	148	102	1164	36	100	116	44	49	154	118	
Satd. Flow (prot)	1745	4863	0	1745	4941	0	1752	1772	0	1770	1722	0	
Flt Permitted	0.950			0.950			*0.450			0.436			
Satd. Flow (perm)	1723	4863	0	1745	4941	0	819	1772	0	807	1722	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	223	1361	0	134	1237	0	128	225	0	56	323	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	17.0	68.0		15.0	66.0		30.0	30.0		30.0	30.0		27.0
Total Lost Time (s)	7.0	5.0		6.5	5.0		5.5	5.5		5.5	5.5		
Act Effct Green (s)	19.2	64.9		15.9	61.0		33.1	33.1		33.1	33.1		
Actuated g/C Ratio	0.14	0.46		0.11	0.44		0.24	0.24		0.24	0.24		
v/c Ratio	0.93	0.60		0.68	0.57		0.66	0.54		0.29	0.80		
Control Delay	101.0	21.6		76.7	31.1		67.4	53.5		50.9	66.1		
Queue Delay	0.0	0.7		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	101.0	22.3		76.7	31.1		67.4	53.5		50.9	66.1		
LOS	F	C		E	C		E	D		D	E		
Approach Delay		33.4			35.5			58.5			63.8		
Approach LOS		C			D			E			E		
Queue Length 50th (ft)	200	186		116	306		104	176		41	272		
Queue Length 95th (ft)	#484	298		#232	354		#169	212		87	#419		
Internal Link Dist (ft)		319			1066			414			597		
Turn Bay Length (ft)	100			150			150			150			
Base Capacity (vph)	239	2253		197	2152		193	418		190	406		
Starvation Cap Reductn	0	509		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.93	0.78		0.68	0.57		0.66	0.54		0.29	0.80		

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 39.7 — Intersection LOS: D
Intersection Capacity Utilization 79.7% — ICU Level of Service D
Analysis Period (min) 15

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Washington Avenue & Route 16

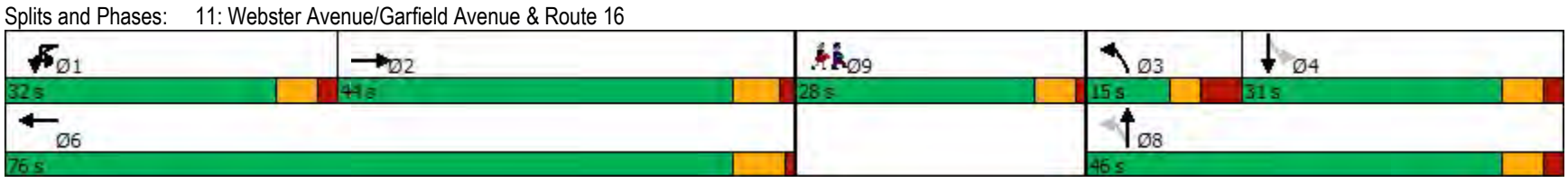
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1120	145	177	132	1169	23	250	216	185	175	159	170	
Future Volume (vph)	0	1120	145	177	132	1169	23	250	216	185	175	159	170	
Satd. Flow (prot)	0	4886	0	0	1685	4778	0	1787	1902	0	1787	1891	0	
Flt Permitted					0.950			*0.700			*0.700			
Satd. Flow (perm)	0	4886	0	0	1678	4778	0	1313	1902	0	1299	1891	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1291	0	0	344	1282	0	272	446	0	199	374	0	
Turn Type		NA		Prot	Prot	NA		pm+pt	NA		Perm	NA		
Protected Phases		2		1	1	6		3	8			4		9
Permitted Phases								8			4			
Total Split (s)		44.0		32.0	32.0	76.0		15.0	46.0		31.0	31.0		28.0
Total Lost Time (s)		6.0			6.0	6.0		7.0	6.0		6.0	6.0		
Act Effct Green (s)		38.2			26.1	70.3		39.2	40.2		25.1	25.1		
Actuated g/C Ratio		0.30			0.21	0.56		0.31	0.32		0.20	0.20		
v/c Ratio		0.88			0.99	0.48		0.62	0.74		0.77	1.00		
Control Delay		50.1			96.0	18.7		45.2	48.1		69.5	96.8		
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		50.1			96.0	18.7		45.2	48.1		69.5	96.8		
LOS		D			F	B		D	D		E	F		
Approach Delay		50.1				35.1			47.0			87.3		
Approach LOS		D				D			D			F		
Queue Length 50th (ft)		348			270	205		172	308		149	295		
Queue Length 95th (ft)		#564			#578	354		320	#577		#323	#599		
Internal Link Dist (ft)		409				879			820			473		
Turn Bay Length (ft)					100			150			100			
Base Capacity (vph)	1473				348	2654		436	603		257	375		
Starvation Cap Reductn	0				0	0		0	0		0	0		
Spillback Cap Reductn	0				0	0		0	0		0	0		
Storage Cap Reductn	0				0	0		0	0		0	0		
Reduced v/c Ratio	0.88				0.99	0.48		0.62	0.74		0.77	1.00		

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 126.6
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 48.9 Intersection LOS: D
Intersection Capacity Utilization 95.7% ICU Level of Service F
Analysis Period (min) 15
Description: Note: Phase 7 shows minimum green = 20 while maximum green = 12. Also, phases 1,2,6 show Recall = EXT - I used Min

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Webster Avenue/Garfield Avenue & Route 16



Arterial Level of Service: EB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Lewis Street	III	35	15.6	79.2	94.8	0.12	4.4	F
Second Street	III	35	18.3	52.3	70.6	0.14	7.3	F
Spring Street	III	35	12.6	27.4	40.0	0.09	8.4	F
Dunkin Donuts Lot	III	35	16.1	1.5	17.6	0.12	24.4	B
Vine Street	III	35	14.9	72.1	87.0	0.11	4.6	F
Vale Street	III	35	15.4	1.6	17.0	0.11	24.1	B
Everett Avenue	III	35	24.0	20.1	44.1	0.20	16.3	D
Union Street	III	35	32.0	0.6	32.6	0.27	29.4	B
Washington Avenue	III	35	10.2	21.7	31.9	0.08	8.5	F
Webster Avenue	III	35	37.2	57.1	94.3	0.31	11.8	E
Total	III		196.3	333.6	529.9	1.55	10.5	E

Arterial Level of Service: WB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Garfield Avenue	III	35	21.8	26.9	48.7	0.18	13.4	E
Washington Avenue	III	35	37.2	43.1	80.3	0.31	13.9	E
Union Street	III	35	10.2	1.9	12.1	0.08	22.5	C
Everett Avenue	III	35	32.0	71.5	103.5	0.27	9.3	F
Vale Street	III	35	24.0	10.8	34.8	0.20	20.7	C
Vine Street	III	35	15.4	51.8	67.2	0.11	6.1	F
South Ferry Street	III	35	14.9	18.4	33.3	0.11	11.9	E
Spring Street	III	35	16.1	34.8	50.9	0.12	8.4	F
Second Street	III	35	12.6	68.5	81.1	0.09	4.1	F
Lewis Street	III	35	18.3	54.9	73.2	0.14	7.0	F
Total	III		202.5	382.6	585.1	1.61	9.9	F

Arterial Level of Service: EB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Lewis Street	III	35	15.6	83.9	99.5	0.12	4.2	F
Second Street	III	35	18.3	170.7	189.0	0.14	2.7	F
Spring Street	III	35	12.6	6.7	19.3	0.09	17.4	D
Dunkin Donuts Lot	III	35	16.1	4.1	20.2	0.12	21.3	C
Vine Street	III	35	14.9	70.8	85.7	0.11	4.6	F
Vale Street	III	35	15.4	22.3	37.7	0.11	10.9	E
Everett Avenue	III	35	24.0	64.4	88.4	0.20	8.1	F
Union Street	III	35	32.0	14.3	46.3	0.27	20.7	C
Washington Avenue	III	35	10.2	48.8	59.0	0.08	4.6	F
Webster Avenue	III	35	37.2	86.0	123.2	0.31	9.0	F
Total	III		196.3	572.0	768.3	1.55	7.2	F

Arterial Level of Service: WB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Garfield Avenue	III	35	21.8	26.1	47.9	0.18	13.7	E
Washington Avenue	III	35	37.2	51.2	88.4	0.31	12.6	E
Union Street	III	35	10.2	8.3	18.5	0.08	14.7	D
Everett Avenue	III	35	32.0	56.3	88.3	0.27	10.9	E
Vale Street	III	35	24.0	8.2	32.2	0.20	22.3	C
Vine Street	III	35	15.4	25.0	40.4	0.11	10.1	E
South Ferry Street	III	35	14.9	28.0	42.9	0.11	9.3	F
Spring Street	III	35	16.1	52.7	68.8	0.12	6.2	F
Second Street	III	35	12.6	35.2	47.8	0.09	7.0	F
Lewis Street	III	35	18.3	28.5	46.8	0.14	11.0	E
Total	III		202.5	319.5	522.0	1.61	11.1	E

Arterial Level of Service: EB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Lewis Street	III	35	15.6	23.0	38.6	0.12	10.8	E
Second Street	III	35	18.3	73.9	92.2	0.14	5.6	F
Spring Street	III	35	12.6	6.9	19.5	0.09	17.2	D
Dunkin Donuts Lot	III	35	16.1	2.6	18.7	0.12	23.0	C
Vine Street	III	35	14.9	55.9	70.8	0.11	5.6	F
Vale Street	III	35	15.4	9.5	24.9	0.11	16.5	D
Everett Avenue	III	35	24.0	38.6	62.6	0.20	11.5	E
Union Street	III	35	32.0	2.1	34.1	0.27	28.1	B
Washington Avenue	III	35	10.2	16.9	27.1	0.08	10.0	E
Webster Avenue	III	35	37.2	70.9	108.1	0.31	10.3	E
Total	III		196.3	300.3	496.6	1.55	11.2	E

Arterial Level of Service: WB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Garfield Avenue	III	35	21.8	23.5	45.3	0.18	14.4	D
Washington Avenue	III	35	37.2	36.7	73.9	0.31	15.1	D
Union Street	III	35	10.2	0.9	11.1	0.08	24.5	B
Everett Avenue	III	35	32.0	45.0	77.0	0.27	12.5	E
Vale Street	III	32	25.4	12.9	38.3	0.20	18.8	C
Vine Street	III	35	15.4	25.9	41.3	0.11	9.9	F
South Ferry Street	III	35	14.9	12.6	27.5	0.11	14.5	D
Spring Street	III	35	16.1	28.9	45.0	0.12	9.5	F
Second Street	III	35	12.6	20.7	33.3	0.09	10.1	E
Lewis Street	III	35	18.3	26.5	44.8	0.14	11.5	E
Total	III		203.9	233.6	437.5	1.61	13.3	E

Arterial Level of Service: EB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Lewis Street	III	35	15.6	16.8	32.4	0.12	12.9	E
Second Street	III	35	18.3	28.8	47.1	0.14	10.9	E
Spring Street	III	35	12.6	17.9	30.5	0.09	11.0	E
Dunkin Donuts Lot	III	35	16.1	2.1	18.2	0.12	23.6	C
Vine Street	III	35	14.9	31.0	45.9	0.11	8.7	F
Vale Street	III	35	15.4	20.5	35.9	0.11	11.4	E
Everett Avenue	III	35	24.0	38.1	62.1	0.20	11.6	E
Union Street	III	35	32.0	1.9	33.9	0.27	28.3	B
Washington Avenue	III	35	10.2	21.6	31.8	0.08	8.6	F
Webster Avenue	III	35	37.2	50.1	87.3	0.31	12.8	E
Total	III		196.3	228.8	425.1	1.55	13.1	E

Arterial Level of Service: WB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Garfield Avenue	III	35	21.8	18.7	40.5	0.18	16.1	D
Washington Avenue	III	35	37.2	31.1	68.3	0.31	16.3	D
Union Street	III	35	10.2	2.6	12.8	0.08	21.3	C
Everett Avenue	III	35	32.0	41.5	73.5	0.27	13.1	E
Vale Street	III	32	25.4	5.6	31.0	0.20	23.2	C
Vine Street	III	35	15.4	22.1	37.5	0.11	10.9	E
South Ferry Street	III	35	14.9	12.1	27.0	0.11	14.7	D
Spring Street	III	35	16.1	20.3	36.4	0.12	11.8	E
Second Street	III	35	12.6	20.7	33.3	0.09	10.1	E
Lewis Street	III	35	18.3	17.2	35.5	0.14	14.5	D
Total	III		203.9	191.9	395.8	1.61	14.7	D

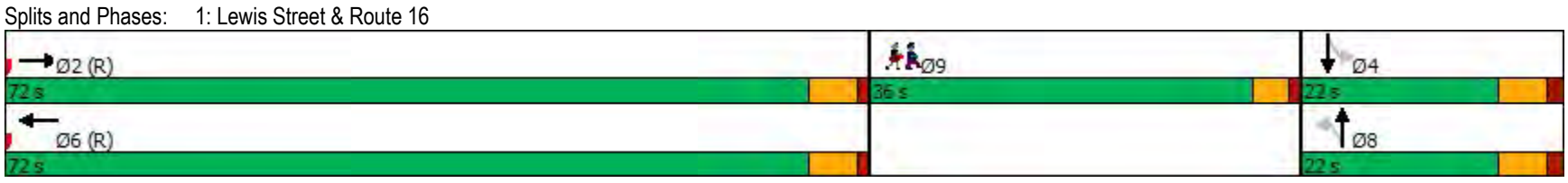
Part 3: Future Intersection Levels of Service

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1584	8	0	2047	6	23	10	12	19	18	36	
Future Volume (vph)	0	1584	8	0	2047	6	23	10	12	19	18	36	
Satd. Flow (prot)	0	2274	0	0	3071	0	0	1709	0	0	1693	0	
Flt Permitted								0.763			0.912		
Satd. Flow (perm)	0	2274	0	0	3071	0	0	1323	0	0	1564	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	1729	0	0	2254	0	0	55	0	0	98	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		72.0			72.0		22.0	22.0		22.0	22.0		36.0
Total Lost Time (s)		5.0			5.0			5.5			5.5		
Act Effct Green (s)		99.7			99.7			15.4			15.4		
Actuated g/C Ratio		0.77			0.77			0.12			0.12		
v/c Ratio		0.99			0.96			0.35			0.53		
Control Delay		35.9			26.0			57.7			63.6		
Queue Delay		0.0			0.0			0.0			0.0		
Total Delay		35.9			26.0			57.7			63.6		
LOS		D			C			E			E		
Approach Delay		35.9			26.0			57.7			63.6		
Approach LOS		D			C			E			E		
Queue Length 50th (ft)		366			430			43			79		
Queue Length 95th (ft)		#774			#956			76			109		
Internal Link Dist (ft)		532			675			497			190		
Turn Bay Length (ft)													
Base Capacity (vph)	1744		2356		178		211						
Starvation Cap Reductn	0		0		0		0						
Spillback Cap Reductn	0		0		0		0						
Storage Cap Reductn	0		0		0		0						
Reduced v/c Ratio	0.99		0.96		0.31		0.46						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 69 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 31.5 Intersection LOS: C
Intersection Capacity Utilization 57.7% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

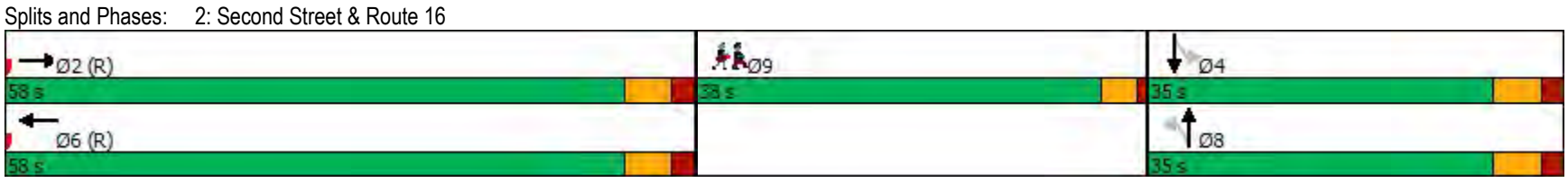
Splits and Phases: 1: Lewis Street & Route 16



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1187	428	0	1790	92	178	37	3	28	56	73	
Future Volume (vph)	0	1187	428	0	1790	92	178	37	3	28	56	73	
Satd. Flow (prot)	0	4275	0	0	4997	0	1203	840	0	0	1718	0	
Flt Permitted							0.585	0.669			0.940		
Satd. Flow (perm)	0	4275	0	0	4997	0	740	702	0	0	1626	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	1717	0	0	2160	0	140	147	0	0	201	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		58.0			58.0		35.0	35.0		35.0	35.0		38.0
Total Lost Time (s)		6.0			6.0		6.0	6.0			6.0		
Act Effct Green (s)		64.7			64.7		49.9	49.9			49.9		
Actuated g/C Ratio		0.49			0.49		0.38	0.38			0.38		
v/c Ratio		0.81			0.88		0.50	0.55			0.32		
Control Delay		32.3			34.7		40.1	42.9			31.7		
Queue Delay		0.0			46.5		0.0	0.0			0.0		
Total Delay		32.3			81.2		40.1	42.9			31.7		
LOS		C			F		D	D			C		
Approach Delay		32.3			81.2			41.6			31.7		
Approach LOS		C			F			D			C		
Queue Length 50th (ft)		396			526		115	123			122		
Queue Length 95th (ft)		#658			#815		178	211			156		
Internal Link Dist (ft)		675			412			757			460		
Turn Bay Length (ft)							500						
Base Capacity (vph)	2111		2468				281	267			619		
Starvation Cap Reductn	0		633				0	0			0		
Spillback Cap Reductn	0		0				0	0			0		
Storage Cap Reductn	0		0				0	0			0		
Reduced v/c Ratio	0.81		1.18				0.50	0.55			0.32		

