



Appendix A

PRELIMINARY COST ESTIMATES

Planning Level Cost Estimates

Planning level cost estimates are listed in 2016 dollars for each improvement option. The planning level costs include estimates for right-of-way, preliminary engineering, construction engineering, construction, and indirect costs (IDC). In addition, an inflationary factor of 3 percent per year was applied to the planning level costs to account for estimated year of expenditure. Construction cost estimates were based on unit quantity estimates and price information determined from the MDT Preliminary Estimating Tool (PET) and MDT Road Design Cost Estimate Spreadsheet (Jun 2016). Cost ranges are provided in some cases, indicating unknown factors at the particular planning level stage.

1. BROADWAY STREET INTERSECTION IMPROVEMENTS

TRAFFIC SIGNAL WITH EASTBOUND AND WESTBOUND LEFT-TURN LANES \$ 1,600,000 TOT

LENGTH (FT)	1320
WIDTH (FT)	38
SURFACING (IN)	5
BASE (IN)	0

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
COVER - TYPE 1	SQYD	\$ 0.54	5574.00	\$ 3,010
PLANT MIX BIT SURF GR S-3/4 IN	TON	\$ 30.74	1492.03	\$ 45,865
ASPHALT CEMENT PG 64-28	TON	\$ 685.62	80.57	\$ 55,240
EMULS ASPHALT CRS-2P	TON	\$ 613.48	10.00	\$ 6,135
COLD MILLING	SQYD	\$ 1.42	5573.33	\$ 7,914
SIGNS - URBAN	MI	\$ 52,000.00	0.25	\$ 13,000
STRIPING & PAVEMENT MARKINGS - URBAN	MI	\$ 20,000.00	0.25	\$ 5,000
DRAINAGE PIPE - URBAN	MI	\$ 240,000.00	0.25	\$ 60,000
LIGHTS - URBAN	MI	\$ 175,000.00	0.25	\$ 43,750
SIDEWALK-CONCRETE 4"	SQYD	\$ 57.78	183.33	\$ 10,593
CURB AND GUTTER-CONC	LNFT	\$ 18.15	330.00	\$ 5,990
SIGNALS	EACH	\$ 275,000.00	1.00	\$ 275,000
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$ 79,725
TRAFFIC CONTROL			5%	\$ 30,561
	<i>Subtotal 1</i>			\$ 641,782
MOBILIZATION			10%	\$ 64,178
	<i>Subtotal 2</i>			\$ 705,961
CONTINGENCIES			20%	\$ 141,192
	<i>Subtotal 3</i>			\$ 847,153
MID-TERM INFLATION	% PER YEAR	3%	10	\$ 291,350
	<i>Subtotal 4</i>			\$ 1,138,502
CONSTRUCTION ENGINEERING (CE)			10%	\$ 113,850
PRELIMINARY ENGINEERING (PE)			10%	\$ 113,850
	<i>Subtotal 5</i>			\$ 1,366,203
INDIRECT COSTS (IDC)			10.91%	\$ 149,053
ESTIMATED RIGHT-OF-WAY	ACRE	\$ 100,000.00	0.00	\$ -
TOTAL				\$ 1,515,256

⁽¹⁾ Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

TRAFFIC SIGNAL WITHOUT EASTBOUND AND WESTBOUND LEFT-TURN LANES \$ 1,300,000 TOT

LENGTH (FT)	800
WIDTH (FT)	38
SURFACING (IN)	5
BASE (IN)	0

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
COVER - TYPE 1	SQYD	\$ 0.54	3344.00	\$ 1,806
PLANT MIX BIT SURF GR S-3/4 IN	TON	\$ 30.74	895.22	\$ 27,519
ASPHALT CEMENT PG 64-28	TON	\$ 685.62	48.34	\$ 33,144
EMULS ASPHALT CRS-2P	TON	\$ 613.48	6.00	\$ 3,681
COLD MILLING	SQYD	\$ 1.42	3377.78	\$ 4,796
SIGNS - URBAN	MI	\$ 52,000.00	0.15	\$ 7,879
STRIPING & PAVEMENT MARKINGS - URBAN	MI	\$ 20,000.00	0.15	\$ 3,030
DRAINAGE PIPE - URBAN	MI	\$ 240,000.00	0.15	\$ 36,364
LIGHTS - URBAN	MI	\$ 175,000.00	0.15	\$ 26,515
SIDEWALK-CONCRETE 4"	SQYD	\$ 57.78	111.11	\$ 6,420
CURB AND GUTTER-CONC	LNFT	\$ 18.15	200.00	\$ 3,630
SIGNALS	EACH	\$ 275,000.00	1.00	\$ 275,000
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$ 64,468
TRAFFIC CONTROL			5%	\$ 24,713
	<i>Subtotal 1</i>			\$ 518,964
MOBILIZATION			10%	\$ 51,896
	<i>Subtotal 2</i>			\$ 570,861
CONTINGENCIES			20%	\$ 114,172
	<i>Subtotal 3</i>			\$ 685,033
MID-TERM INFLATION	% PER YEAR	3%	10	\$ 235,594

	<i>Subtotal 4</i>			\$	920,627
CONSTRUCTION ENGINEERING (CE)				10%	\$ 92,063
PRELIMINARY ENGINEERING (PE)				10%	\$ 92,063
	<i>Subtotal 5</i>				\$ 1,104,752
INDIRECT COSTS (IDC)				10.91%	\$ 120,528
ESTIMATED RIGHT-OF-WAY		ACRE	\$ 100,000.00	0.00	\$ -
	TOTAL				\$ 1,225,280