Intersection Summary	
Cycle Length: 131	
Actuated Cycle Length: 131	
Offset: 80 (61%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 57.1	Intersection LOS: E
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 2: Second Street & Route 16

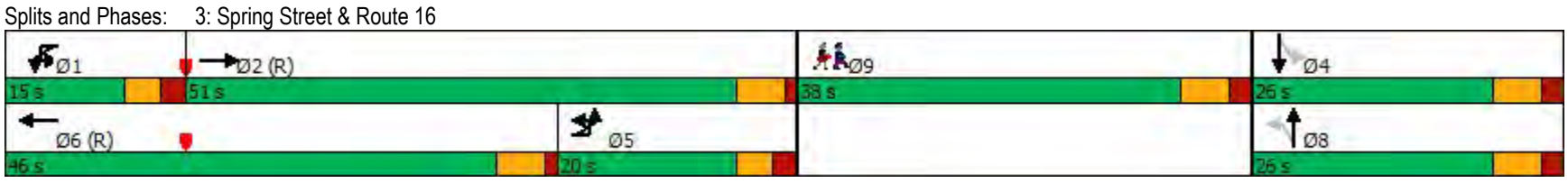


Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	10	55	1139	8	19	13	1675	23	34	18	29	37	42	163	
Future Volume (vph)	10	55	1139	8	19	13	1675	23	34	18	29	37	42	163	
Satd. Flow (prot)	0	1405	4844	0	0	1347	4856	0	0	1316	0	0	1371	0	
Flt Permitted		0.950				0.950				0.748			0.937		
Satd. Flow (perm)	0	1404	4844	0	0	1342	4856	0	0	1093	0	0	1428	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	79	1396	0	0	37	1972	0	0	100	0	0	247	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	20.0	20.0	51.0		15.0	15.0	46.0		26.0	26.0		26.0	26.0		38.0
Total Lost Time (s)		5.0	5.0			5.0	5.0			6.0			6.0		
Act Effct Green (s)		13.6	67.9			8.5	60.2			38.0			38.0		
Actuated g/C Ratio		0.10	0.52			0.07	0.46			0.29			0.29		
v/c Ratio		0.54	0.55			0.42	0.88			0.31			0.59		
Control Delay		68.5	24.0			71.3	25.4			40.3			47.2		
Queue Delay		0.0	0.6			0.0	0.0			0.0			0.0		
Total Delay		68.5	24.6			71.3	25.4			40.3			47.2		
LOS		E	C			E	C			D			D		
Approach Delay			27.0				26.3			40.3			47.2		
Approach LOS			C				C			D			D		
Queue Length 50th (ft)		69	273			35	324			74			201		
Queue Length 95th (ft)		118	401			m50	#818			122			315		
Internal Link Dist (ft)			412				550			363			385		
Turn Bay Length (ft)	150				225										
Base Capacity (vph)	162	2530			103	2249			319			417			
Starvation Cap Reductn	0	675			0	0			0			0			
Spillback Cap Reductn	0	0			0	0			0			0			
Storage Cap Reductn	0	0			0	0			0			0			
Reduced v/c Ratio	0.49	0.75			0.36	0.88			0.31			0.59			

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 82 (63%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 28.3 Intersection LOS: C
Intersection Capacity Utilization 68.4% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

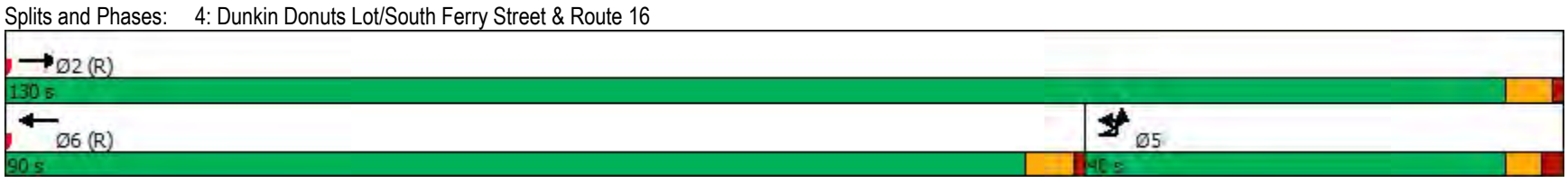
Splits and Phases: 3: Spring Street & Route 16



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	15	126	977	0	0	1591	128	0	0	92	0	0	0
Future Volume (vph)	15	126	977	0	0	1591	128	0	0	92	0	0	0
Satd. Flow (prot)	0	1121	3409	0	0	3415	0	0	0	1406	0	0	0
Flt Permitted		0.800											
Satd. Flow (perm)	0	1120	4262	0	0	3415	0	0	0	1406	0	0	0
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	168	1161	0	0	1827	0	0	0	186	0	0	0
Turn Type	Prot	Prot	NA			NA				Perm			
Protected Phases	5	5	2			6							
Permitted Phases										2			
Total Split (s)	40.0	40.0	130.0			90.0				130.0			
Total Lost Time (s)		5.0	5.0			5.0				5.0			
Act Effct Green (s)		25.0	130.0			95.0				130.0			
Actuated g/C Ratio		0.19	1.00			0.73				1.00			
v/c Ratio		0.78	0.34			0.73				0.13			
Control Delay		47.5	1.4			17.6				0.2			
Queue Delay		0.0	0.0			0.0				0.0			
Total Delay		47.5	1.4			17.6				0.2			
LOS		D	A			B				A			
Approach Delay			7.3			17.6			0.2				
Approach LOS			A			B			A				
Queue Length 50th (ft)		173	22			234				0			
Queue Length 95th (ft)		108	0			458				0			
Internal Link Dist (ft)			550			503			557			380	
Turn Bay Length (ft)	225												
Base Capacity (vph)	301	3409		2495			1406						
Starvation Cap Reductn	0	0		0			0						
Spillback Cap Reductn	0	0		0			0						
Storage Cap Reductn	0	0		0			0						
Reduced v/c Ratio	0.56	0.34		0.73			0.13						

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 15 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 12.5	Intersection LOS: B
Intersection Capacity Utilization 50.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Dunkin Donuts Lot/South Ferry Street & Route 16

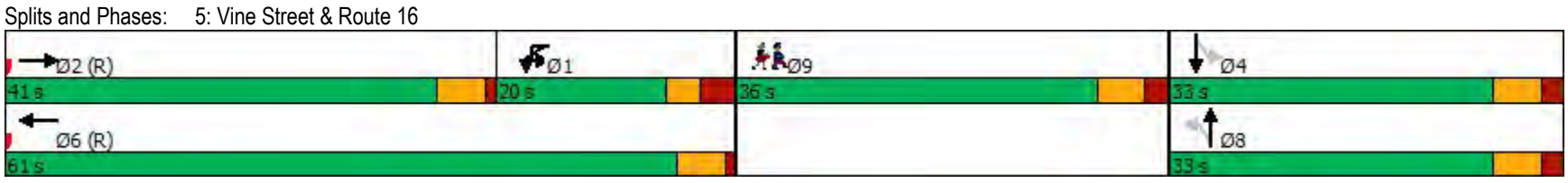


Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	970	99	1	38	1486	22	52	53	28	41	170	181	
Future Volume (vph)	0	970	99	1	38	1486	22	52	53	28	41	170	181	
Satd. Flow (prot)	0	4557	0	0	1373	4853	0	0	1208	0	0	1224	0	
Flt Permitted					0.950				0.572			0.940		
Satd. Flow (perm)	0	4557	0	0	1351	4853	0	0	767	0	0	1277	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1136	0	0	41	1603	0	0	181	0	0	521	0	
Turn Type		NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases		2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)		41.0		20.0	20.0	61.0		33.0	33.0		33.0	33.0		36.0
Total Lost Time (s)		5.0			6.0	5.0			6.0			6.0		
Act Effct Green (s)		40.0			12.8	56.0			58.2			58.2		
Actuated g/C Ratio		0.31			0.10	0.43			0.45			0.45		
v/c Ratio		0.81			0.31	0.77			0.53			0.91		
Control Delay		63.6			50.3	28.9			35.7			55.8		
Queue Delay		0.0			0.0	0.2			0.0			0.0		
Total Delay		63.6			50.3	29.1			35.7			55.8		
LOS		E			D	C			D			E		
Approach Delay		63.6				29.7			35.7			55.8		
Approach LOS		E				C			D			E		
Queue Length 50th (ft)		368			35	428			125			466		
Queue Length 95th (ft)		#429			m64	190			227			#776		
Internal Link Dist (ft)		503				521			407			333		
Turn Bay Length (ft)					100									
Base Capacity (vph)	1401				147	2090			343			571		
Starvation Cap Reductn	0				0	81			0			0		
Spillback Cap Reductn	0				0	0			0			0		
Storage Cap Reductn	0				0	0			0			0		
Reduced v/c Ratio	0.81				0.28	0.80			0.53			0.91		

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 47 (36%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 45.0	Intersection LOS: D
Intersection Capacity Utilization 65.7%	ICU Level of Service C
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

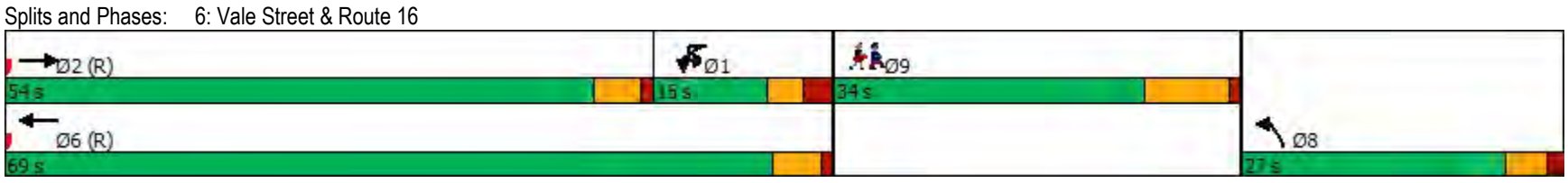
Splits and Phases: 5: Vine Street & Route 16



Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR	Ø9
Lane Configurations								
Traffic Volume (vph)	921	134	3	5	1425	117	2	
Future Volume (vph)	921	134	3	5	1425	117	2	
Satd. Flow (prot)	4178	0	0	1504	4868	1720	0	
Flt Permitted				0.900		0.953		
Satd. Flow (perm)	4178	0	0	1486	4868	1711	0	
Satd. Flow (RTOR)								
Lane Group Flow (vph)	1171	0	0	9	1582	153	0	
Turn Type	NA		Prot	Prot	NA	Prot		
Protected Phases	2		1	1	6	8		9
Permitted Phases								
Total Split (s)	54.0		15.0	15.0	69.0	27.0		34.0
Total Lost Time (s)	5.0			5.5	5.0	5.0		
Act Effct Green (s)	95.9			6.7	98.9	15.9		
Actuated g/C Ratio	0.74			0.05	0.76	0.12		
v/c Ratio	0.38			0.12	0.43	0.73		
Control Delay	1.7			61.2	7.9	74.1		
Queue Delay	0.0			0.0	0.3	0.0		
Total Delay	1.7			61.2	8.2	74.1		
LOS	A			E	A	E		
Approach Delay	1.7				8.5	74.1		
Approach LOS	A				A	E		
Queue Length 50th (ft)	16			7	118	126		
Queue Length 95th (ft)	m43			28	356	165		
Internal Link Dist (ft)	521				488	647		
Turn Bay Length (ft)				150				
Base Capacity (vph)	3082			109	3704	291		
Starvation Cap Reductn	0			0	1273	0		
Spillback Cap Reductn	0			0	0	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.38			0.08	0.65	0.53		

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 62 (48%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 9.2	Intersection LOS: A
Intersection Capacity Utilization 42.8%	ICU Level of Service A
Analysis Period (min) 15	
Description: Note: Splits and offsets need to be optimized via synchro due to lack of coordination data	
m Volume for 95th percentile queue is metered by upstream signal.	

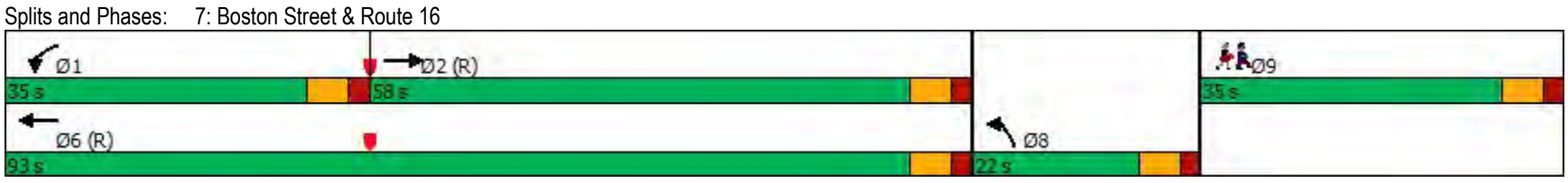
Splits and Phases: 6: Vale Street & Route 16



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø9
Lane Configurations							
Traffic Volume (vph)	911	15	141	1433	1	42	
Future Volume (vph)	911	15	141	1433	1	42	
Satd. Flow (prot)	4586	0	1544	4821	1310	0	
Flt Permitted			0.950		0.999		
Satd. Flow (perm)	4586	0	1538	4821	1310	0	
Satd. Flow (RTOR)							
Lane Group Flow (vph)	1051	0	155	1540	58	0	
Turn Type	NA		Prot	NA	Prot		
Protected Phases	2		1	6	8		9
Permitted Phases							
Total Split (s)	58.0		35.0	93.0	22.0		35.0
Total Lost Time (s)	6.0		6.0	6.0	6.0		
Act Effct Green (s)	92.7		22.0	121.9	13.2		
Actuated g/C Ratio	0.62		0.15	0.81	0.09		
v/c Ratio	0.37		0.69	0.39	0.50		
Control Delay	19.1		75.6	7.2	79.6		
Queue Delay	0.0		0.0	0.4	0.0		
Total Delay	19.1		75.6	7.6	79.6		
LOS	B		E	A	E		
Approach Delay	19.1			13.8	79.6		
Approach LOS	B			B	E		
Queue Length 50th (ft)	166		146	114	55		
Queue Length 95th (ft)	366		216	370	85		
Internal Link Dist (ft)	488			406	880		
Turn Bay Length (ft)			150				
Base Capacity (vph)	2833		298	3917	139		
Starvation Cap Reductn	0		0	1632	0		
Spillback Cap Reductn	0		0	0	0		
Storage Cap Reductn	0		0	0	0		
Reduced v/c Ratio	0.37		0.52	0.67	0.42		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 17.1	Intersection LOS: B
Intersection Capacity Utilization 47.7%	ICU Level of Service A
Analysis Period (min) 15	

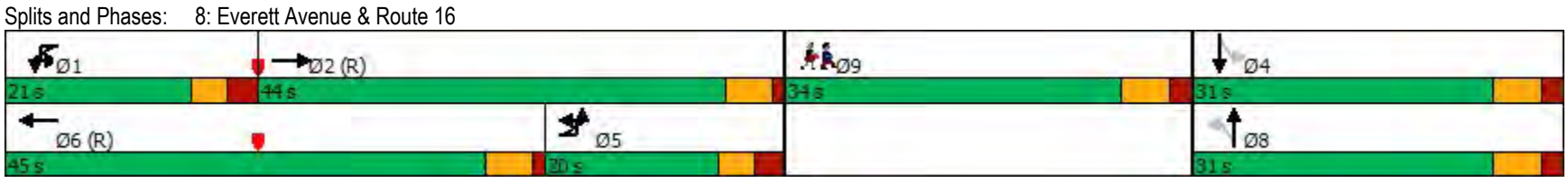
Splits and Phases: 7: Boston Street & Route 16



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	10	63	745	146	2	74	1387	8	126	76	34	71	221	51	
Future Volume (vph)	10	63	745	146	2	74	1387	8	126	76	34	71	221	51	
Satd. Flow (prot)	0	1679	4455	0	0	1634	4808	0	1711	1605	0	1678	1561	0	
Flt Permitted		0.950				0.950			0.419			0.664			
Satd. Flow (perm)	0	1674	4455	0	0	1616	4808	0	751	1605	0	1167	1561	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	98	1058	0	0	108	1467	0	159	139	0	105	357	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	20.0	20.0	44.0		21.0	21.0	45.0		31.0	31.0		31.0	31.0		34.0
Total Lost Time (s)		5.5	5.0			5.5	5.0		6.0	6.0		6.0	6.0		
Act Effct Green (s)		14.5	39.4			15.1	40.0		54.2	54.2		54.2	54.2		
Actuated g/C Ratio		0.11	0.30			0.12	0.31		0.42	0.42		0.42	0.42		
v/c Ratio		0.52	0.78			0.57	0.99		0.51	0.21		0.22	0.55		
Control Delay		65.4	46.4			44.2	48.4		38.0	27.9		28.7	34.7		
Queue Delay		0.0	0.1			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		65.4	46.5			44.2	48.4		38.0	27.9		28.7	34.7		
LOS		E	D			D	D		D	C		C	C		
Approach Delay			48.1				48.1			33.3			33.4		
Approach LOS			D				D			C			C		
Queue Length 50th (ft)		79	298			74	463		91	69		52	209		
Queue Length 95th (ft)		114	331			98	#581		#212	141		97	352		
Internal Link Dist (ft)			406				387			396			538		
Turn Bay Length (ft)	150				100				100			100			
Base Capacity (vph)	187	1348			194	1479			312	669		486	650		
Starvation Cap Reductn	0	13			0	0			0	0		0	0		
Spillback Cap Reductn	0	0			0	0			0	0		0	0		
Storage Cap Reductn	0	0			0	0			0	0		0	0		
Reduced v/c Ratio	0.52	0.79			0.56	0.99			0.51	0.21		0.22	0.55		

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 63 (48%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 44.9	Intersection LOS: D
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