⁽¹⁾ Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

SINGLE LANE ROUNDABOUT **\$ 2,300,000 TOT**

				LENGTH (FT)	1320
				WIDTH (FT)	38
				SURFACING (IN)	5
				BASE (IN)	0
TYPE	UNITS	UNIT PRICE	QUANTITY	COST	
COVER - TYPE 1	SQYD	\$ 0.54	5574.00	\$ 3,010	
PLANT MIX BIT SURF GR S-3/4 IN	TON	\$ 30.74	1492.03	\$ 45,865	
ASPHALT CEMENT PG 64-28	TON	\$ 685.62	80.57	\$ 55,240	
EMULS ASPHALT CRS-2P	TON	\$ 613.48	10.00	\$ 6,135	
COLD MILLING	SQYD	\$ 1.42	5573.33	\$ 7,914	
SIGNS - URBAN	MI	\$ 52,000.00	0.25	\$ 13,000	
STRIPING & PAVEMENT MARKINGS - URBAN	MI	\$ 20,000.00	0.25	\$ 5,000	
DRAINAGE PIPE - URBAN	MI	\$ 240,000.00	0.25	\$ 60,000	
LIGHTS - URBAN	MI	\$ 175,000.00	0.25	\$ 43,750	
SIDEWALK-CONCRETE 4"	SQYD	\$ 57.78	183.33	\$ 10,593	
CURB AND GUTTER-CONC	LNFT	\$ 18.15	330.00	\$ 5,990	
CONCRETE ROUNDABOUT - ONE LANE	EACH	\$ 500,000.00	1.00	\$ 500,000	
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$ 113,475	
TRAFFIC CONTROL			5%	\$ 43,499	
	<i>Subtotal 1</i>			\$ 913,470	
MOBILIZATION			10%	\$ 91,347	
	<i>Subtotal 2</i>			\$ 1,004,817	
CONTINGENCIES			20%	\$ 200,963	
	<i>Subtotal 3</i>			\$ 1,205,780	
MID-TERM INFLATION	% PER YEAR	3%	10	\$ 414,688	
	<i>Subtotal 4</i>			\$ 1,620,468	
CONSTRUCTION ENGINEERING (CE)			10%	\$ 162,047	
PRELIMINARY ENGINEERING (PE)			10%	\$ 162,047	
	<i>Subtotal 5</i>			\$ 1,944,561	
INDIRECT COSTS (IDC)			10.91%	\$ 212,152	
ESTIMATED RIGHT-OF-WAY	ACRE	\$ 100,000.00	0.50	\$ 50,000	
	TOTAL			\$ 2,206,713	

⁽¹⁾ Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

2. OREGON STREET INTERSECTION IMPROVEMENTS

ALL-WAY STOP **\$ 800,000 TOT**

				LENGTH (FT)	1000
				WIDTH (FT)	24
				SURFACING (IN)	5
				BASE (IN)	12
TYPE	UNITS	UNIT PRICE	QUANTITY	COST	
EXCAVATION-UNCLASSIFIED	CUYD	\$ 4.35	2277.60	\$ 9,908	
CRUSHED AGGREGATE COURSE	CUYD	\$ 21.69	925.93	\$ 20,083	
COVER - TYPE 1	SQYD	\$ 0.54	2334.00	\$ 1,260	
PLANT MIX BIT SURF GR S-3/4 IN	TON	\$ 30.74	624.65	\$ 19,202	
ASPHALT CEMENT PG 64-28	TON	\$ 685.62	33.73	\$ 23,127	
EMULS ASPHALT CRS-2P	TON	\$ 613.48	4.20	\$ 2,577	
SIGNS - URBAN	MI	\$ 52,000.00	0.19	\$ 9,848	
STRIPING & PAVEMENT MARKINGS - URBAN	MI	\$ 20,000.00	0.19	\$ 3,788	
DRAINAGE PIPE - URBAN	MI	\$ 240,000.00	0.19	\$ 45,455	
LIGHTS - URBAN	MI	\$ 175,000.00	0.19	\$ 33,144	
SIDEWALK-CONCRETE 4"	SQYD	\$ 57.78	888.89	\$ 51,360	
SIDEWALK-CONCRETE 6"	SQYD	\$ 57.78	222.22	\$ 12,840	
CURB AND GUTTER-CONC	LNFT	\$ 18.15	2000.00	\$ 36,300	
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$ 40,334	
TRAFFIC CONTROL			5%	\$ 15,461	
	<i>Subtotal 1</i>			\$ 324,686	
MOBILIZATION			10%	\$ 32,469	
	<i>Subtotal 2</i>			\$ 357,155	
CONTINGENCIES			20%	\$ 71,431	
	<i>Subtotal 3</i>			\$ 428,586	
MID-TERM INFLATION	% PER YEAR	3%	10	\$ 147,398	
	<i>Subtotal 4</i>			\$ 575,984	
CONSTRUCTION ENGINEERING (CE)			10%	\$ 57,598	

PRELIMINARY ENGINEERING (PE)			10%	\$	57,598
	<i>Subtotal 5</i>			\$	691,180
INDIRECT COSTS (IDC)			10.91%	\$	75,408
ESTIMATED RIGHT-OF-WAY		ACRE		\$	25,000
	TOTAL			\$	791,588

⁽¹⁾ Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

TRAFFIC SIGNAL **\$ 1,800,000 TOT**

			LENGTH (FT)	1000	
			WIDTH (FT)	38	
			SURFACING (IN)	5	
			BASE (IN)	12	
TYPE	UNITS	UNIT PRICE	QUANTITY	COST	
EXCAVATION-UNCLASSIFIED	CUYD	\$ 4.35	3012.17	\$ 13,103	
CRUSHED AGGREGATE COURSE	CUYD	\$ 21.69	1444.44	\$ 31,330	
COVER - TYPE 1	SQYD	\$ 0.54	3889.00	\$ 2,100	
PLANT MIX BIT SURF GR S-3/4 IN	TON	\$ 30.74	1041.09	\$ 32,003	
ASPHALT CEMENT PG 64-28	TON	\$ 685.62	56.22	\$ 38,545	
EMULS ASPHALT CRS-2P	TON	\$ 613.48	7.00	\$ 4,294	
SIGNS - URBAN	MI	\$ 52,000.00	0.19	\$ 9,848	
STRIPING & PAVEMENT MARKINGS - URBAN	MI	\$ 20,000.00	0.19	\$ 3,788	
DRAINAGE PIPE - URBAN	MI	\$ 240,000.00	0.19	\$ 45,455	
LIGHTS - URBAN	MI	\$ 175,000.00	0.19	\$ 33,144	
SIDEWALK-CONCRETE 4"	SQYD	\$ 57.78	888.89	\$ 51,360	
SIDEWALK-CONCRETE 6"	SQYD	\$ 57.78	222.22	\$ 12,840	
CURB AND GUTTER-CONC	LNFT	\$ 18.15	2000.00	\$ 36,300	
SIGNALS	EACH	\$ 275,000.00	1.00	\$ 275,000	
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$ 88,366	
TRAFFIC CONTROL			5%	\$ 33,874	
	<i>Subtotal 1</i>			\$ 711,350	
MOBILIZATION			10%	\$ 71,135	
	<i>Subtotal 2</i>			\$ 782,485	
CONTINGENCIES			20%	\$ 156,497	
	<i>Subtotal 3</i>			\$ 938,982	
MID-TERM INFLATION	% PER YEAR	3%	10	\$ 322,931	
	<i>Subtotal 4</i>			\$ 1,261,914	
CONSTRUCTION ENGINEERING (CE)			10%	\$ 126,191	
PRELIMINARY ENGINEERING (PE)			10%	\$ 126,191	
	<i>Subtotal 5</i>			\$ 1,514,296	
INDIRECT COSTS (IDC)			10.91%	\$ 165,210	
ESTIMATED RIGHT-OF-WAY		ACRE		\$ 25,000	
	TOTAL			\$ 1,704,506	

⁽¹⁾ Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

SINGLE LANE ROUNDABOUT **\$ 2,400,000 TOT**

			LENGTH (FT)	1000	
			WIDTH (FT)	38	
			SURFACING (IN)	5	
			BASE (IN)	12	
TYPE	UNITS	UNIT PRICE	QUANTITY	COST	
EXCAVATION-UNCLASSIFIED	CUYD	\$ 4.35	3012.17	\$ 13,103	
CRUSHED AGGREGATE COURSE	CUYD	\$ 21.69	1444.44	\$ 31,330	
COVER - TYPE 1	SQYD	\$ 0.54	3889.00	\$ 2,100	
PLANT MIX BIT SURF GR S-3/4 IN	TON	\$ 30.74	1041.09	\$ 32,003	
ASPHALT CEMENT PG 64-28	TON	\$ 685.62	56.22	\$ 38,545	
EMULS ASPHALT CRS-2P	TON	\$ 613.48	7.00	\$ 4,294	
SIGNS - URBAN	MI	\$ 52,000.00	0.19	\$ 9,848	
STRIPING & PAVEMENT MARKINGS - URBAN	MI	\$ 20,000.00	0.19	\$ 3,788	
DRAINAGE PIPE - URBAN	MI	\$ 240,000.00	0.19	\$ 45,455	
LIGHTS - URBAN	MI	\$ 175,000.00	0.19	\$ 33,144	
SIDEWALK-CONCRETE 4"	SQYD	\$ 57.78	888.89	\$ 51,360	
SIDEWALK-CONCRETE 6"	SQYD	\$ 57.78	222.22	\$ 12,840	
CURB AND GUTTER-CONC	LNFT	\$ 18.15	2000.00	\$ 36,300	
CONCRETE ROUNDABOUT - ONE LANE	EACH	\$ 500,000.00	1.00	\$ 500,000	
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$ 122,116	
TRAFFIC CONTROL			5%	\$ 46,811	
	<i>Subtotal 1</i>			\$ 983,038	
MOBILIZATION			10%	\$ 98,304	
	<i>Subtotal 2</i>			\$ 1,081,342	
CONTINGENCIES			20%	\$ 216,268	
	<i>Subtotal 3</i>			\$ 1,297,610	
MID-TERM INFLATION	% PER YEAR	3%	10	\$ 446,269	
	<i>Subtotal 4</i>			\$ 1,743,879	
CONSTRUCTION ENGINEERING (CE)			10%	\$ 174,388	
PRELIMINARY ENGINEERING (PE)			10%	\$ 174,388	