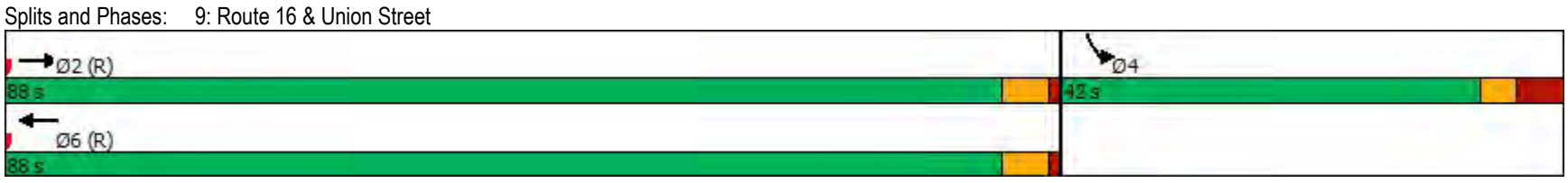
Splits and Phases: 8: Everett Avenue & Route 16



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	852	1487	182	175	12
Future Volume (vph)	0	852	1487	182	175	12
Satd. Flow (prot)	0	4600	4703	0	1763	0
Flt Permitted					0.955	
Satd. Flow (perm)	0	4600	4703	0	1763	0
Satd. Flow (RTOR)						
Lane Group Flow (vph)	0	989	1738	0	207	0
Turn Type		NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases						
Total Split (s)		88.0	88.0		42.0	
Total Lost Time (s)		5.0	5.0		7.0	
Act Effct Green (s)		98.3	98.3		19.7	
Actuated g/C Ratio		0.76	0.76		0.15	
v/c Ratio		0.28	0.49		0.78	
Control Delay		3.3	2.2		71.7	
Queue Delay		0.0	0.2		0.0	
Total Delay		3.4	2.5		71.7	
LOS		A	A		E	
Approach Delay		3.4	2.5		71.7	
Approach LOS		A	A		E	
Queue Length 50th (ft)		0	25		170	
Queue Length 95th (ft)		190	93		243	
Internal Link Dist (ft)		219	319		460	
Turn Bay Length (ft)						
Base Capacity (vph)		3476	3554		474	
Starvation Cap Reductn		0	896		0	
Spillback Cap Reductn		365	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.32	0.65		0.44	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 111 (85%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 7.7	Intersection LOS: A
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: Route 16 & Union Street

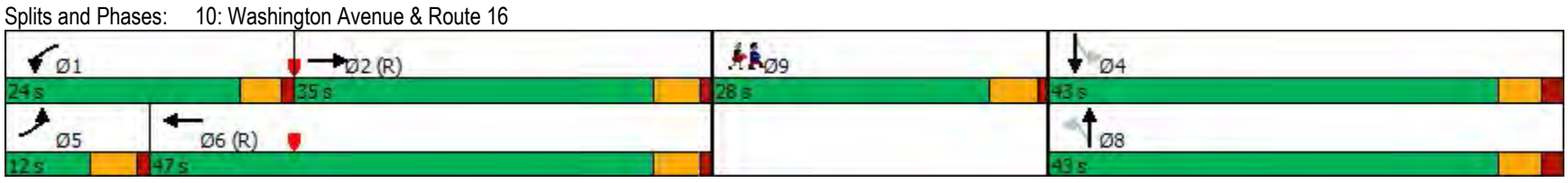


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	80	769	178	179	1429	33	136	89	19	57	190	104	
Future Volume (vph)	80	769	178	179	1429	33	136	89	19	57	190	104	
Satd. Flow (prot)	1694	4510	0	1662	4742	0	1719	1660	0	1736	1651	0	
Flt Permitted	0.950			0.950			0.393			0.656			
Satd. Flow (perm)	1685	4510	0	1662	4742	0	703	1660	0	1173	1651	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	99	1052	0	220	1554	0	168	133	0	76	339	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	12.0	35.0		24.0	47.0		43.0	43.0		43.0	43.0		28.0
Total Lost Time (s)	5.0	5.0		4.5	5.0		5.5	5.5		5.5	5.5		
Act Effct Green (s)	13.4	42.2		21.3	49.6		46.9	46.9		46.9	46.9		
Actuated g/C Ratio	0.10	0.32		0.16	0.38		0.36	0.36		0.36	0.36		
v/c Ratio	0.57	0.72		0.81	0.86		0.66	0.22		0.18	0.57		
Control Delay	91.9	28.0		74.6	43.3		49.7	30.4		30.2	38.2		
Queue Delay	0.0	0.7		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	91.9	28.7		74.6	43.3		49.7	30.4		30.2	38.2		
LOS	F	C		E	D		D	C		C	D		
Approach Delay		34.2			47.2			41.2			36.7		
Approach LOS		C			D			D			D		
Queue Length 50th (ft)	86	319		177	433		114	75		42	221		
Queue Length 95th (ft)	#185	#449		#281	#602		#216	127		75	348		
Internal Link Dist (ft)		319			1066			414			597		
Turn Bay Length (ft)	100			150			150			150			
Base Capacity (vph)	173	1463		281	1809		253	598		423	595		
Starvation Cap Reductn	0	156		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.57	0.80		0.78	0.86		0.66	0.22		0.18	0.57		

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 41.4 — Intersection LOS: D
Intersection Capacity Utilization 78.5% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Washington Avenue & Route 16



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	748	113	203	1752	1	218	122	168	214	167	233	
Future Volume (vph)	0	748	113	203	1752	1	218	122	168	214	167	233	
Satd. Flow (prot)	0	4567	0	1668	4700	0	1641	1808	0	1770	1856	0	
Flt Permitted				0.950			*0.500			*0.600			
Satd. Flow (perm)	0	4567	0	1668	4700	0	863	1808	0	1112	1856	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	989	0	250	1904	0	260	371	0	264	483	0	
Turn Type		NA		Prot	NA		pm+pt	NA		Perm	NA		
Protected Phases		2		1	6		3	8			4		9
Permitted Phases							8			4			
Total Split (s)		36.0		30.0	66.0		15.0	57.0		42.0	42.0		28.0
Total Lost Time (s)		6.0		6.0	6.0		7.0	7.0		6.0	6.0		
Act Effct Green (s)		31.1		23.2	60.3		50.2	50.2		36.2	36.2		
Actuated g/C Ratio		0.24		0.18	0.47		0.39	0.39		0.28	0.28		
v/c Ratio		0.89		0.83	0.86		0.67	0.52		0.84	0.92		
Control Delay		57.8		73.1	35.4		40.9	34.1		67.1	68.5		
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		57.8		73.1	35.4		40.9	34.1		67.1	68.5		
LOS		E		E	D		D	C		E	E		
Approach Delay		57.8			39.8			36.9			68.0		
Approach LOS		E			D			D			E		
Queue Length 50th (ft)		279		190	464		144	217		195	368		
Queue Length 95th (ft)		#453		#343	#772		#281	356		#394	#687		
Internal Link Dist (ft)		409			879			820			473		
Turn Bay Length (ft)				100			150			100			
Base Capacity (vph)	1112		315	2220		388	711		315	526			
Starvation Cap Reductn	0		0	0		0	0		0	0			
Spillback Cap Reductn	0		0	0		0	0		0	0			
Storage Cap Reductn	0		0	0		0	0		0	0			
Reduced v/c Ratio	0.89		0.79	0.86		0.67	0.52		0.84	0.92			

Intersection Summary

Cycle Length: 151
Actuated Cycle Length: 127.6
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 48.0 Intersection LOS: D
Intersection Capacity Utilization 87.0% ICU Level of Service E
Analysis Period (min) 15
Description: Note: Phase 7 shows minimum green = 20 while maximum green = 12. Also, phases 1,2,6 show Recall = EXT - I used Min

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

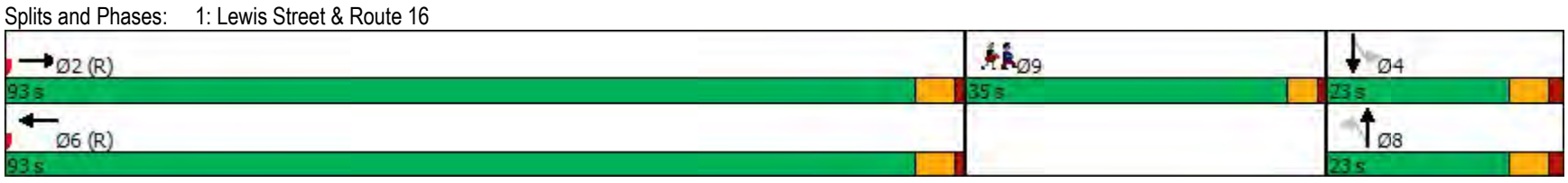
Splits and Phases: 11: Webster Avenue/Garfield Avenue & Route 16

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	2426	29	0	2154	5	22	14	9	9	14	27	
Future Volume (vph)	0	2426	29	0	2154	5	22	14	9	9	14	27	
Satd. Flow (prot)	0	3101	0	0	3131	0	0	1747	0	0	1677	0	
Flt Permitted								0.797			0.940		
Satd. Flow (perm)	0	3101	0	0	3131	0	0	1410	0	0	1585	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2742	0	0	2387	0	0	68	0	0	60	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		93.0			93.0		23.0	23.0		23.0	23.0		35.0
Total Lost Time (s)		5.0			5.0			5.5			5.5		
Act Effct Green (s)		117.0			117.0			14.2			14.1		
Actuated g/C Ratio		0.77			0.77			0.09			0.09		
v/c Ratio		1.14			0.98			0.52			0.41		
Control Delay		89.5			34.8			77.8			71.4		
Queue Delay		0.0			0.0			0.0			0.0		
Total Delay		89.5			34.8			77.8			71.4		
LOS		F			C			E			E		
Approach Delay		89.5			34.8			77.8			71.4		
Approach LOS		F			C			E			E		
Queue Length 50th (ft)		~1081			479			65			57		
Queue Length 95th (ft)		#1453			#1187			88			100		
Internal Link Dist (ft)		532			675			497			190		
Turn Bay Length (ft)													
Base Capacity (vph)	2402		2426		167		187						
Starvation Cap Reductn	0		0		0		0						
Spillback Cap Reductn	0		0		0		0						
Storage Cap Reductn	0		0		0		0						
Reduced v/c Ratio	1.14		0.98		0.41		0.32						

Intersection Summary	
Cycle Length: 151	
Actuated Cycle Length: 151	
Offset: 34 (23%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 64.3	Intersection LOS: E
Intersection Capacity Utilization 68.1%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lewis Street & Route 16

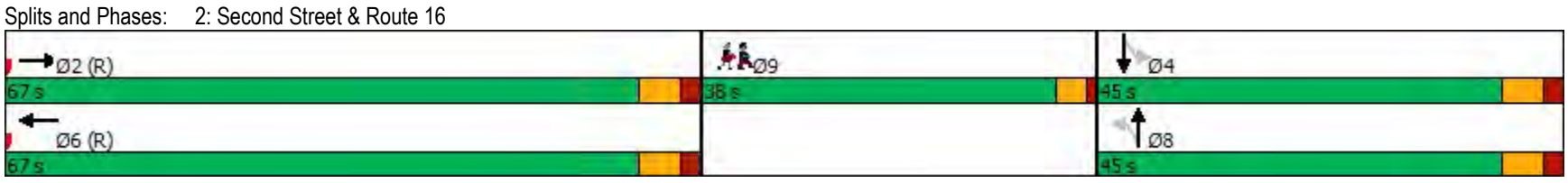


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	2027	417	0	1839	128	268	51	2	45	41	52	
Future Volume (vph)	0	2027	417	0	1839	128	268	51	2	45	41	52	
Satd. Flow (prot)	0	4885	0	0	5029	0	1388	851	0	0	1759	0	
Flt Permitted							0.603	0.659			0.800		
Satd. Flow (perm)	0	4885	0	0	5029	0	875	797	0	0	1430	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2701	0	0	2086	0	182	188	0	0	166	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		67.0			67.0		45.0	45.0		45.0	45.0		38.0
Total Lost Time (s)		6.0			6.0		6.0	6.0			6.0		
Act Effct Green (s)		88.0			88.0		45.6	45.6			45.6		
Actuated g/C Ratio		0.59			0.59		0.30	0.30			0.30		
v/c Ratio		0.94			0.71		0.69	0.78			0.38		
Control Delay		37.0			7.9		58.6	68.5			42.4		
Queue Delay		26.2			0.5		0.0	0.0			1.0		
Total Delay		63.2			8.4		58.6	68.5			43.4		
LOS		E			A		E	E			D		
Approach Delay		63.2			8.4			63.6			43.4		
Approach LOS		E			A			E			D		
Queue Length 50th (ft)		812			77		193	174			127		
Queue Length 95th (ft)		#1348			m745		288	263			174		
Internal Link Dist (ft)		675			412			757			460		
Turn Bay Length (ft)							300						
Base Capacity (vph)	2866		2951				272	248			445		
Starvation Cap Reductn	310		389				0	0			0		
Spillback Cap Reductn	199		0				0	0			120		
Storage Cap Reductn	0		0				0	0			0		
Reduced v/c Ratio	1.06		0.81				0.67	0.76			0.51		

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 70 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 41.1 Intersection LOS: D
Intersection Capacity Utilization 77.0% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Second Street & Route 16



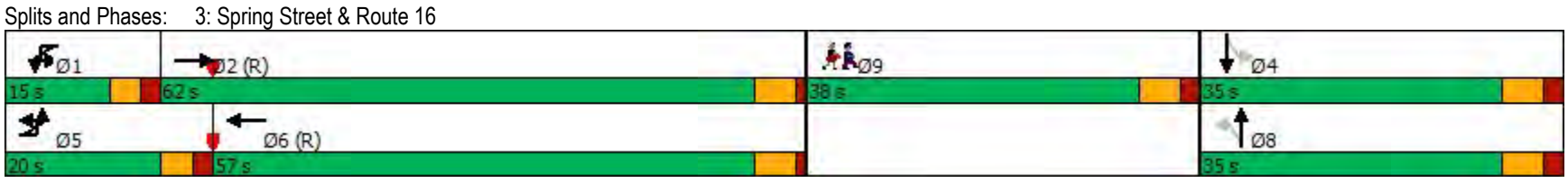
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	35	114	1871	45	39	44	1742	50	49	50	60	26	35	132	
Future Volume (vph)	35	114	1871	45	39	44	1742	50	49	50	60	26	35	132	
Satd. Flow (prot)	0	1720	5111	0	0	1727	4894	0	0	1408	0	0	1374	0	
Flt Permitted		0.950				0.950				0.785			0.930		
Satd. Flow (perm)	0	1711	5111	0	0	1719	4894	0	0	1227	0	0	1419	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	187	2140	0	0	102	1920	0	0	203	0	0	253	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	20.0	20.0	62.0		15.0	15.0	57.0		35.0	35.0		35.0	35.0		38.0
Total Lost Time (s)		5.0	5.0			5.0	5.0			6.0			6.0		
Act Effct Green (s)		19.0	62.0			11.1	54.0			51.4			51.4		
Actuated g/C Ratio		0.13	0.41			0.07	0.36			0.34			0.34		
v/c Ratio		0.86	1.01			0.80	1.09			0.48			0.52		
Control Delay		98.3	47.6			94.1	76.2			46.1			46.5		
Queue Delay		0.0	33.7			0.0	4.5			0.0			0.0		
Total Delay		98.3	81.3			94.1	80.7			46.1			46.5		
LOS		F	F			F	F			D			D		
Approach Delay			82.7				81.4			46.1			46.5		
Approach LOS			F				F			D			D		
Queue Length 50th (ft)		195	390			91	~738			174			220		
Queue Length 95th (ft)		m#238	#930			m107	#913			250			303		
Internal Link Dist (ft)			412				550			363			385		
Turn Bay Length (ft)	150				225										
Base Capacity (vph)	218	2111			129	1761			420			485			
Starvation Cap Reductn	0	277			0	204			0			0			
Spillback Cap Reductn	0	0			0	146			0			0			
Storage Cap Reductn	0	0			0	0			0			0			
Reduced v/c Ratio	0.86	1.17			0.79	1.23			0.48			0.52			

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 60 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 78.7 Intersection LOS: E
Intersection Capacity Utilization 77.6% ICU Level of Service D
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Spring Street & Route 16

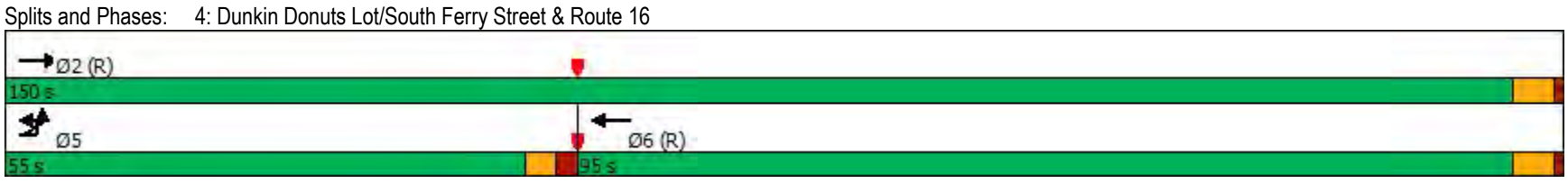


Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	21	330	1645	0	0	1808	69	0	0	72	0	0	0
Future Volume (vph)	21	330	1645	0	0	1808	69	0	0	72	0	0	0
Satd. Flow (prot)	0	1310	3576	0	0	3484	0	0	0	1655	0	0	0
Flt Permitted		0.900											
Satd. Flow (perm)	0	1309	4471	0	0	3484	0	0	0	1655	0	0	0
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	384	1799	0	0	2011	0	0	0	135	0	0	0
Turn Type	Prot	Prot	NA			NA				Perm			
Protected Phases	5	5	2			6							
Permitted Phases										2			
Total Split (s)	55.0	55.0	150.0			95.0				150.0			
Total Lost Time (s)		5.0	5.0			5.0				5.0			
Act Effct Green (s)		46.3	150.0			93.7				150.0			
Actuated g/C Ratio		0.31	1.00			0.62				1.00			
v/c Ratio		0.95	0.50			0.92				0.08			
Control Delay		45.6	5.7			24.1				0.1			
Queue Delay		0.0	1.8			45.6				0.1			
Total Delay		45.6	7.5			69.7				0.2			
LOS		D	A			E				A			
Approach Delay			14.2			69.7			0.2				
Approach LOS			B			E			A				
Queue Length 50th (ft)		487	42			836				0			
Queue Length 95th (ft)		m502	m453			m#931				0			
Internal Link Dist (ft)			550			503			557			380	
Turn Bay Length (ft)	225												
Base Capacity (vph)	436	3576		2177			1655						
Starvation Cap Reductn	0	0		535			0						
Spillback Cap Reductn	0	1541		441			712						
Storage Cap Reductn	0	0		0			0						
Reduced v/c Ratio	0.88	0.88		1.22			0.14						