	<i>Subtotal 5</i>			\$	2,092,655
INDIRECT COSTS (IDC)				10.91%	\$ 228,309
ESTIMATED RIGHT-OF-WAY	ACRE	\$	100,000.00	0.25	\$ 25,000
	TOTAL				\$ 2,345,964

⁽¹⁾ Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

3. AIRPORT ROAD INTERSECTION IMPROVEMENTS

EASTBOUND LEFT-TURN LANE				\$	900,000	TOT
			LENGTH (FT) ⁽²⁾		1500	
			WIDTH (FT)		52	
			SURFACING (IN)		5	
			BASE (IN)		12	
TYPE	UNITS	UNIT PRICE	QUANTITY		COST	
EXCAVATION-UNCLASSIFIED	CUYD	\$ 4.35	6052.42	\$	26,328	
CRUSHED AGGREGATE COURSE	CUYD	\$ 21.69	3586.57	\$	77,793	
COVER - TYPE 1	SQYD	\$ 0.54	8667.00	\$	4,680	
PLANT MIX BIT SURF GR S-3/4 IN	TON	\$ 30.74	2447.49	\$	75,236	
ASPHALT CEMENT PG 64-28	TON	\$ 685.62	132.16	\$	90,614	
EMULS ASPHALT CRS-2P	TON	\$ 613.48	15.50	\$	9,509	
SIGNS - RURAL	MI	\$ 8,000.00	0.28	\$	2,273	
STRIPING & PAVEMENT MARKINGS - RURAL	MI	\$ 8,000.00	0.28	\$	2,273	
DRAINAGE PIPE - RURAL	MI	\$ 82,000.00	0.28	\$	23,295	
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$	46,800	
TRAFFIC CONTROL			5%	\$	17,940	
	<i>Subtotal 1</i>			\$	376,741	
MOBILIZATION			10%	\$	37,674	
	<i>Subtotal 2</i>			\$	414,415	
CONTINGENCIES			20%	\$	82,883	
	<i>Subtotal 3</i>			\$	497,298	
MID-TERM INFLATION	% PER YEAR	3%	10	\$	171,029	
	<i>Subtotal 4</i>			\$	668,327	
CONSTRUCTION ENGINEERING (CE)			10%	\$	66,833	
PRELIMINARY ENGINEERING (PE)			10%	\$	66,833	
	<i>Subtotal 5</i>			\$	801,993	
INDIRECT COSTS (IDC)			10.91%	\$	87,497	
ESTIMATED RIGHT-OF-WAY	ACRE	\$	100,000.00	0.00	\$	-
	TOTAL				\$ 889,490	

⁽¹⁾ Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

⁽²⁾ Length estimated to include 360' lane shift on each side, 530' decel (includes taper), 150' storage, and 100' for intersection width.

TRAFFIC SIGNAL				\$	1,700,000	TOT
			LENGTH (FT) ⁽²⁾		1500	
			WIDTH (FT)		52	
			SURFACING (IN)		5	
			BASE (IN)		12	
TYPE	UNITS	UNIT PRICE	QUANTITY		COST	
EXCAVATION-UNCLASSIFIED	CUYD	\$ 4.35	6052.42	\$	26,328	
CRUSHED AGGREGATE COURSE	CUYD	\$ 21.69	3586.57	\$	77,793	
COVER - TYPE 1	SQYD	\$ 0.54	8667.00	\$	4,680	
PLANT MIX BIT SURF GR S-3/4 IN	TON	\$ 30.74	2447.49	\$	75,236	
ASPHALT CEMENT PG 64-28	TON	\$ 685.62	132.16	\$	90,614	
EMULS ASPHALT CRS-2P	TON	\$ 613.48	15.50	\$	9,509	
SIGNS - RURAL	MI	\$ 8,000.00	0.28	\$	2,273	
STRIPING & PAVEMENT MARKINGS - RURAL	MI	\$ 8,000.00	0.28	\$	2,273	
DRAINAGE PIPE - RURAL	MI	\$ 82,000.00	0.28	\$	23,295	
SIGNALS	EACH	\$ 275,000.00	1.00	\$	275,000	
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$	88,050.15	
TRAFFIC CONTROL			5%	\$	33,752.56	
	<i>Subtotal 1</i>			\$	708,804	
MOBILIZATION			10%	\$	70,880	
	<i>Subtotal 2</i>			\$	779,684	
CONTINGENCIES			20%	\$	155,937	
	<i>Subtotal 3</i>			\$	935,621	
MID-TERM INFLATION	% PER YEAR	3%	10	\$	321,775	
	<i>Subtotal 4</i>			\$	1,257,396	
CONSTRUCTION ENGINEERING (CE)			10%	\$	125,740	
PRELIMINARY ENGINEERING (PE)			10%	\$	125,740	
	<i>Subtotal 5</i>			\$	1,508,876	
INDIRECT COSTS (IDC)			10.91%	\$	164,618	
ESTIMATED RIGHT-OF-WAY	ACRE	\$	100,000.00	0.00	\$	-
	TOTAL				\$ 1,673,494	

⁽¹⁾ Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

⁽²⁾ Length estimated to include 360' lane shift on each side, 530' decel (includes taper), 150' storage, and 100' for intersection width.