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 3 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 39.6	Intersection LOS: D
Intersection Capacity Utilization 67.1%	ICU Level of Service C
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Dunkin Donuts Lot/South Ferry Street & Route 16

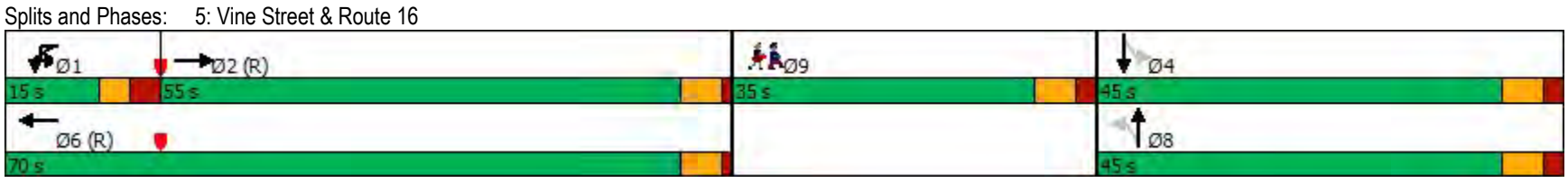


Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1631	86	18	24	1606	139	135	194	29	54	101	136	
Future Volume (vph)	0	1631	86	18	24	1606	139	135	194	29	54	101	136	
Satd. Flow (prot)	0	4863	0	0	1669	4846	0	0	1618	0	0	1396	0	
Flt Permitted					0.950				0.636			0.819		
Satd. Flow (perm)	0	4863	0	0	1649	4846	0	0	1046	0	0	1269	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1859	0	0	51	1888	0	0	443	0	0	360	0	
Turn Type		NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases		2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)		55.0		15.0	15.0	70.0		45.0	45.0		45.0	45.0		35.0
Total Lost Time (s)		5.0			6.0	5.0			6.0			6.0		
Act Effct Green (s)		53.4			8.4	65.0			64.4			64.4		
Actuated g/C Ratio		0.36			0.06	0.43			0.43			0.43		
v/c Ratio		1.07			0.55	0.90			0.99			0.66		
Control Delay		99.7			86.1	47.7			81.2			43.9		
Queue Delay		11.0			0.0	46.8			0.0			0.0		
Total Delay		110.6			86.1	94.6			81.2			43.9		
LOS		F			F	F			F			D		
Approach Delay		110.6				94.4			81.2			43.9		
Approach LOS		F				F			F			D		
Queue Length 50th (ft)		~783			51	523			415			271		
Queue Length 95th (ft)		#893			m85	593			#781			#505		
Internal Link Dist (ft)		503				521			407			333		
Turn Bay Length (ft)					100									
Base Capacity (vph)	1731				100	2099			449			545		
Starvation Cap Reductn	49				0	24			0			0		
Spillback Cap Reductn	0				0	745			0			0		
Storage Cap Reductn	0				0	0			0			0		
Reduced v/c Ratio	1.11				0.51	1.39			0.99			0.66		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 95.7	Intersection LOS: F
Intersection Capacity Utilization 83.9%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Vine Street & Route 16



Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR	Ø9
Lane Configurations								
Traffic Volume (vph)	1573	159	5	0	1415	372	8	
Future Volume (vph)	1573	159	5	0	1415	372	8	
Satd. Flow (prot)	4410	0	0	1504	4916	1787	0	
Flt Permitted				0.900		0.953		
Satd. Flow (perm)	4410	0	0	1481	4916	1764	0	
Satd. Flow (RTOR)								
Lane Group Flow (vph)	1894	0	0	6	1532	443	0	
Turn Type	NA		Prot	Prot	NA	Prot		
Protected Phases	2		1	1	6	8		9
Permitted Phases								
Total Split (s)	70.5		11.5	11.5	82.0	42.0		26.0
Total Lost Time (s)	5.0			5.5	5.0	5.0		
Act Effct Green (s)	89.4			6.0	91.7	43.1		
Actuated g/C Ratio	0.60			0.04	0.61	0.29		
v/c Ratio	0.72			0.10	0.51	0.86		
Control Delay	22.9			50.0	10.5	67.8		
Queue Delay	0.0			0.0	0.1	0.0		
Total Delay	23.0			50.0	10.6	67.8		
LOS	C			D	B	E		
Approach Delay	23.0				10.7	67.8		
Approach LOS	C				B	E		
Queue Length 50th (ft)	218			5	254	403		
Queue Length 95th (ft)	m194			m14	184	#673		
Internal Link Dist (ft)	521				488	647		
Turn Bay Length (ft)				150				
Base Capacity (vph)	2627			60	3004	513		
Starvation Cap Reductn	33			0	224	0		
Spillback Cap Reductn	0			0	247	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.73			0.10	0.56	0.86		

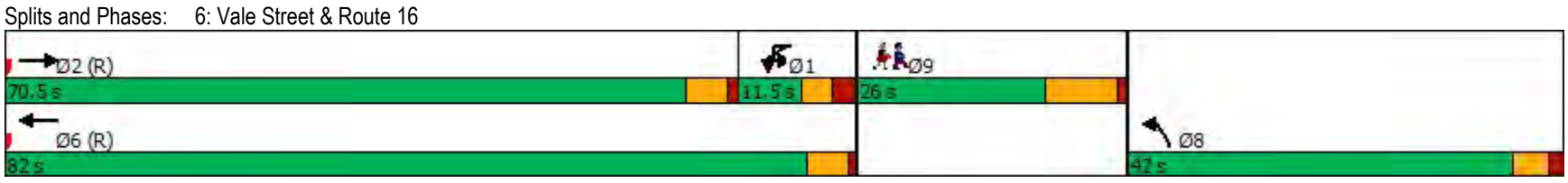
Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 139 (93%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 23.2 — Intersection LOS: C
Intersection Capacity Utilization 66.2% — ICU Level of Service C
Analysis Period (min) 15
Description: Note: Splits and offsets need to be optimized via synchro due to lack of coordination data

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Vale Street & Route 16

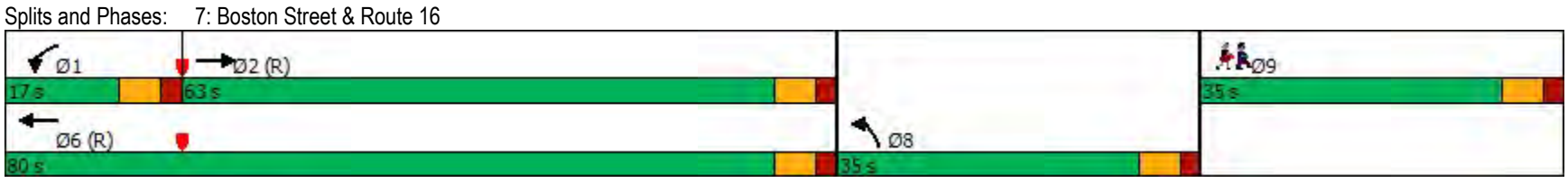


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø9
Lane Configurations							
Traffic Volume (vph)	1544	51	88	1412	8	220	
Future Volume (vph)	1544	51	88	1412	8	220	
Satd. Flow (prot)	4888	0	1646	4916	1575	0	
Flt Permitted			0.950		0.998		
Satd. Flow (perm)	4888	0	1643	4916	1575	0	
Satd. Flow (RTOR)							
Lane Group Flow (vph)	1762	0	118	1528	300	0	
Turn Type	NA		Prot	NA	Prot		
Protected Phases	2		1	6	8		9
Permitted Phases							
Total Split (s)	63.0		17.0	80.0	35.0		35.0
Total Lost Time (s)	6.0		6.0	6.0	6.0		
Act Effct Green (s)	82.5		20.5	109.0	29.0		
Actuated g/C Ratio	0.55		0.14	0.73	0.19		
v/c Ratio	0.66		0.52	0.43	0.99		
Control Delay	10.2		70.1	6.6	107.8		
Queue Delay	0.8		0.0	0.2	0.0		
Total Delay	11.0		70.1	6.8	107.8		
LOS	B		E	A	F		
Approach Delay	11.0			11.3	107.8		
Approach LOS	B			B	F		
Queue Length 50th (ft)	296		121	144	296		
Queue Length 95th (ft)	100		m150	m75	#405		
Internal Link Dist (ft)	488			406	880		
Turn Bay Length (ft)			150				
Base Capacity (vph)	2687		225	3572	304		
Starvation Cap Reductn	219		0	970	0		
Spillback Cap Reductn	550		0	0	0		
Storage Cap Reductn	0		0	0	0		
Reduced v/c Ratio	0.82		0.52	0.59	0.99		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 19.0	Intersection LOS: B
Intersection Capacity Utilization 69.1%	ICU Level of Service C
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Boston Street & Route 16

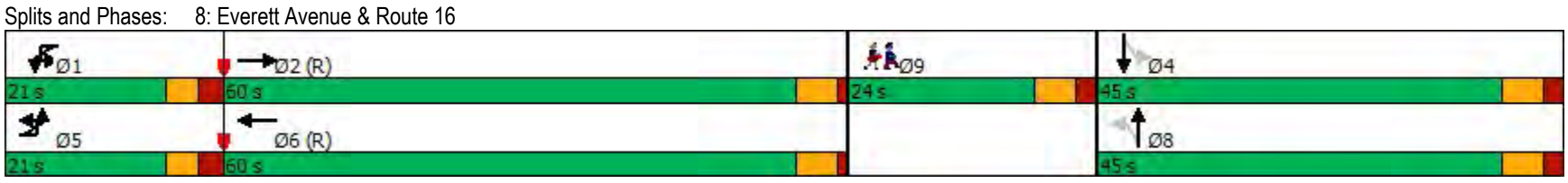


Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	49	184	1377	158	8	57	1224	21	185	230	50	55	151	42	
Future Volume (vph)	49	184	1377	158	8	57	1224	21	185	230	50	55	151	42	
Satd. Flow (prot)	0	1724	4786	0	0	1685	4896	0	1694	1738	0	1601	1744	0	
Flt Permitted		0.950				0.950			0.509			0.310			
Satd. Flow (perm)	0	1697	4786	0	0	1663	4896	0	897	1738	0	518	1744	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	278	1714	0	0	76	1348	0	218	363	0	80	220	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	21.0	21.0	60.0		21.0	21.0	60.0		45.0	45.0		45.0	45.0		24.0
Total Lost Time (s)		5.5	5.0			5.5	5.0		6.0	6.0		6.0	6.0		
Act Effct Green (s)		22.3	62.2			15.1	55.0		46.6	46.6		46.6	46.6		
Actuated g/C Ratio		0.15	0.41			0.10	0.37		0.31	0.31		0.31	0.31		
v/c Ratio		1.09	0.86			0.45	0.75		0.78	0.67		0.50	0.41		
Control Delay		135.4	34.5			71.4	52.0		68.1	53.5		57.3	45.0		
Queue Delay		0.0	1.4			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		135.4	35.8			71.4	52.0		68.1	53.5		57.3	45.0		
LOS		F	D			E	D		E	D		E	D		
Approach Delay			49.7				53.1			59.0			48.3		
Approach LOS			D				D			E			D		
Queue Length 50th (ft)		242	449			75	331		180	287		59	157		
Queue Length 95th (ft)		m#526	m#689			127	380		#372	403		101	271		
Internal Link Dist (ft)			406				387			396			538		
Turn Bay Length (ft)	150					100			100			100			
Base Capacity (vph)	256	1985				174	1795		278	539		160	541		
Starvation Cap Reductn	0	121				0	0		0	0		0	0		
Spillback Cap Reductn	0	0				0	0		0	0		0	0		
Storage Cap Reductn	0	0				0	0		0	0		0	0		
Reduced v/c Ratio	1.09	0.92				0.44	0.75		0.78	0.67		0.50	0.41		

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 52.0 Intersection LOS: D
Intersection Capacity Utilization 87.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

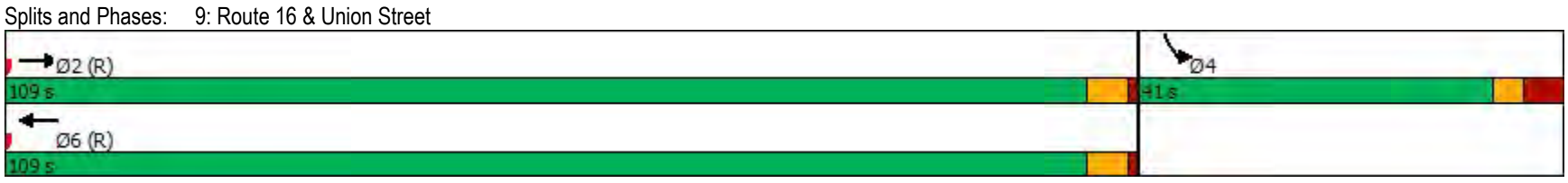
Splits and Phases: 8: Everett Avenue & Route 16



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1490	1299	224	126	11
Future Volume (vph)	0	1490	1299	224	126	11
Satd. Flow (prot)	0	4868	4797	0	1764	0
Flt Permitted					0.956	
Satd. Flow (perm)	0	4868	4797	0	1764	0
Satd. Flow (RTOR)						
Lane Group Flow (vph)	0	1701	1684	0	151	0
Turn Type		NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases						
Total Split (s)		109.0	109.0		41.0	
Total Lost Time (s)		5.0	5.0		7.0	
Act Effct Green (s)		120.7	120.7		17.3	
Actuated g/C Ratio		0.80	0.80		0.12	
v/c Ratio		0.43	0.44		0.75	
Control Delay		10.6	1.9		85.3	
Queue Delay		15.5	0.4		0.0	
Total Delay		26.1	2.3		85.3	
LOS		C	A		F	
Approach Delay		26.1	2.3		85.3	
Approach LOS		C	A		F	
Queue Length 50th (ft)		207	49		145	
Queue Length 95th (ft)		328	45		215	
Internal Link Dist (ft)		219	319		460	
Turn Bay Length (ft)						
Base Capacity (vph)	3918	3861		399		
Starvation Cap Reductn	0	1422		0		
Spillback Cap Reductn	2240	0		0		
Storage Cap Reductn	0	0		0		
Reduced v/c Ratio	1.01	0.69		0.38		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 100 (67%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 49.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: Route 16 & Union Street



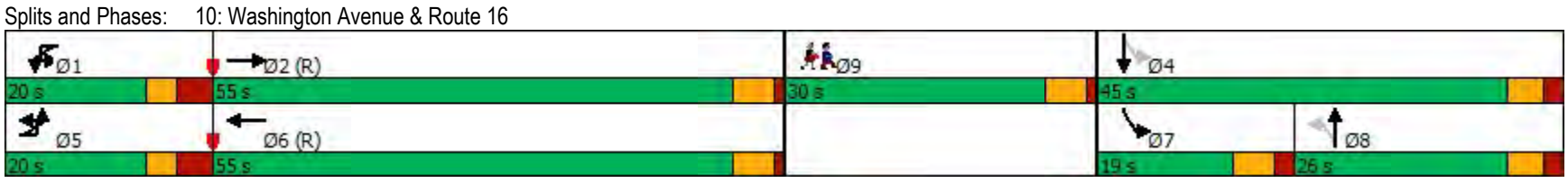
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	218	1185	213	20	135	1264	31	139	234	23	57	133	120	
Future Volume (vph)	218	1185	213	20	135	1264	31	139	234	23	57	133	120	
Satd. Flow (prot)	1745	4734	0	0	1730	4891	0	1736	1799	0	1770	1665	0	
Flt Permitted	0.950				0.950			0.576			0.253			
Satd. Flow (perm)	1735	4734	0	0	1711	4891	0	1019	1799	0	467	1665	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	263	1687	0	0	183	1494	0	172	300	0	67	302	0	
Turn Type	Prot	NA		Prot	Prot	NA		Perm	NA		pm+pt	NA		
Protected Phases	5	2		1	1	6			8		7	4		9
Permitted Phases								8			4			
Total Split (s)	20.0	55.0		20.0	20.0	55.0		26.0	26.0		19.0	45.0		30.0
Total Lost Time (s)	6.5	5.0			6.5	5.0		5.5	5.5		6.0	5.5		
Act Effct Green (s)	22.9	51.2			21.7	50.0		35.6	35.6		50.4	50.9		
Actuated g/C Ratio	0.15	0.34			0.14	0.33		0.24	0.24		0.34	0.34		
v/c Ratio	0.99	1.04			0.73	0.92		0.71	0.70		0.26	0.53		
Control Delay	111.2	82.1			78.2	57.8		70.8	63.3		37.9	44.8		
Queue Delay	0.0	23.1			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	111.2	105.2			78.2	57.8		70.8	63.3		37.9	44.8		
LOS	F	F			E	E		E	E		D	D		
Approach Delay		106.1				60.0			66.0			43.6		
Approach LOS		F				E			E			D		
Queue Length 50th (ft)	272	~627			169	514		153	266		43	226		
Queue Length 95th (ft)	#545	#699			#370	582		#306	#498		86	344		
Internal Link Dist (ft)		319				1066			414			597		
Turn Bay Length (ft)	100				150			150			150			
Base Capacity (vph)	266	1617			249	1630		242	427		274	565		
Starvation Cap Reductn	0	144			0	0		0	0		0	0		
Spillback Cap Reductn	0	0			0	0		0	0		0	0		
Storage Cap Reductn	0	0			0	0		0	0		0	0		
Reduced v/c Ratio	0.99	1.15			0.73	0.92		0.71	0.70		0.24	0.53		