4. NELSON ROAD INTERSECTION IMPROVEMENTS					\$	900,000	TOT
			LENGTH (FT)		500		
			WIDTH (FT)		36		
			SURFACING (IN)		5		
			BASE (IN)		12		
TYPE	UNITS	UNIT PRICE	QUANTITY		COST		
EXCAVATION-UNCLASSIFIED	CUYD	\$ 4.35	484.54	\$	2,108		
CRUSHED AGGREGATE COURSE	CUYD	\$ 21.69	611.11	\$	13,255		
COVER - TYPE 1	SQYD	\$ 0.54	1834.00	\$	990		
PLANT MIX BIT SURF GR S-3/4 IN	TON	\$ 30.74	490.80	\$	15,087		
ASPHALT CEMENT PG 64-28	TON	\$ 685.62	26.50	\$	18,171		
EMULS ASPHALT CRS-2P	TON	\$ 613.48	2.20	\$	1,350		
COLD MILLING	SQYD	\$ 1.42	666.67	\$	947		
SIGNS - RURAL	MI	\$ 8,000.00	0.09	\$	758		
STRIPING & PAVEMENT MARKINGS - RURAL	MI	\$ 8,000.00	0.09	\$	758		
DRAINAGE PIPE - RURAL	MI	\$ 82,000.00	0.09	\$	7,765		
SIGNALS	EACH	\$ 275,000.00	1.00	\$	275,000		
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$	50,428		
TRAFFIC CONTROL			5%	\$	19,331		
	<i>Subtotal 1</i>			\$	405,947		
MOBILIZATION			10%	\$	40,595		
	<i>Subtotal 2</i>			\$	446,542		
CONTINGENCIES			20%	\$	89,308		
	<i>Subtotal 3</i>			\$	535,850		
SHORT-TERM INFLATION	% PER YEAR	3%	5	\$	85,347		
	<i>Subtotal 4</i>			\$	621,197		
CONSTRUCTION ENGINEERING (CE)			10%	\$	62,120		
PRELIMINARY ENGINEERING (PE)			10%	\$	62,120		
	<i>Subtotal 5</i>			\$	745,436		
INDIRECT COSTS (IDC)			10.91%	\$	81,327		
ESTIMATED RIGHT-OF-WAY	ACRE	\$ 100,000.00	0.00	\$	-		
	TOTAL			\$	826,763		

⁽¹⁾ Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

5 EVALUATE SCHOOL TRAFFIC IN BELGRADE					\$	30,000	TOT
	<i>Subtotal 1</i>			\$	25,000		
SHORT-TERM INFLATION	% PER YEAR	3%	5	\$	3,982		
	Total			\$	28,982		

6 COMPLETE SIDEWALK NETWORK ALONG MAIN STREET IN BELGRADE					\$	1,500,000	TOT
			LENGTH (FT)		7000		
			WIDTH (FT)		5		
TYPE	UNITS	UNIT PRICE	QUANTITY		COST		
SIDEWALK-CONCRETE 4"	SQYD	\$ 57.78	3111.11	\$	179,760		
SIDEWALK-CONCRETE 6"	SQYD	\$ 66.91	777.78	\$	52,041		
CURB AND GUTTER-CONC	LNFT	\$ 18.15	7000.00	\$	127,050		
DRAINAGE PIPE - URBAN	MI	\$ 240,000.00	0.66	\$	159,091		
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$	77,691.30		
TRAFFIC CONTROL			5%	\$	29,781.67		
	<i>Subtotal 1</i>			\$	625,415		
MOBILIZATION			10%	\$	62,541		
	<i>Subtotal 2</i>			\$	687,956		
CONTINGENCIES			20%	\$	137,591		
	<i>Subtotal 3</i>			\$	825,548		
MID-TERM INFLATION	% PER YEAR	3%	10	\$	283,919		
	<i>Subtotal 4</i>			\$	1,109,467		
CONSTRUCTION ENGINEERING (CE)			10%	\$	110,947		
PRELIMINARY ENGINEERING (PE)			10%	\$	110,947		
	<i>Subtotal 5</i>			\$	1,331,361		
INDIRECT COSTS (IDC)			10.91%	\$	145,251		
ESTIMATED RIGHT-OF-WAY	ACRE	\$ 100,000.00	0.00	\$	-		
	TOTAL			\$	1,476,612		

⁽¹⁾ Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

7. COMPLETE SIDEWALK NETWORK ALONG NORTH 7TH AVENUE IN BOZEMAN					\$	500,000	TOT
			LENGTH (FT)		2000		
			WIDTH (FT)		5		

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
SIDEWALK-CONCRETE 4"	SQYD	\$ 57.78	888.89	\$ 51,360
SIDEWALK-CONCRETE 6"	SQYD	\$ 66.91	222.22	\$ 14,869
CURB AND GUTTER-CONC	LNFT	\$ 18.15	2000.00	\$ 36,300
DRAINAGE PIPE - URBAN	MI	\$ 240,000.00	0.19	\$ 45,455
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$ 22,197.52
TRAFFIC CONTROL			5%	\$ 8,509
				\$ 178,690
MOBILIZATION			10%	\$ 17,869
				\$ 196,559
CONTINGENCIES			20%	\$ 39,312
				\$ 235,871
MID-TERM INFLATION	% PER YEAR	3%	10	\$ 81,120
				\$ 316,991
CONSTRUCTION ENGINEERING (CE)			10%	\$ 31,699
PRELIMINARY ENGINEERING (PE)			10%	\$ 31,699
				\$ 380,389
INDIRECT COSTS (IDC)			10.91%	\$ 41,500
ESTIMATED RIGHT-OF-WAY	ACRE	\$ 100,000.00	0.00	\$ -
TOTAL				\$ 421,889