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 79.4 Intersection LOS: E
Intersection Capacity Utilization 83.9% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Washington Avenue & Route 16



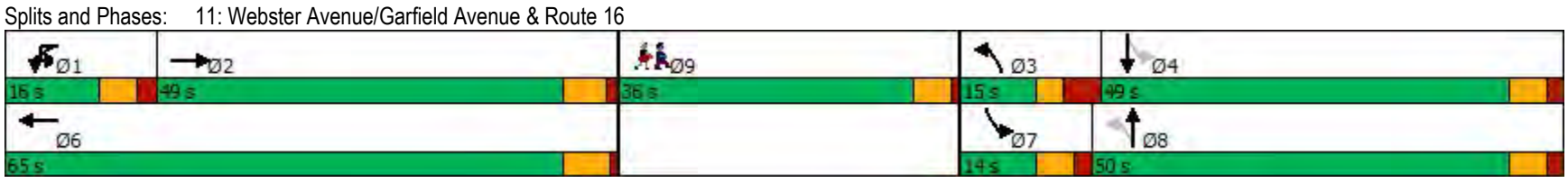
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1164	181	111	1194	13	288	349	219	226	270	175	
Future Volume (vph)	0	1164	181	111	1194	13	288	349	219	226	270	175	
Satd. Flow (prot)	0	4775	0	1685	4783	0	1736	1923	0	1787	1916	0	
Flt Permitted				0.950			*0.900			*0.900			
Satd. Flow (perm)	0	4775	0	1683	4783	0	1638	1923	0	1682	1916	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	1441	0	128	1393	0	344	648	0	264	557	0	
Turn Type		NA		Prot	NA		pm+pt	NA		pm+pt	NA		
Protected Phases		2		1	6		3	8		7	4		9
Permitted Phases							8			4			
Total Split (s)		49.0		16.0	65.0		15.0	50.0		14.0	49.0		36.0
Total Lost Time (s)		6.0		6.0	6.0		7.0	6.0		6.0	6.0		
Act Effct Green (s)		43.6		10.1	59.8		51.7	44.6		51.7	43.6		
Actuated g/C Ratio		0.30		0.07	0.42		0.36	0.31		0.36	0.30		
v/c Ratio		0.99		1.08	0.70		0.58	1.08		0.43	0.95		
Control Delay		70.4		165.1	38.7		42.6	106.5		37.4	76.5		
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		70.4		165.1	38.7		42.6	106.5		37.4	76.5		
LOS		E		F	D		D	F		D	E		
Approach Delay		70.4			49.3			84.3			63.9		
Approach LOS		E			D			F			E		
Queue Length 50th (ft)		419		109	320		197	537		140	436		
Queue Length 95th (ft)		#761		#317	557		400	#1116		302	#822		
Internal Link Dist (ft)		409			879			820			473		
Turn Bay Length (ft)				100			150			100			
Base Capacity (vph)	1455			119	2000		597	599		614	584		
Starvation Cap Reductn	0			0	0		0	0		0	0		
Spillback Cap Reductn	0			0	0		0	0		0	0		
Storage Cap Reductn	0			0	0		0	0		0	0		
Reduced v/c Ratio	0.99			1.08	0.70		0.58	1.08		0.43	0.95		

Intersection Summary

Cycle Length: 165
Actuated Cycle Length: 143
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 65.5 Intersection LOS: E
Intersection Capacity Utilization 102.4% ICU Level of Service G
Analysis Period (min) 15
Description: Note: turning movmement counts show no volume heading southbound on Webster. Volumes shown were extrapolated from 2016 TMCs
Note: Phase 7 shows minimum green = 20 while maximum green = 12. Also, phases 1,2,6 show Recall = EXT - I used Min

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Webster Avenue/Garfield Avenue & Route 16



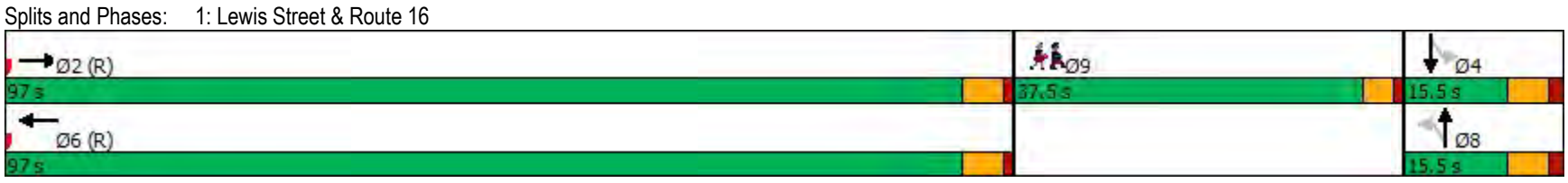
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	2108	18	0	2045	24	15	8	9	24	20	21	
Future Volume (vph)	0	2108	18	0	2045	24	15	8	9	24	20	21	
Satd. Flow (prot)	0	3305	0	0	4322	0	0	1773	0	0	1760	0	
Flt Permitted								*0.900			*0.900		
Satd. Flow (perm)	0	3305	0	0	4322	0	0	1633	0	0	1602	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2257	0	0	2395	0	0	44	0	0	81	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		97.0			97.0		15.5	15.5		15.5	15.5		37.5
Total Lost Time (s)		5.0			5.0			5.5			5.5		
Act Effct Green (s)		115.2			115.2			15.5			15.5		
Actuated g/C Ratio		0.77			0.77			0.10			0.10		
v/c Ratio		0.89			0.72			0.26			0.49		
Control Delay		21.2			30.3			64.5			72.9		
Queue Delay		2.8			3.0			0.0			45.2		
Total Delay		24.0			33.3			64.5			118.1		
LOS		C			C			E			F		
Approach Delay		24.0			33.3			64.5			118.1		
Approach LOS		C			C			E			F		
Queue Length 50th (ft)		366			799			40			76		
Queue Length 95th (ft)		#966			852			66			120		
Internal Link Dist (ft)		532			675			497			190		
Turn Bay Length (ft)													
Base Capacity (vph)	2538		3320		168		165						
Starvation Cap Reductn	0		795		0		0						
Spillback Cap Reductn	187		0		0		82						
Storage Cap Reductn	0		0		0		0						
Reduced v/c Ratio	0.96		0.95		0.26		0.98						

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 36 (24%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 30.7 — Intersection LOS: C
Intersection Capacity Utilization 57.8% — ICU Level of Service B
Analysis Period (min) 15

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lewis Street & Route 16

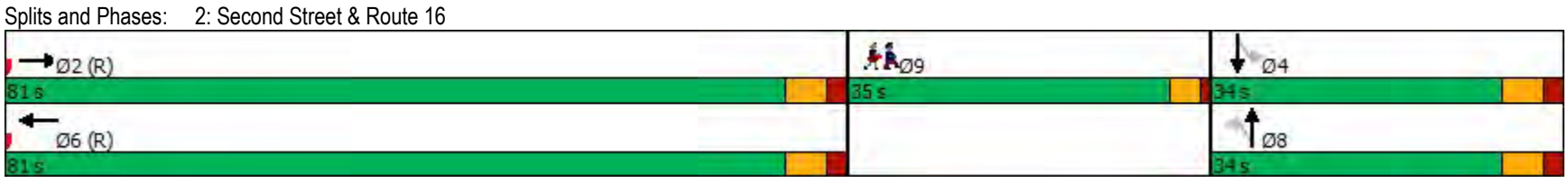


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1712	428	0	1702	132	306	74	8	43	60	61	
Future Volume (vph)	0	1712	428	0	1702	132	306	74	8	43	60	61	
Satd. Flow (prot)	0	4881	0	0	5083	0	1665	1580	0	0	1767	0	
Flt Permitted							0.579	0.666			0.816		
Satd. Flow (perm)	0	4881	0	0	5083	0	1011	1167	0	0	1461	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2320	0	0	2249	0	227	238	0	0	203	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		81.0			81.0		34.0	34.0		34.0	34.0		35.0
Total Lost Time (s)		6.0			6.0		6.0	6.0			6.0		
Act Effct Green (s)		75.0			75.0		54.2	54.2			54.2		
Actuated g/C Ratio		0.50			0.50		0.36	0.36			0.36		
v/c Ratio		0.95			0.89		0.62	0.57			0.39		
Control Delay		52.1			16.0		51.0	47.7			41.1		
Queue Delay		28.7			0.5		7.2	3.8			0.9		
Total Delay		80.8			16.6		58.2	51.5			42.0		
LOS		F			B		E	D			D		
Approach Delay		80.8			16.6			54.8			42.0		
Approach LOS		F			B			D			D		
Queue Length 50th (ft)		748			128		173	176			133		
Queue Length 95th (ft)		926			m149		#343	318			231		
Internal Link Dist (ft)		675			412			757			460		
Turn Bay Length (ft)							300						
Base Capacity (vph)	2440		2541				365	421			527		
Starvation Cap Reductn	259		64				0	0			0		
Spillback Cap Reductn	194		72				96	111			139		
Storage Cap Reductn	0		0				0	0			0		
Reduced v/c Ratio	1.06		0.91				0.84	0.77			0.52		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 110 (73%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 49.4	Intersection LOS: D
Intersection Capacity Utilization 79.7%	ICU Level of Service D
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Second Street & Route 16



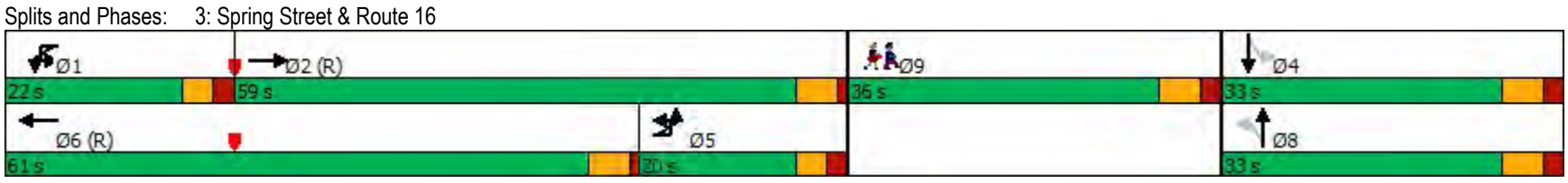
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	47	109	1561	46	66	54	1608	45	63	51	85	40	43	116	
Future Volume (vph)	47	109	1561	46	66	54	1608	45	63	51	85	40	43	116	
Satd. Flow (prot)	0	1488	5063	0	0	1449	4940	0	0	1420	0	0	1403	0	
Flt Permitted		0.900				0.900				*0.800			*0.810		
Satd. Flow (perm)	0	1485	5063	0	0	1443	4940	0	0	1262	0	0	1262	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	171	1689	0	0	165	1980	0	0	241	0	0	247	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	20.0	20.0	59.0		22.0	22.0	61.0		33.0	33.0		33.0	33.0		36.0
Total Lost Time (s)		5.0	5.0			5.0	5.0			6.0			6.0		
Act Effct Green (s)		15.0	61.4			20.4	66.9			42.5			42.5		
Actuated g/C Ratio		0.10	0.41			0.14	0.45			0.28			0.28		
v/c Ratio		1.16	0.81			0.84	0.90			0.67			0.69		
Control Delay		131.7	13.9			82.7	26.1			59.2			60.1		
Queue Delay		0.0	17.6			0.0	3.1			0.0			0.0		
Total Delay		131.7	31.5			82.7	29.1			59.2			60.1		
LOS		F	C			F	C			E			E		
Approach Delay			40.7				33.2			59.2			60.1		
Approach LOS			D				C			E			E		
Queue Length 50th (ft)		~224	287			153	554			231			238		
Queue Length 95th (ft)		m#250	m627			#267	#809			334			333		
Internal Link Dist (ft)			412				550			363			385		
Turn Bay Length (ft)	150				225										
Base Capacity (vph)	148	2073			197	2201			358			358			
Starvation Cap Reductn	0	423			0	144			0			0			
Spillback Cap Reductn	0	0			0	102			0			0			
Storage Cap Reductn	0	0			0	0			0			0			
Reduced v/c Ratio	1.16	1.02			0.84	0.96			0.67			0.69			

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 146 (97%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.16
Intersection Signal Delay: 39.2 — Intersection LOS: D
Intersection Capacity Utilization 74.3% — ICU Level of Service D
Analysis Period (min) 15

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Spring Street & Route 16

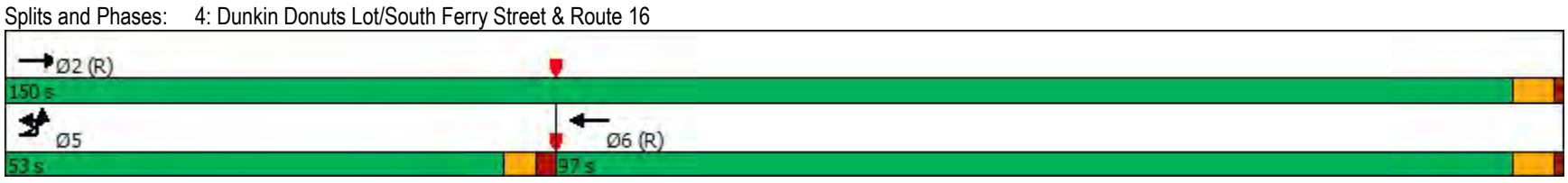


Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	21	221	1510	0	0	1732	67	0	0	60	0	0	0
Future Volume (vph)	21	221	1510	0	0	1732	67	0	0	60	0	0	0
Satd. Flow (prot)	0	1170	3576	0	0	4295	0	0	0	1589	0	0	0
Flt Permitted		0.800											
Satd. Flow (perm)	0	1169	4471	0	0	4295	0	0	0	1589	0	0	0
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	271	1672	0	0	2105	0	0	0	67	0	0	0
Turn Type	Prot	Prot	NA			NA				Perm			
Protected Phases	5	5	2			6							
Permitted Phases										2			
Total Split (s)	53.0	53.0	150.0			97.0				150.0			
Total Lost Time (s)		5.0	5.0			5.0				5.0			
Act Effct Green (s)		38.0	150.0			102.0				150.0			
Actuated g/C Ratio		0.25	1.00			0.68				1.00			
v/c Ratio		0.92	0.47			0.72				0.04			
Control Delay		54.2	4.2			12.9				0.0			
Queue Delay		0.0	0.6			0.7				0.0			
Total Delay		54.2	4.8			13.7				0.1			
LOS		D	A			B				A			
Approach Delay			11.7			13.7			0.1				
Approach LOS			B			B			A				
Queue Length 50th (ft)		350	180			578				0			
Queue Length 95th (ft)		m435	497			935				0			
Internal Link Dist (ft)			550			503			557			380	
Turn Bay Length (ft)	225												
Base Capacity (vph)	374	3576		2921			1589						
Starvation Cap Reductn	0	0		446			0						
Spillback Cap Reductn	0	1358		313			603						
Storage Cap Reductn	0	0		0			0						
Reduced v/c Ratio	0.72	0.75		0.85			0.07						

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 83 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 12.5	Intersection LOS: B
Intersection Capacity Utilization 58.2%	ICU Level of Service B
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Dunkin Donuts Lot/South Ferry Street & Route 16



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1462	108	9	22	1540	95	127	103	37	75	120	132	
Future Volume (vph)	0	1462	108	9	22	1540	95	127	103	37	75	120	132	
Satd. Flow (prot)	0	4855	0	0	1504	4870	0	0	1790	0	0	1718	0	
Flt Permitted					0.900				0.587			0.831		
Satd. Flow (perm)	0	4855	0	0	1495	4870	0	0	1073	0	0	1441	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1739	0	0	44	1754	0	0	303	0	0	370	0	
Turn Type		NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases		2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)		64.0		20.0	20.0	84.0		30.0	30.0		30.0	30.0		36.0
Total Lost Time (s)		5.0			6.0	5.0			6.0			6.0		
Act Effct Green (s)		66.7			9.1	79.0			55.2			55.2		
Actuated g/C Ratio		0.44			0.06	0.53			0.37			0.37		
v/c Ratio		0.81			0.48	0.68			0.77			0.70		
Control Delay		58.2			76.5	26.6			56.1			49.1		
Queue Delay		5.0			0.0	0.3			0.0			0.0		
Total Delay		63.2			76.5	26.8			56.1			49.1		
LOS		E			E	C			E			D		
Approach Delay		63.2				28.1			56.1			49.1		
Approach LOS		E				C			E			D		
Queue Length 50th (ft)		630			48	418			247			290		
Queue Length 95th (ft)		700			81	550			#548			#609		
Internal Link Dist (ft)		503				521			407			333		
Turn Bay Length (ft)					100									
Base Capacity (vph)	2158				140	2564			395			530		
Starvation Cap Reductn	178				0	214			0			0		
Spillback Cap Reductn	357				0	245			0			0		
Storage Cap Reductn	0				0	0			0			0		
Reduced v/c Ratio	0.97				0.31	0.76			0.77			0.70		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 86 (57%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 46.5	Intersection LOS: D
Intersection Capacity Utilization 71.1%	ICU Level of Service C
Analysis Period (min) 15	