⁽¹⁾ Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

8. PASSING ZONE MODIFICATIONS \$ 30,000 TOT

				\$ 25,000
SHORT-TERM INFLATION	% PER YEAR	3%	5	\$ 3,982
Total				\$ 28,982

9. INSTALL CENTERLINE RUMBLE STRIPS \$ 30,000 TOT

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
			LENGTH (FT) 12672	
CENTERLINE RUMBLE STRIPS-TYPE 1	MILE	\$ 1,027.22	2.40	\$ 2,465
STRIPING-YELLOW EPOXY	GAL	\$ 56.12	105.34	\$ 5,911
FINAL SWEEP AND BROOM	MILE	\$ 540.68	2.40	\$ 1,298
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$ 1,451.17
TRAFFIC CONTROL			5%	\$ 556.28
				\$ 11,682
MOBILIZATION			10%	\$ 1,168
				\$ 12,850
CONTINGENCIES			20%	\$ 2,570
				\$ 15,420
SHORT-TERM INFLATION	% PER YEAR	3%	5	\$ 2,456
				\$ 17,876
CONSTRUCTION ENGINEERING (CE)			10%	\$ 1,788
PRELIMINARY ENGINEERING (PE)			10%	\$ 1,788
				\$ 21,451
INDIRECT COSTS (IDC)			10.91%	\$ 2,340
ESTIMATED RIGHT-OF-WAY	ACRE	\$ 100,000.00	0.00	\$ -
TOTAL				\$ 23,792

⁽¹⁾ Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

10. DEVELOP SEPARATED SHARED-USE PATH \$820,000 TO \$1,100,000 PER MILE

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
			LENGTH (FT) 5280	
			WIDTH (FT) 10	
			SURFACING (IN) 2	
			BASE (IN) 6	
EXCAVATION-UNCLASSIFIED	CUYD	\$ 4.35	4988.84	\$ 21,701
CRUSHED AGGREGATE COURSE	CUYD	\$ 21.69	1535.93	\$ 33,314
PLANT MIX BIT SURF GR S-3/4 IN	TON	\$ 30.74	699.94	\$ 21,516
ASPHALT CEMENT PG 64-28	TON	\$ 685.62	37.80	\$ 25,914
SIGNS - RURAL	MI	\$ 8,000.00	1.00	\$ 8,000
STRIPING & PAVEMENT MARKINGS - RURAL	MI	\$ 8,000.00	1.00	\$ 8,000
DRAINAGE PIPE - RURAL	MI	\$ 82,000.00	1.00	\$ 82,000
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$ 30,067
TRAFFIC CONTROL			5%	\$ 11,526
				\$ 242,039
MOBILIZATION			10%	\$ 24,204
				\$ 266,243
CONTINGENCIES			20%	\$ 53,249
				\$ 319,491
INFLATION	% PER YEAR	3%		
				MID-TERM \$ 109,878
				LONG-TERM \$ 257,545.63
				\$ 429,370 \$ 577,037

CONSTRUCTION ENGINEERING (CE)			10%	\$	42,937	\$	57,704
PRELIMINARY ENGINEERING (PE)			10%	\$	42,937	\$	57,704
	<i>Subtotal 5</i>			\$	515,244	\$	692,444
INDIRECT COSTS (IDC)			10.91%	\$	56,213	\$	75,546
ESTIMATED RIGHT-OF-WAY	ACRE	\$	2.42	\$	100,000.00	\$	242,424
	TOTAL			\$	813,881	\$	1,010,414

(1) Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

11. ROADWAY RECONSTRUCTION

SEGMENT 1 - NORTH QUAW BOULEVARD TO GALLATIN FIELD ROAD \$ 5,400,000 TOT

			LENGTH (FT)	5000		
			WIDTH (FT) ⁽²⁾	40	(TBC to TBC)	
			SURFACING (IN)	5		
			BASE (IN)	18		
TYPE	UNITS	UNIT PRICE	QUANTITY	COST		
EXCAVATION-UNCLASSIFIED	CUYD	\$ 4.35	9407.05	\$ 40,921		
CRUSHED AGGREGATE COURSE	CUYD	\$ 21.69	10277.78	\$ 222,925		
COVER - TYPE 1	SQYD	\$ 0.54	20556.00	\$ 11,100		
PLANT MIX BIT SURF GR S-3/4 IN	TON	\$ 30.74	5502.89	\$ 169,159		
ASPHALT CEMENT PG 64-28	TON	\$ 685.62	297.16	\$ 203,736		
EMULS ASPHALT CRS-2P	TON	\$ 613.48	36.70	\$ 22,515		
COLD MILLING	SQYD	\$ 1.42	6666.67	\$ 9,467		
SIGNS - URBAN	MI	\$ 52,000.00	0.95	\$ 49,242		
STRIPING & PAVEMENT MARKINGS - URBAN	MI	\$ 20,000.00	0.95	\$ 18,939		
DRAINAGE PIPE - URBAN	MI	\$ 240,000.00	0.95	\$ 227,273		
LIGHTS - URBAN	MI	\$ 175,000.00	0.95	\$ 165,720		
SIDEWALK-CONCRETE 4"	SQYD	\$ 57.78	2777.78	\$ 160,500		
CURB AND GUTTER-CONC	LNFT	\$ 18.15	5000.00	\$ 90,750		
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$ 208,837		
TRAFFIC CONTROL			5%	\$ 80,054		
	<i>Subtotal 1</i>			\$ 1,681,138		
MOBILIZATION			10%	\$ 168,114		
	<i>Subtotal 2</i>			\$ 1,849,252		
CONTINGENCIES			20%	\$ 369,850		
	<i>Subtotal 3</i>			\$ 2,219,102		
LONG-TERM INFLATION	% PER YEAR	3%	20	\$ 1,788,843		
	<i>Subtotal 4</i>			\$ 4,007,945		
CONSTRUCTION ENGINEERING (CE)			10%	\$ 400,795		
PRELIMINARY ENGINEERING (PE)			10%	\$ 400,795		
	<i>Subtotal 5</i>			\$ 4,809,534		
INDIRECT COSTS (IDC)			10.91%	\$ 524,720		
ESTIMATED RIGHT-OF-WAY	ACRE	\$	0.50	\$ 50,000		
	TOTAL			\$ 5,384,254		

(1) Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

(2) Width includes 8' shoulder/parking and two 12' driving lanes.

SEGMENT 2 - AIRPORT ROAD TO RP 23.0 \$ 5,000,000 TOT

			LENGTH (FT)	5800		
			WIDTH (FT) ⁽²⁾	40		
			SURFACING (IN)	5		
			BASE (IN)	18		
TYPE	UNITS	UNIT PRICE	QUANTITY	COST		
EXCAVATION-UNCLASSIFIED	CUYD	\$ 4.35	21824.35	\$ 94,936		
CRUSHED AGGREGATE COURSE	CUYD	\$ 21.69	18039.07	\$ 391,268		
COVER - TYPE 1	SQYD	\$ 0.54	25778.00	\$ 13,920		
PLANT MIX BIT SURF GR S-3/4 IN	TON	\$ 30.74	7393.34	\$ 227,271		
ASPHALT CEMENT PG 64-28	TON	\$ 685.62	399.24	\$ 273,727		
EMULS ASPHALT CRS-2P	TON	\$ 613.48	46.10	\$ 28,281		
COLD MILLING	SQYD	\$ 1.42	7733.33	\$ 10,981		
SIGNS - RURAL	MI	\$ 8,000.00	1.10	\$ 8,788		
STRIPING & PAVEMENT MARKINGS - RURAL	MI	\$ 8,000.00	1.10	\$ 8,788		
DRAINAGE PIPE - RURAL	MI	\$ 8,200.00	1.10	\$ 9,008		
REIN CONC BOX 16 X 5	LNFT	\$ 1,256.00	120.00	\$ 150,720		
RCPA IRR 48 IN CL 3	LNFT	\$ 188.75	120.00	\$ 22,650		
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$ 186,051		
TRAFFIC CONTROL			5%	\$ 71,319		
	<i>Subtotal 1</i>			\$ 1,497,708		
MOBILIZATION			10%	\$ 149,771		
	<i>Subtotal 2</i>			\$ 1,647,479		
CONTINGENCIES			20%	\$ 329,496		
	<i>Subtotal 3</i>			\$ 1,976,974		
LONG-TERM INFLATION	% PER YEAR	3%	20	\$ 1,593,661		
	<i>Subtotal 4</i>			\$ 3,570,636		

CONSTRUCTION ENGINEERING (CE)			10%	\$	357,064
PRELIMINARY ENGINEERING (PE)			10%	\$	357,064
	<i>Subtotal 5</i>			\$	4,284,763
INDIRECT COSTS (IDC)			10.91%	\$	467,468
ESTIMATED RIGHT-OF-WAY	ACRE	\$	2.13	\$	213,039
	TOTAL			\$	4,965,270

(1) Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

(2) Width includes 8' shoulders and two 12' driving lanes.

SEGMENT 3 - RP 24.6 TO SPRINGHILL ROAD **\$ 7,800,000 TOT**

LENGTH (FT)	10500
WIDTH (FT) ⁽²⁾	40
SURFACING (IN)	5
BASE (IN)	18

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
EXCAVATION-UNCLASSIFIED	CUYD	\$ 4.35	39509.60	\$ 171,867
CRUSHED AGGREGATE COURSE	CUYD	\$ 21.69	32656.94	\$ 708,329
COVER - TYPE 1	SQYD	\$ 0.54	46667.00	\$ 25,200
PLANT MIX BIT SURF GR S-3/4 IN	TON	\$ 30.74	13384.49	\$ 411,439
ASPHALT CEMENT PG 64-28	TON	\$ 685.62	722.76	\$ 495,540
EMULS ASPHALT CRS-2P	TON	\$ 613.48	83.30	\$ 51,103
COLD MILLING	SQYD	\$ 1.42	14000.00	\$ 19,880
SIGNS - RURAL	MI	\$ 8,000.00	1.99	\$ 15,909
STRIPING & PAVEMENT MARKINGS - RURAL	MI	\$ 8,000.00	1.99	\$ 15,909
DRAINAGE PIPE - RURAL	MI	\$ 8,200.00	1.99	\$ 16,307
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$ 289,723
TRAFFIC CONTROL			5%	\$ 111,060
	<i>Subtotal 1</i>			\$ 2,332,266
MOBILIZATION			10%	\$ 233,227
	<i>Subtotal 2</i>			\$ 2,565,493
CONTINGENCIES			20%	\$ 513,099
	<i>Subtotal 3</i>			\$ 3,078,591
LONG-TERM INFLATION	% PER YEAR	3%	20	\$ 2,481,687
	<i>Subtotal 4</i>			\$ 5,560,278
CONSTRUCTION ENGINEERING (CE)			10%	\$ 556,028
PRELIMINARY ENGINEERING (PE)			10%	\$ 556,028
	<i>Subtotal 5</i>			\$ 6,672,334
INDIRECT COSTS (IDC)			10.91%	\$ 727,952
ESTIMATED RIGHT-OF-WAY	ACRE	\$ 100,000.00	3.86	\$ 385,675
	TOTAL			\$ 7,785,961