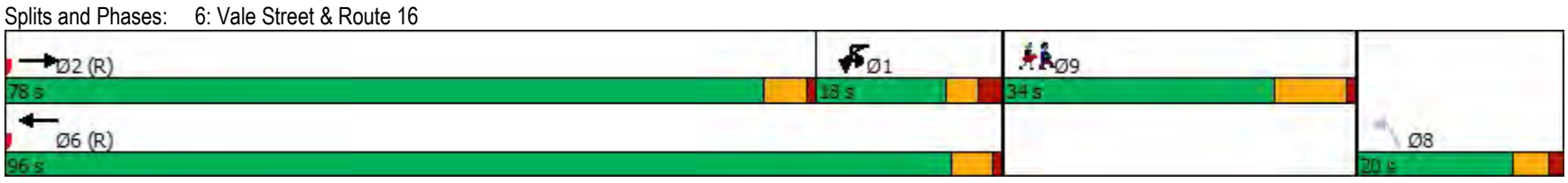
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Vine Street & Route 16

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR	Ø9
Lane Configurations								
Traffic Volume (vph)	1413	187	17	7	1442	224	1	
Future Volume (vph)	1413	187	17	7	1442	224	1	
Satd. Flow (prot)	4816	0	0	1745	4916	1791	0	
Flt Permitted				0.950		0.953		
Satd. Flow (perm)	4816	0	0	1745	4916	1770	0	
Satd. Flow (RTOR)								
Lane Group Flow (vph)	1916	0	0	26	1547	249	0	
Turn Type	NA		Prot	Prot	NA	Perm		
Protected Phases	2		1	1	6			9
Permitted Phases						8		
Total Split (s)	78.0		18.0	18.0	96.0	20.0		34.0
Total Lost Time (s)	5.0			5.5	5.0	5.0		
Act Effct Green (s)	89.4			9.9	100.2	34.6		
Actuated g/C Ratio	0.60			0.07	0.67	0.23		
v/c Ratio	0.67			0.23	0.47	0.61		
Control Delay	16.1			54.2	9.8	60.4		
Queue Delay	2.7			0.0	0.0	1.6		
Total Delay	18.8			54.2	9.8	62.0		
LOS	B			D	A	E		
Approach Delay	18.8				10.5	62.0		
Approach LOS	B				B	E		
Queue Length 50th (ft)	478			19	124	224		
Queue Length 95th (ft)	736			m45	115	#410		
Internal Link Dist (ft)	521				488	335		
Turn Bay Length (ft)				150				
Base Capacity (vph)	2870			145	3284	408		
Starvation Cap Reductn	806			0	261	0		
Spillback Cap Reductn	168			0	0	57		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.93			0.18	0.51	0.71		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 111 (74%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 18.2	Intersection LOS: B
Intersection Capacity Utilization 53.6%	ICU Level of Service A
Analysis Period (min) 15	
Description: Note: Splits and offsets need to be optimized via synchro due to lack of coordination data	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: Vale Street & Route 16

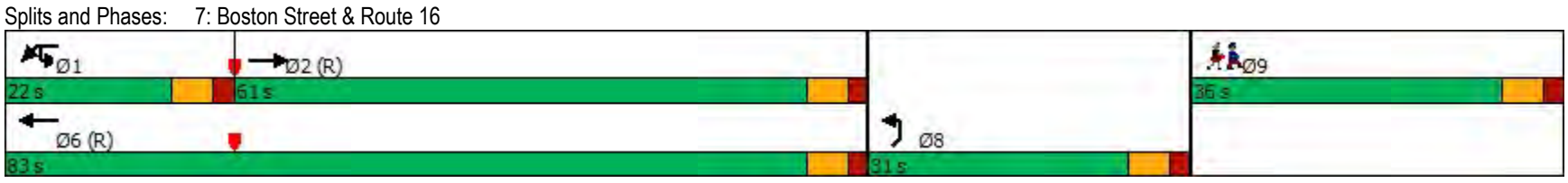


Lane Group	EBT	EBR	WBU	WBL	WBT	NEL	NER	Ø9
Lane Configurations								
Traffic Volume (vph)	1386	63	23	91	1464	2	185	
Future Volume (vph)	1386	63	23	91	1464	2	185	
Satd. Flow (prot)	4874	0	0	1719	4916	1577	0	
Flt Permitted				0.950		0.999		
Satd. Flow (perm)	4874	0	0	1719	4916	1577	0	
Satd. Flow (RTOR)								
Lane Group Flow (vph)	1601	0	0	140	1621	213	0	
Turn Type	NA		Prot	Prot	NA	Prot		
Protected Phases	2		1	1	6	8		9
Permitted Phases								
Total Split (s)	61.0		22.0	22.0	83.0	31.0		36.0
Total Lost Time (s)	6.0			6.0	6.0	6.0		
Act Effct Green (s)	81.9			18.1	106.0	25.0		
Actuated g/C Ratio	0.55			0.12	0.71	0.17		
v/c Ratio	0.60			0.68	0.47	0.81		
Control Delay	7.8			75.5	5.7	83.8		
Queue Delay	0.4			0.0	0.2	0.0		
Total Delay	8.2			75.5	6.0	83.8		
LOS	A			E	A	F		
Approach Delay	8.2				11.5	83.8		
Approach LOS	A				B	F		
Queue Length 50th (ft)	136			140	76	204		
Queue Length 95th (ft)	658			m172	m218	153		
Internal Link Dist (ft)	488				406	316		
Turn Bay Length (ft)								
Base Capacity (vph)	2661			212	3474	262		
Starvation Cap Reductn	358			0	917	0		
Spillback Cap Reductn	502			0	0	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.74			0.66	0.63	0.81		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 146 (97%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 14.3	Intersection LOS: B
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Boston Street & Route 16



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	59	127	1221	187	6	95	1213	18	230	173	82	90	219	76	
Future Volume (vph)	59	127	1221	187	6	95	1213	18	230	173	82	90	219	76	
Satd. Flow (prot)	0	1734	4807	0	0	1697	4900	0	1728	1713	0	1694	1745	0	
Flt Permitted		0.950				0.950			0.382			0.423			
Satd. Flow (perm)	0	1728	4807	0	0	1689	4900	0	689	1713	0	751	1745	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	211	1480	0	0	127	1441	0	255	292	0	103	323	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	25.0	25.0	60.0		25.0	25.0	60.0		27.0	27.0		27.0	27.0		38.0
Total Lost Time (s)		5.5	5.0			5.5	5.0		6.0	6.0		6.0	6.0		
Act Effct Green (s)		19.3	57.9			16.6	55.2		49.4	49.4		49.4	49.4		
Actuated g/C Ratio		0.13	0.39			0.11	0.37		0.33	0.33		0.33	0.33		
v/c Ratio		0.95	0.80			0.68	0.80		1.12	0.52		0.42	0.56		
Control Delay		116.9	29.1			73.3	75.8		141.8	47.8		50.0	48.7		
Queue Delay		0.0	0.7			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		116.9	29.8			73.3	75.8		141.8	47.8		50.0	48.7		
LOS		F	C			E	E		F	D		D	D		
Approach Delay			40.7				75.6			91.6			49.0		
Approach LOS			D				E			F			D		
Queue Length 50th (ft)		179	543			128	516		239	208		71	234		
Queue Length 95th (ft)		m#371	136			186	582		#539	379		163	#441		
Internal Link Dist (ft)			406				387			396			538		
Turn Bay Length (ft)	150				100				100			100			
Base Capacity (vph)	225	1854			220	1803			227	563		247	574		
Starvation Cap Reductn	0	132			0	0			0	0		0	0		
Spillback Cap Reductn	0	0			0	0			0	0		0	0		
Storage Cap Reductn	0	0			0	0			0	0		0	0		
Reduced v/c Ratio	0.94	0.86			0.58	0.80			1.12	0.52		0.42	0.56		

Intersection Summary

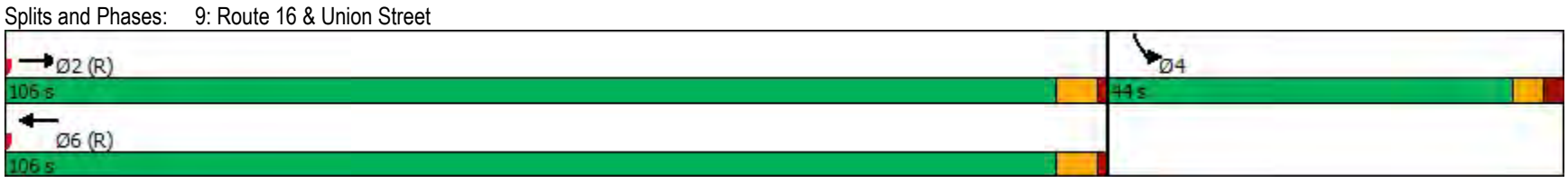
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 61.0 Intersection LOS: E
Intersection Capacity Utilization 90.0% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Everett Avenue & Route 16

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1432	1315	175	146	11
Future Volume (vph)	0	1432	1315	175	146	11
Satd. Flow (prot)	0	4916	4828	0	1799	0
Flt Permitted					0.955	
Satd. Flow (perm)	0	4916	4828	0	1799	0
Satd. Flow (RTOR)						
Lane Group Flow (vph)	0	1490	1739	0	180	0
Turn Type		NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases						
Total Split (s)		106.0	106.0		44.0	
Total Lost Time (s)		5.0	5.0		5.0	
Act Effct Green (s)		120.5	120.5		19.5	
Actuated g/C Ratio		0.80	0.80		0.13	
v/c Ratio		0.38	0.45		0.77	
Control Delay		1.4	2.4		83.8	
Queue Delay		0.0	0.1		0.0	
Total Delay		1.5	2.5		83.8	
LOS		A	A		F	
Approach Delay		1.5	2.5		83.8	
Approach LOS		A	A		F	
Queue Length 50th (ft)		13	61		173	
Queue Length 95th (ft)		79	105		243	
Internal Link Dist (ft)		219	319		460	
Turn Bay Length (ft)						
Base Capacity (vph)		3949	3878		467	
Starvation Cap Reductn		0	888		0	
Spillback Cap Reductn		91	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.39	0.58		0.39	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 6 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 6.3	Intersection LOS: A
Intersection Capacity Utilization 47.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: Route 16 & Union Street



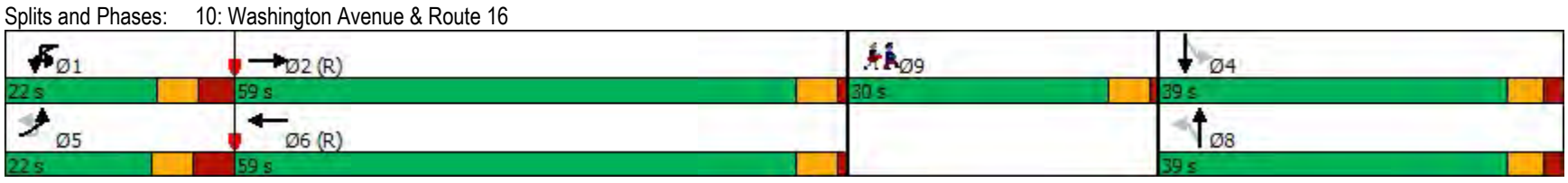
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	212	1188	178	12	76	1224	38	113	123	55	60	158	153	
Future Volume (vph)	212	1188	178	12	76	1224	38	113	123	55	60	158	153	
Satd. Flow (prot)	1745	4757	0	0	1701	4891	0	1736	1756	0	1770	1708	0	
Flt Permitted	0.950				0.950			*0.450			0.457			
Satd. Flow (perm)	1741	4757	0	0	1695	4891	0	818	1756	0	848	1708	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	237	1481	0	0	119	1383	0	132	208	0	66	341	0	
Turn Type	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)	22.0	59.0		22.0	22.0	59.0		39.0	39.0		39.0	39.0		30.0
Total Lost Time (s)	8.0	5.0			7.5	5.0		5.5	5.5		5.5	5.5		
Act Effct Green (s)	29.7	74.3			13.6	57.7		35.0	35.0		35.0	35.0		
Actuated g/C Ratio	0.20	0.50			0.09	0.38		0.23	0.23		0.23	0.23		
v/c Ratio	0.69	0.63			0.78	0.74		0.69	0.51		0.34	0.86		
Control Delay	77.9	16.3			97.2	42.8		71.3	53.8		51.3	75.4		
Queue Delay	0.0	0.6			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	77.9	16.8			97.2	42.8		71.3	53.8		51.3	75.4		
LOS	E	B			F	D		E	D		D	E		
Approach Delay		25.3				47.1			60.6			71.5		
Approach LOS		C				D			E			E		
Queue Length 50th (ft)	238	156			114	397		118	177		54	319		
Queue Length 95th (ft)	#507	331			156	502		188	245		99	427		
Internal Link Dist (ft)		319				1066			414			597		
Turn Bay Length (ft)	100				150			150			150			
Base Capacity (vph)	344	2355			169	1880		199	428		206	416		
Starvation Cap Reductn	0	434			0	0		0	0		0	0		
Spillback Cap Reductn	0	0			0	0		0	0		0	0		
Storage Cap Reductn	0	0			0	0		0	0		0	0		
Reduced v/c Ratio	0.69	0.77			0.70	0.74		0.66	0.49		0.32	0.82		

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 26 (17%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 41.3 — Intersection LOS: D
Intersection Capacity Utilization 85.9% — ICU Level of Service E
Analysis Period (min) 15

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Washington Avenue & Route 16



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1225	184	128	1172	13	299	209	229	190	170	146	
Future Volume (vph)	0	1225	184	128	1172	13	299	209	229	190	170	146	
Satd. Flow (prot)	0	4777	0	1711	4906	0	1752	1886	0	1787	1913	0	
Flt Permitted				0.950			*0.800			*0.800			
Satd. Flow (perm)	0	4777	0	1711	4906	0	1474	1886	0	1492	1913	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	1561	0	145	1285	0	346	501	0	215	353	0	
Turn Type		NA		Prot	NA		pm+pt	NA		pm+pt	NA		
Protected Phases		2		1	6		3	8		7	4		9
Permitted Phases							8			4			
Total Split (s)		46.0		20.0	66.0		17.0	39.0		14.0	35.0		32.0
Total Lost Time (s)		6.0		6.0	6.0		7.0	6.0		6.0	6.0		
Act Effct Green (s)		40.2		13.7	59.9		42.2	33.2		38.2	30.2		
Actuated g/C Ratio		0.33		0.11	0.49		0.34	0.27		0.31	0.25		
v/c Ratio		1.00		0.77	0.54		0.66	0.99		0.45	0.75		
Control Delay		64.8		79.5	24.0		40.5	82.1		34.2	55.4		
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		64.8		79.5	24.0		40.5	82.1		34.2	55.4		
LOS		E		E	C		D	F		C	E		
Approach Delay		64.8			29.6			65.1			47.4		
Approach LOS		E			C			E			D		
Queue Length 50th (ft)		430		109	234		201	379		112	250		
Queue Length 95th (ft)		#720		#262	388		373	#763		225	#491		
Internal Link Dist (ft)		409			879			820			473		
Turn Bay Length (ft)				100			150			100			
Base Capacity (vph)	1558			195	2401		527	508		481	468		
Starvation Cap Reductn	0			0	0		0	0		0	0		
Spillback Cap Reductn	0			0	0		0	0		0	0		
Storage Cap Reductn	0			0	0		0	0		0	0		
Reduced v/c Ratio	1.00			0.74	0.54		0.66	0.99		0.45	0.75		

Intersection Summary

Cycle Length: 151
Actuated Cycle Length: 123.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 51.2 Intersection LOS: D
Intersection Capacity Utilization 93.4% ICU Level of Service F
Analysis Period (min) 15
Description: Note: Phase 7 shows minimum green = 20 while maximum green = 12. Also, phases 1,2,6 show Recall = EXT - I used Min

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

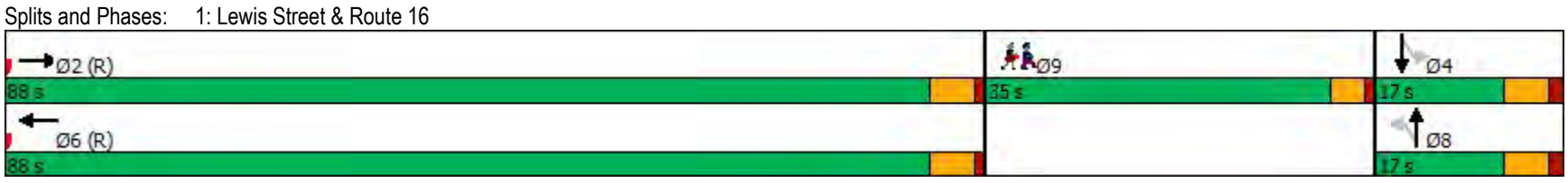
Splits and Phases: 11: Webster Avenue/Garfield Avenue & Route 16

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1958	13	0	1726	6	20	5	9	7	9	16	
Future Volume (vph)	0	1958	13	0	1726	6	20	5	9	7	9	16	
Satd. Flow (prot)	0	2919	0	0	3406	0	0	1639	0	0	1581	0	
Flt Permitted								0.846			0.924		
Satd. Flow (perm)	0	2919	0	0	3406	0	0	1538	0	0	1619	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2115	0	0	2099	0	0	39	0	0	36	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		88.0			88.0		17.0	17.0		17.0	17.0		35.0
Total Lost Time (s)		5.0			5.0			5.5			5.5		
Act Effct Green (s)		109.1			109.1			10.9			10.9		
Actuated g/C Ratio		0.78			0.78			0.08			0.08		
v/c Ratio		0.93			0.79			0.33			0.29		
Control Delay		26.2			19.8			67.8			66.0		
Queue Delay		0.0			0.0			0.0			0.0		
Total Delay		26.2			19.8			67.8			66.0		
LOS		C			B			E			E		
Approach Delay		26.2			19.8			67.8			66.0		
Approach LOS		C			B			E			E		
Queue Length 50th (ft)		302			335			34			32		
Queue Length 95th (ft)		#957			#739			73			68		
Internal Link Dist (ft)		532			675			497			190		
Turn Bay Length (ft)													
Base Capacity (vph)	2275		2655		133		139						
Starvation Cap Reductn	0		0		0		0						
Spillback Cap Reductn	0		0		0		0						
Storage Cap Reductn	0		0		0		0						
Reduced v/c Ratio	0.93		0.79		0.29		0.26						

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 120 (86%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 23.8	Intersection LOS: C
Intersection Capacity Utilization 56.9%	ICU Level of Service B
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lewis Street & Route 16

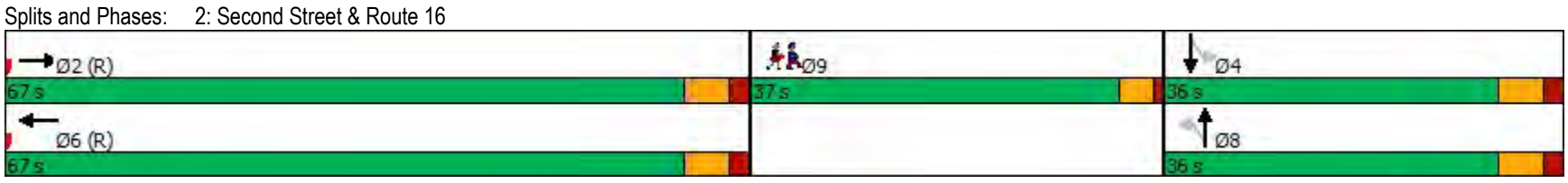


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1605	369	0	1445	77	267	96	13	48	55	20	
Future Volume (vph)	0	1605	369	0	1445	77	267	96	13	48	55	20	
Satd. Flow (prot)	0	4578	0	0	5091	0	1577	1519	0	0	1818	0	
Flt Permitted							0.594	0.744			0.654		
Satd. Flow (perm)	0	4578	0	0	5091	0	1038	1255	0	0	1212	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	2187	0	0	1781	0	213	231	0	0	195	0	
Turn Type		NA			NA		Perm	NA		Perm	NA		
Protected Phases		2			6			8			4		9
Permitted Phases							8			4			
Total Split (s)		67.0			67.0		36.0	36.0		36.0	36.0		37.0
Total Lost Time (s)		6.0			6.0		6.0	6.0			6.0		
Act Effct Green (s)		73.8			73.8		45.4	45.4			45.4		
Actuated g/C Ratio		0.53			0.53		0.32	0.32			0.32		
v/c Ratio		0.91			0.66		0.63	0.57			0.50		
Control Delay		25.5			25.9		50.4	45.9			43.6		
Queue Delay		5.3			0.8		0.0	0.0			0.0		
Total Delay		30.7			26.7		50.4	45.9			43.6		
LOS		C			C		D	D			D		
Approach Delay		30.7			26.7			48.1			43.6		
Approach LOS		C			C			D			D		
Queue Length 50th (ft)		542			270		174	192			144		
Queue Length 95th (ft)		#902			m308		268	276			150		
Internal Link Dist (ft)		675			412			757			460		
Turn Bay Length (ft)							300						
Base Capacity (vph)	2413		2683				336	407			392		
Starvation Cap Reductn	0		533				0	0			0		
Spillback Cap Reductn	190		134				0	0			0		
Storage Cap Reductn	0		0				0	0			0		
Reduced v/c Ratio	0.98		0.83				0.63	0.57			0.50		

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 2 (1%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 31.4	Intersection LOS: C
Intersection Capacity Utilization 67.7%	ICU Level of Service C
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Second Street & Route 16



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations															
Traffic Volume (vph)	38	106	1466	56	45	66	1345	39	23	55	67	30	46	117	
Future Volume (vph)	38	106	1466	56	45	66	1345	39	23	55	67	30	46	117	
Satd. Flow (prot)	0	1745	5047	0	0	1724	4938	0	0	1419	0	0	1401	0	
Flt Permitted		0.950				0.950				*0.800			*0.810		
Satd. Flow (perm)	0	1741	5047	0	0	1712	4938	0	0	1261	0	0	1259	0	
Satd. Flow (RTOR)															
Lane Group Flow (vph)	0	168	1650	0	0	143	1584	0	0	169	0	0	265	0	
Turn Type	Prot	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	5	2		1	1	6			8			4		9
Permitted Phases									8			4			
Total Split (s)	25.0	25.0	52.0		25.0	25.0	52.0		30.0	30.0		30.0	30.0		33.0
Total Lost Time (s)		5.0	5.0			5.0	5.0			6.0			6.0		
Act Effct Green (s)		26.6	58.8			14.7	47.0			45.6			45.6		
Actuated g/C Ratio		0.19	0.42			0.10	0.34			0.33			0.33		
v/c Ratio		0.51	0.78			0.79	0.96			0.41			0.65		
Control Delay		69.0	12.7			91.4	59.2			43.1			50.6		
Queue Delay		0.0	1.8			0.0	0.0			0.0			0.0		
Total Delay		69.0	14.5			91.4	59.2			43.1			50.6		
LOS		E	B			F	E			D			D		
Approach Delay			19.5				61.8			43.1			50.6		
Approach LOS			B				E			D			D		
Queue Length 50th (ft)		93	387			139	479			134			230		
Queue Length 95th (ft)		m159	#632			m175	#601			235			#314		
Internal Link Dist (ft)			412				550			363			385		
Turn Bay Length (ft)	150				225										
Base Capacity (vph)	331	2120			246	1657			411			410			
Starvation Cap Reductn	0	298			0	0			0			0			
Spillback Cap Reductn	0	0			0	0			0			0			
Storage Cap Reductn	0	0			0	0			0			0			
Reduced v/c Ratio	0.51	0.91			0.58	0.96			0.41			0.65			

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 25 (18%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 41.0 Intersection LOS: D
Intersection Capacity Utilization 66.0% ICU Level of Service C
Analysis Period (min) 15

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

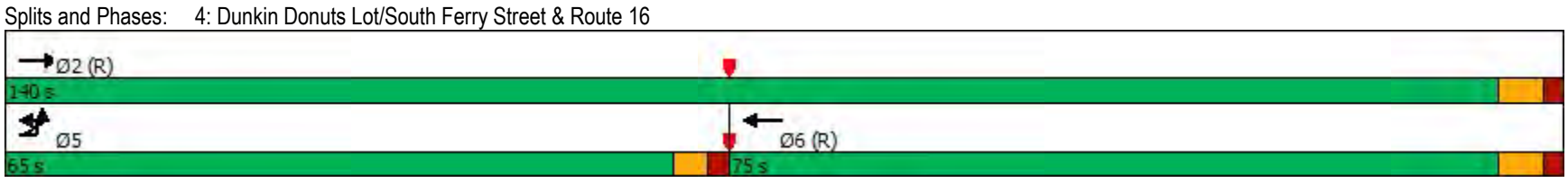
Splits and Phases: 3: Spring Street & Route 16

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	13	277	1318	0	0	1455	73	0	0	20	0	0	0
Future Volume (vph)	13	277	1318	0	0	1455	73	0	0	20	0	0	0
Satd. Flow (prot)	0	1164	3612	0	0	4328	0	0	0	1589	0	0	0
Flt Permitted		0.800											
Satd. Flow (perm)	0	1163	4515	0	0	4328	0	0	0	1589	0	0	0
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	336	1492	0	0	1692	0	0	0	22	0	0	0
Turn Type	Prot	Prot	NA			NA				Perm			
Protected Phases	5	5	2			6							
Permitted Phases										2			
Total Split (s)	65.0	65.0	140.0			75.0				140.0			
Total Lost Time (s)		5.0	6.0			6.0				6.0			
Act Effct Green (s)		60.0	140.0			69.0				140.0			
Actuated g/C Ratio		0.43	1.00			0.49				1.00			
v/c Ratio		0.67	0.41			0.79				0.01			
Control Delay		63.7	2.3			21.3				0.0			
Queue Delay		0.0	0.0			0.2				0.0			
Total Delay		63.7	2.3			21.5				0.0			
LOS		E	A			C				A			
Approach Delay			13.6			21.5							
Approach LOS			B			C							
Queue Length 50th (ft)		391	42			204				0			
Queue Length 95th (ft)		m518	93			251				0			
Internal Link Dist (ft)			550			503			557			380	
Turn Bay Length (ft)	225												
Base Capacity (vph)	498	3612		2133			1589						
Starvation Cap Reductn	0	0		0			0						
Spillback Cap Reductn	0	0		74			0						
Storage Cap Reductn	0	0		0			0						
Reduced v/c Ratio	0.67	0.41		0.82			0.01						

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 20 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 56.4%	ICU Level of Service B
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Dunkin Donuts Lot/South Ferry Street & Route 16



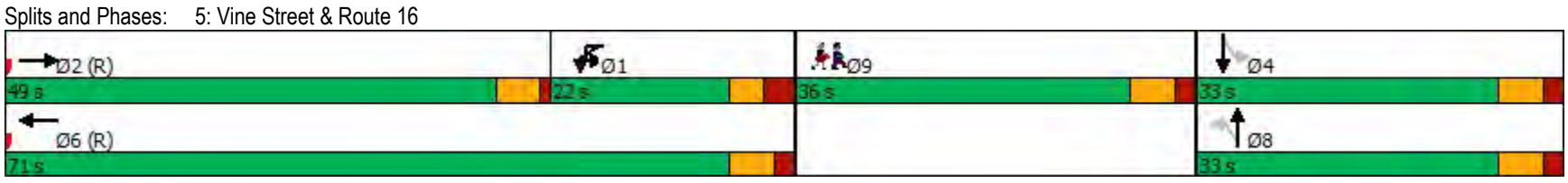
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	0	1262	76	2	17	1332	73	64	112	42	59	104	132	
Future Volume (vph)	0	1262	76	2	17	1332	73	64	112	42	59	104	132	
Satd. Flow (prot)	0	4462	0	0	1504	4922	0	0	1645	0	0	1596	0	
Flt Permitted					0.900				0.734			0.847		
Satd. Flow (perm)	0	4462	0	0	1498	4922	0	0	1224	0	0	1364	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	0	1531	0	0	28	1573	0	0	303	0	0	338	0	
Turn Type		NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases		2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)		49.0		22.0	22.0	71.0		33.0	33.0		33.0	33.0		36.0
Total Lost Time (s)		5.0			6.0	6.0			6.0			6.0		
Act Effct Green (s)		52.8			12.8	65.0			58.2			58.2		
Actuated g/C Ratio		0.38			0.09	0.46			0.42			0.42		
v/c Ratio		0.91			0.20	0.69			0.60			0.60		
Control Delay		34.5			81.5	48.8			39.6			38.9		
Queue Delay		0.4			0.0	3.8			1.4			1.3		
Total Delay		34.9			81.5	52.6			41.0			40.2		
LOS		C			F	D			D			D		
Approach Delay		34.9				53.1			41.0			40.2		
Approach LOS		C				D			D			D		
Queue Length 50th (ft)		~577			27	495			218			243		
Queue Length 95th (ft)		#656			m54	610			330			#523		
Internal Link Dist (ft)		503				521			407			333		
Turn Bay Length (ft)					100									
Base Capacity (vph)	1682			171	2285			508			566			
Starvation Cap Reductn	0			0	611			0			0			
Spillback Cap Reductn	18			0	0			80			89			
Storage Cap Reductn	0			0	0			0			0			
Reduced v/c Ratio	0.92			0.16	0.94			0.71			0.71			

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 40 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 43.6 Intersection LOS: D
Intersection Capacity Utilization 59.0% ICU Level of Service B
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Vine Street & Route 16

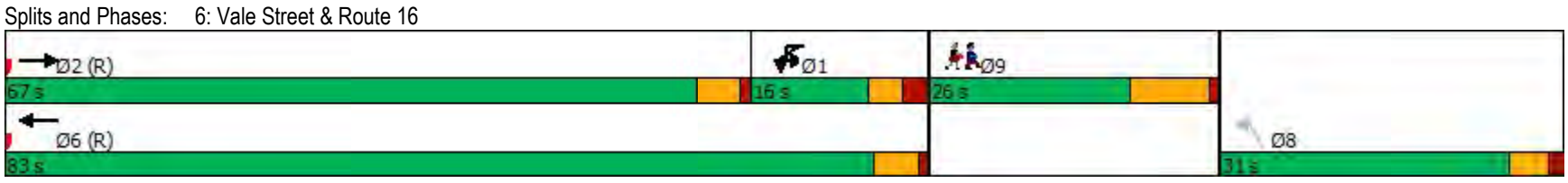


Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR	Ø9
Lane Configurations								
Traffic Volume (vph)	1363	2	20	7	1253	171	0	
Future Volume (vph)	1363	2	20	7	1253	171	0	
Satd. Flow (prot)	4468	0	0	1570	4964	1770	0	
Flt Permitted				0.950		0.950		
Satd. Flow (perm)	4468	0	0	1570	4964	1758	0	
Satd. Flow (RTOR)								
Lane Group Flow (vph)	1496	0	0	45	1450	189	0	
Turn Type	NA		Prot	Prot	NA	Perm		
Protected Phases	2		1	1	6			9
Permitted Phases						8		
Total Split (s)	67.0		16.0	16.0	83.0	31.0		26.0
Total Lost Time (s)	5.0			5.5	5.0	5.0		
Act Effct Green (s)	69.7			30.2	105.5	19.3		
Actuated g/C Ratio	0.50			0.22	0.75	0.14		
v/c Ratio	0.67			0.13	0.39	0.78		
Control Delay	46.0			72.6	21.1	79.2		
Queue Delay	2.5			0.0	0.2	0.0		
Total Delay	48.5			72.6	21.4	79.2		
LOS	D			E	C	E		
Approach Delay	48.5				22.9	79.2		
Approach LOS	D				C	E		
Queue Length 50th (ft)	508			36	377	169		
Queue Length 95th (ft)	563			59	417	243		
Internal Link Dist (ft)	521				488	647		
Turn Bay Length (ft)				150				
Base Capacity (vph)	2225			339	3739	326		
Starvation Cap Reductn	577			0	1236	0		
Spillback Cap Reductn	0			0	443	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.91			0.13	0.58	0.58		

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 126 (90%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 38.3 — Intersection LOS: D
Intersection Capacity Utilization 45.3% — ICU Level of Service A
Analysis Period (min) 15
Description: Note: Splits and offsets need to be optimized via synchro due to lack of coordination data

Splits and Phases: 6: Vale Street & Route 16



Lane Group	EBT	EBR	WBU	WBL	WBT	NEL	NER	Ø9
Lane Configurations								
Traffic Volume (vph)	1363	2	20	7	1253	171	0	
Future Volume (vph)	1363	2	20	7	1253	171	0	
Satd. Flow (prot)	4916	0	0	1711	4916	1711	0	
Flt Permitted				0.950		0.738		
Satd. Flow (perm)	4916	0	0	1711	4916	1329	0	
Satd. Flow (RTOR)								
Lane Group Flow (vph)	1528	0	0	30	1403	191	0	
Turn Type	NA		Prot	Prot	NA	Perm		
Protected Phases	2		1	1	6			9
Permitted Phases						8		
Total Split (s)	63.0		14.0	14.0	77.0	37.0		26.0
Total Lost Time (s)	6.0			6.0	6.0	6.0		
Act Effct Green (s)	91.8			9.9	102.1	25.9		
Actuated g/C Ratio	0.66			0.07	0.73	0.18		
v/c Ratio	0.47			0.25	0.39	0.78		
Control Delay	10.1			45.2	26.2	74.9		
Queue Delay	0.1			0.0	1.7	0.0		
Total Delay	10.2			45.2	27.9	74.9		
LOS	B			D	C	E		
Approach Delay	10.2				28.2	74.9		
Approach LOS	B				C	E		
Queue Length 50th (ft)	20			27	397	166		
Queue Length 95th (ft)	383			m34	m372	248		
Internal Link Dist (ft)	488				406	275		
Turn Bay Length (ft)								
Base Capacity (vph)	3222			122	3584	294		
Starvation Cap Reductn	311			0	1928	0		
Spillback Cap Reductn	369			0	0	0		
Storage Cap Reductn	0			0	0	0		
Reduced v/c Ratio	0.54			0.25	0.85	0.65		

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 100 (71%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 22.3 Intersection LOS: C
Intersection Capacity Utilization 46.9% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Boston Street & Route 16

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	175	1153	176	56	1095	12	178	145	49	74	168	79	
Future Volume (vph)	175	1153	176	56	1095	12	178	145	49	74	168	79	
Satd. Flow (prot)	1728	4844	0	1711	4951	0	1745	1757	0	1728	1710	0	
Flt Permitted	0.950			0.950			0.445			0.499			
Satd. Flow (perm)	1728	4844	0	1709	4951	0	809	1757	0	903	1710	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	215	1488	0	105	1253	0	211	244	0	99	285	0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	6			8			4		9
Permitted Phases							8			4			
Total Split (s)	39.0	56.7		25.0	42.7		25.3	25.3		25.3	25.3		33.0
Total Lost Time (s)	5.5	5.0		5.5	5.0		6.0	6.0		6.0	6.0		
Act Effct Green (s)	33.5	51.7		19.5	37.7		47.5	47.5		47.5	47.5		
Actuated g/C Ratio	0.24	0.37		0.14	0.27		0.34	0.34		0.34	0.34		
v/c Ratio	0.52	0.83		0.44	0.94		0.77	0.41		0.32	0.49		
Control Delay	51.7	24.3		68.9	49.0		61.4	40.5		41.4	42.2		
Queue Delay	0.0	32.9		0.0	0.0		0.6	0.0		0.0	0.1		
Total Delay	51.7	57.2		68.9	49.0		62.0	40.5		41.4	42.2		
LOS	D	E		E	D		E	D		D	D		
Approach Delay		56.5			50.6			50.4			42.0		
Approach LOS		E			D			D			D		
Queue Length 50th (ft)	125	520		67	428		162	161		63	194		
Queue Length 95th (ft)	247	576		73	#517		#392	273		122	#390		
Internal Link Dist (ft)		406			387			396			538		
Turn Bay Length (ft)	150			100			100			100			
Base Capacity (vph)	413	1788		238	1333		274	596		306	579		
Starvation Cap Reductn	0	390		0	0		0	0		0	0		
Spillback Cap Reductn	0	0		0	0		5	0		0	11		
Storage Cap Reductn	0	0		0	0		0	0		0	0		
Reduced v/c Ratio	0.52	1.06		0.44	0.94		0.78	0.41		0.32	0.50		

Intersection Summary

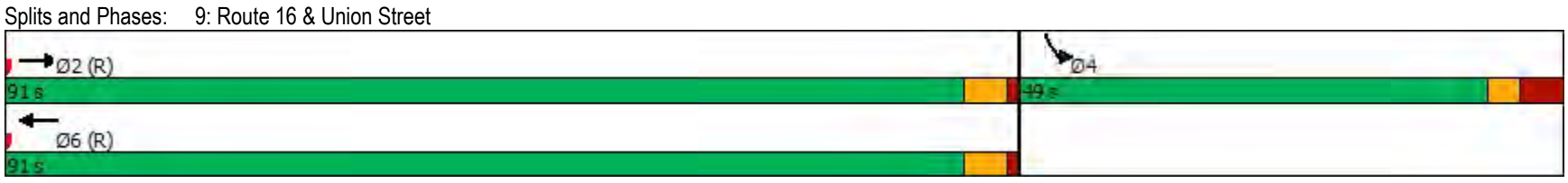
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 52.3 Intersection LOS: D
Intersection Capacity Utilization 82.9% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Everett Avenue & Route 16

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1277	1199	183	153	4
Future Volume (vph)	0	1277	1199	183	153	4
Satd. Flow (prot)	0	4964	4858	0	1788	0
Flt Permitted					0.953	
Satd. Flow (perm)	0	4964	4858	0	1788	0
Satd. Flow (RTOR)						
Lane Group Flow (vph)	0	1356	1531	0	207	0
Turn Type		NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases						
Total Split (s)		91.0	91.0		49.0	
Total Lost Time (s)		5.0	5.0		7.0	
Act Effct Green (s)		107.2	107.2		20.8	
Actuated g/C Ratio		0.77	0.77		0.15	
v/c Ratio		0.36	0.41		0.78	
Control Delay		19.3	2.5		76.7	
Queue Delay		0.0	0.2		0.0	
Total Delay		19.3	2.6		76.7	
LOS		B	A		E	
Approach Delay		19.3	2.6		76.7	
Approach LOS		B	A		E	
Queue Length 50th (ft)		429	19		184	
Queue Length 95th (ft)		474	110		218	
Internal Link Dist (ft)		219	319		460	
Turn Bay Length (ft)						
Base Capacity (vph)	3801	3719	536			
Starvation Cap Reductn	0	1079	0			
Spillback Cap Reductn	172	0	0			
Storage Cap Reductn	0	0	0			
Reduced v/c Ratio	0.37	0.58	0.39			

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 60 (43%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 14.9	Intersection LOS: B
Intersection Capacity Utilization 47.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: Route 16 & Union Street



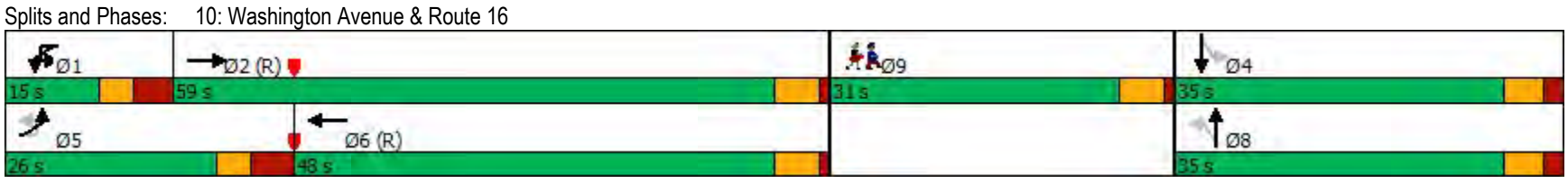
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	205	1077	148	17	85	1164	36	100	116	44	49	154	118	
Future Volume (vph)	205	1077	148	17	85	1164	36	100	116	44	49	154	118	
Satd. Flow (prot)	1745	4863	0	0	1745	4941	0	1752	1773	0	1770	1725	0	
Flt Permitted	0.950				0.950			*0.450			0.418			
Satd. Flow (perm)	1734	4863	0	0	1736	4941	0	821	1773	0	774	1725	0	
Satd. Flow (RTOR)														
Lane Group Flow (vph)	230	1402	0	0	138	1274	0	132	232	0	57	334	0	
Turn Type	Prot	NA		Prot	Prot	NA		Perm	NA		Perm	NA		
Protected Phases	5	2		1	1	6			8			4		9
Permitted Phases								8			4			
Total Split (s)	26.0	59.0		15.0	15.0	48.0		35.0	35.0		35.0	35.0		31.0
Total Lost Time (s)	7.0	5.0			6.5	5.0		5.5	5.5		5.5	5.5		
Act Effct Green (s)	37.7	64.1			17.0	43.0		32.6	32.6		32.6	32.6		
Actuated g/C Ratio	0.27	0.46			0.12	0.31		0.23	0.23		0.23	0.23		
v/c Ratio	0.49	0.63			0.65	0.84		0.69	0.56		0.32	0.83		
Control Delay	56.3	13.1			73.4	51.4		67.7	52.3		48.1	68.6		
Queue Delay	0.0	0.7			0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	56.3	13.9			73.4	51.4		67.7	52.3		48.1	68.6		
LOS	E	B			E	D		E	D		D	E		
Approach Delay		19.9				53.5			57.9			65.6		
Approach LOS		B				D			E			E		
Queue Length 50th (ft)	117	79			119	397		109	186		43	288		
Queue Length 95th (ft)	#374	525			#238	458		152	200		82	358		
Internal Link Dist (ft)		319				1066			414			597		
Turn Bay Length (ft)	100				150			150			150			
Base Capacity (vph)	469	2227			212	1517		196	424		185	413		
Starvation Cap Reductn	0	454			0	0		0	0		0	0		
Spillback Cap Reductn	0	0			0	0		0	0		0	0		
Storage Cap Reductn	0	0			0	0		0	0		0	0		
Reduced v/c Ratio	0.49	0.79			0.65	0.84		0.67	0.55		0.31	0.81		

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 70 (50%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 40.7 Intersection LOS: D
Intersection Capacity Utilization 81.2% ICU Level of Service D
Analysis Period (min) 15

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Washington Avenue & Route 16



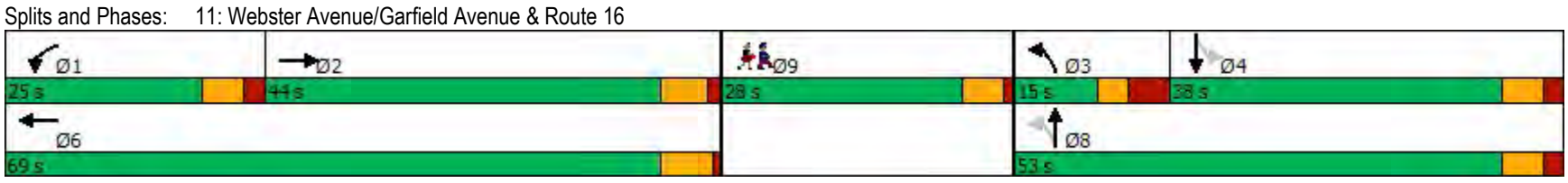
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	1120	145	132	1169	23	250	216	185	175	159	170	
Future Volume (vph)	0	1120	145	132	1169	23	250	216	185	175	159	170	
Satd. Flow (prot)	0	4886	0	1685	4778	0	1787	1904	0	1787	1891	0	
Flt Permitted				0.950			*0.700			*0.700			
Satd. Flow (perm)	0	4886	0	1685	4778	0	1314	1904	0	1303	1891	0	
Satd. Flow (RTOR)													
Lane Group Flow (vph)	0	1329	0	151	1320	0	280	459	0	205	385	0	
Turn Type		NA		Prot	NA		pm+pt	NA		Perm	NA		
Protected Phases		2		1	6		3	8			4		9
Permitted Phases							8			4			
Total Split (s)		44.0		25.0	69.0		15.0	53.0		38.0	38.0		28.0
Total Lost Time (s)		6.0		6.0	6.0		7.0	6.0		6.0	6.0		
Act Effct Green (s)		38.2		19.1	63.4		45.2	46.2		31.1	31.1		
Actuated g/C Ratio		0.30		0.15	0.50		0.36	0.37		0.25	0.25		
v/c Ratio		0.89		0.59	0.55		0.56	0.66		0.64	0.82		
Control Delay		51.0		61.6	23.5		37.6	39.7		53.7	60.7		
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		51.0		61.6	23.5		37.6	39.7		53.7	60.7		
LOS		D		E	C		D	D		D	E		
Approach Delay		51.0			27.4			38.9			58.3		
Approach LOS		D			C			D			E		
Queue Length 50th (ft)		362		112	245		162	290		142	282		
Queue Length 95th (ft)		#591		#228	405		306	523		269	#532		
Internal Link Dist (ft)		409			879			820			473		
Turn Bay Length (ft)				100			150			100			
Base Capacity (vph)	1486		256	2411		502	716		333	485			
Starvation Cap Reductn	0		0	0		0	0		0	0			
Spillback Cap Reductn	0		0	0		0	0		0	0			
Storage Cap Reductn	0		0	0		0	0		0	0			
Reduced v/c Ratio	0.89		0.59	0.55		0.56	0.64		0.62	0.79			

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 125.6
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 41.5 Intersection LOS: D
Intersection Capacity Utilization 87.8% ICU Level of Service E
Analysis Period (min) 15
Description: Note: Phase 7 shows minimum green = 20 while maximum green = 12. Also, phases 1,2,6 show Recall = EXT - I used Min

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Webster Avenue/Garfield Avenue & Route 16



Arterial Level of Service: EB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Lewis Street	III	35	15.6	35.9	51.5	0.12	8.1	F
Second Street	III	35	18.3	32.3	50.6	0.14	10.2	E
Spring Street	III	35	12.6	24.0	36.6	0.09	9.2	F
Dunkin Donuts Lot	III	35	16.1	1.4	17.5	0.12	24.5	B
Vine Street	III	35	14.9	63.6	78.5	0.11	5.1	F
Vale Street	III	35	15.4	1.7	17.1	0.11	24.0	C
Boston Street	III	35	14.5	19.1	33.6	0.11	11.5	E
Everett Avenue	III	35	12.4	46.4	58.8	0.09	5.6	F
Union Street	III	35	32.0	3.3	35.3	0.27	27.2	B
Washington Avenue	III	35	10.2	28.0	38.2	0.08	7.1	F
Webster Avenue	III	35	37.2	57.8	95.0	0.31	11.7	E
Total	III		199.2	313.5	512.7	1.55	10.9	E

Arterial Level of Service: WB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Garfield Avenue	III	35	21.8	35.4	57.2	0.18	11.4	E
Washington Avenue	III	35	37.2	43.3	80.5	0.31	13.8	E
Union Street	III	35	10.2	2.2	12.4	0.08	21.9	C
Everett Avenue	III	35	32.0	48.4	80.4	0.27	11.9	E
Boston Street	III	35	12.4	7.2	19.6	0.09	16.9	D
Vale Street	III	35	14.5	7.9	22.4	0.11	17.3	D
Vine Street	III	35	15.4	28.9	44.3	0.11	9.2	F
South Ferry Street	III	35	14.9	17.6	32.5	0.11	12.2	E
Spring Street	III	35	16.1	25.4	41.5	0.12	10.4	E
Second Street	III	35	12.6	34.7	47.3	0.09	7.1	F
Lewis Street	III	35	18.3	26.0	44.3	0.14	11.6	E
Total	III		205.4	277.0	482.4	1.61	12.0	E

Arterial Level of Service: EB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Lewis Street	III	35	15.6	89.5	105.1	0.12	4.0	F
Second Street	III	35	18.3	37.0	55.3	0.14	9.3	F
Spring Street	III	35	12.6	47.6	60.2	0.09	5.6	F
Dunkin Donuts Lot	III	35	16.1	5.7	21.8	0.12	19.7	C
Vine Street	III	35	14.9	99.7	114.6	0.11	3.5	F
Vale Street	III	35	15.4	22.9	38.3	0.11	10.7	E
Boston Street	III	35	14.5	10.2	24.7	0.11	15.7	D
Everett Avenue	III	35	12.4	34.5	46.9	0.09	7.1	F
Union Street	III	35	32.0	10.6	42.6	0.27	22.5	C
Washington Avenue	III	35	10.2	82.1	92.3	0.08	2.9	F
Webster Avenue	III	35	37.2	70.4	107.6	0.31	10.4	E
Total	III		199.2	510.2	709.4	1.55	7.9	F

Arterial Level of Service: WB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Garfield Avenue	III	35	21.8	38.7	60.5	0.18	10.8	E
Washington Avenue	III	35	37.2	57.8	95.0	0.31	11.7	E
Union Street	III	35	10.2	1.9	12.1	0.08	22.5	C
Everett Avenue	III	35	32.0	52.0	84.0	0.27	11.4	E
Boston Street	III	35	12.4	6.6	19.0	0.09	17.4	D
Vale Street	III	35	14.5	10.5	25.0	0.11	15.5	D
Vine Street	III	35	15.4	47.7	63.1	0.11	6.5	F
South Ferry Street	III	35	14.9	24.1	39.0	0.11	10.2	E
Spring Street	III	35	16.1	76.2	92.3	0.12	4.7	F
Second Street	III	35	12.6	7.9	20.5	0.09	16.4	D
Lewis Street	III	35	18.3	34.8	53.1	0.14	9.7	F
Total	III		205.4	358.2	563.6	1.61	10.3	E

Arterial Level of Service: EB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Lewis Street	III	35	15.6	21.2	36.8	0.12	11.3	E
Second Street	III	35	18.3	52.1	70.4	0.14	7.3	F
Spring Street	III	35	12.6	13.9	26.5	0.09	12.7	E
Dunkin Donuts Lot	III	35	16.1	4.2	20.3	0.12	21.2	C
Vine Street	III	35	14.9	58.2	73.1	0.11	5.4	F
Vale Street	III	35	15.4	16.1	31.5	0.11	13.0	E
Boston Street	III	35	14.5	7.8	22.3	0.11	17.4	D
Everett Avenue	III	35	12.4	29.1	41.5	0.09	8.0	F
Union Street	III	35	32.0	1.4	33.4	0.27	28.7	B
Washington Avenue	III	35	10.2	16.3	26.5	0.08	10.3	E
Webster Avenue	III	35	37.2	64.8	102.0	0.31	10.9	E
Total	III		199.2	285.1	484.3	1.55	11.5	E

Arterial Level of Service: WB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Garfield Avenue	III	35	21.8	24.0	45.8	0.18	14.3	D
Washington Avenue	III	35	37.2	42.8	80.0	0.31	13.9	E
Union Street	III	35	10.2	2.4	12.6	0.08	21.6	C
Everett Avenue	III	35	32.0	75.8	107.8	0.27	8.9	F
Boston Street	III	35	12.4	5.7	18.1	0.09	18.3	C
Vale Street	III	30	15.2	9.8	25.0	0.11	15.5	D
Vine Street	III	35	15.4	26.6	42.0	0.11	9.8	F
South Ferry Street	III	35	14.9	12.9	27.8	0.11	14.3	D
Spring Street	III	35	16.1	26.1	42.2	0.12	10.2	E
Second Street	III	35	12.6	16.0	28.6	0.09	11.7	E
Lewis Street	III	35	18.3	30.3	48.6	0.14	10.6	E
Total	III		206.1	272.4	478.5	1.61	12.1	E

Arterial Level of Service: EB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Lewis Street	III	35	15.6	26.2	41.8	0.12	10.0	F
Second Street	III	35	18.3	25.5	43.8	0.14	11.8	E
Spring Street	III	35	12.6	12.7	25.3	0.09	13.3	E
Dunkin Donuts Lot	III	35	16.1	2.3	18.4	0.12	23.3	C
Vine Street	III	35	14.9	34.5	49.4	0.11	8.0	F
Vale Street	III	35	15.4	46.0	61.4	0.11	6.7	F
Boston Street	III	35	14.5	10.1	24.6	0.11	15.7	D
Everett Avenue	III	35	12.4	24.3	36.7	0.09	9.0	F
Union Street	III	35	32.0	19.3	51.3	0.27	18.7	C
Washington Avenue	III	35	10.2	13.1	23.3	0.08	11.7	E
Webster Avenue	III	35	37.2	51.0	88.2	0.31	12.6	E
Total	III		199.2	265.0	464.2	1.55	12.0	E

Arterial Level of Service: WB Route 16

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Garfield Avenue	III	35	21.8	23.5	45.3	0.18	14.4	D
Washington Avenue	III	35	37.2	51.4	88.6	0.31	12.6	E
Union Street	III	35	10.2	2.5	12.7	0.08	21.4	C
Everett Avenue	III	35	32.0	49.0	81.0	0.27	11.8	E
Boston Street	III	35	12.4	26.2	38.6	0.09	8.6	F
Vale Street	III	30	15.2	21.1	36.3	0.11	10.7	E
Vine Street	III	35	15.4	48.8	64.2	0.11	6.4	F
South Ferry Street	III	35	14.9	21.3	36.2	0.11	11.0	E
Spring Street	III	35	16.1	59.2	75.3	0.12	5.7	F
Second Street	III	35	12.6	25.9	38.5	0.09	8.7	F
Lewis Street	III	35	18.3	19.8	38.1	0.14	13.5	E
Total	III		206.1	348.7	554.8	1.61	10.5	E