(1) Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

(2) Width includes 8' shoulders and two 12' driving lanes.

SEGMENT 4 - SPRINGHILL ROAD TO RAILROAD OVERPASS **\$ 6,900,000 TOT**

LENGTH (FT)	6600
WIDTH (FT) ⁽²⁾	56
SURFACING (IN)	5
BASE (IN)	18

TYPE	UNITS	UNIT PRICE	QUANTITY	COST
EXCAVATION-UNCLASSIFIED	CUYD	\$ 4.35	44045.20	\$ 191,597
CRUSHED AGGREGATE COURSE	CUYD	\$ 21.69	26393.89	\$ 572,483
COVER - TYPE 1	SQYD	\$ 0.54	41067.00	\$ 22,176
PLANT MIX BIT SURF GR S-3/4 IN	TON	\$ 30.74	11554.22	\$ 355,177
ASPHALT CEMENT PG 64-28	TON	\$ 685.62	623.93	\$ 427,777
EMULS ASPHALT CRS-2P	TON	\$ 613.48	73.40	\$ 45,029
COLD MILLING	SQYD	\$ 1.42	8800.00	\$ 12,496
SIGNS - RURAL	MI	\$ 8,000.00	1.25	\$ 10,000
STRIPING & PAVEMENT MARKINGS - RURAL	MI	\$ 8,000.00	1.25	\$ 10,000
DRAINAGE PIPE - RURAL	MI	\$ 8,200.00	1.25	\$ 10,250
MISCELLANEOUS ITEMS ⁽¹⁾			15%	\$ 248,548
TRAFFIC CONTROL			5%	\$ 95,277
	<i>Subtotal 1</i>			\$ 2,000,810
MOBILIZATION			10%	\$ 200,081
	<i>Subtotal 2</i>			\$ 2,200,891
CONTINGENCIES			20%	\$ 440,178
	<i>Subtotal 3</i>			\$ 2,641,069
LONG-TERM INFLATION	% PER YEAR	3%	20	\$ 2,128,996
	<i>Subtotal 4</i>			\$ 4,770,065
CONSTRUCTION ENGINEERING (CE)			10%	\$ 477,007
PRELIMINARY ENGINEERING (PE)			10%	\$ 477,007
	<i>Subtotal 5</i>			\$ 5,724,078
INDIRECT COSTS (IDC)			10.91%	\$ 624,497
ESTIMATED RIGHT-OF-WAY	ACRE	\$ 100,000.00	4.85	\$ 484,848

TOTAL

\$ 6,833,424

(1) Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

(2) Width includes 8' shoulders, two 12' driving lanes, and 16' TWLTL

SEGMENT 5 - RAILROAD OVERPASS TO I-90				\$	4,400,000	TOT
		LENGTH (FT)		3000		
		WIDTH (FT) ⁽²⁾		56	(TBC to TBC)	
		SURFACING (IN)		5		
		BASE (IN)		18		
TYPE	UNITS	UNIT PRICE	QUANTITY	COST		
EXCAVATION-UNCLASSIFIED	CUYD	\$ 4.35	2502.57	\$	10,886	
CRUSHED AGGREGATE COURSE COVER - TYPE 1	CUYD	\$ 21.69	8833.33	\$	191,595	
PLANT MIX BIT SURF GR S-3/4 IN ASPHALT CEMENT PG 64-28	SQYD	\$ 0.54	17667.00	\$	9,540	
EMULS ASPHALT CRS-2P	TON	\$ 30.74	4729.51	\$	145,385	
COLD MILLING	TON	\$ 685.62	255.39	\$	175,103	
SIGNS - URBAN	TON	\$ 613.48	31.60	\$	19,386	
STRIPING & PAVEMENT MARKINGS - URBAN	SQYD	\$ 1.42	4000.00	\$	5,680	
DRAINAGE PIPE - URBAN	MI	\$ 52,000.00	0.57	\$	29,545	
LIGHTS - URBAN	MI	\$ 20,000.00	0.57	\$	11,364	
SIDEWALK-CONCRETE 4"	MI	\$ 240,000.00	0.57	\$	136,364	
CURB AND GUTTER-CONC	MI	\$ 175,000.00	0.57	\$	99,432	
MISCELLANEOUS ITEMS ⁽¹⁾	SQYD	\$ 57.78	2500.00	\$	144,450	
TRAFFIC CONTROL	LNFT	\$ 18.15	4500.00	\$	81,675	
			15%	\$	159,061	
			5%	\$	60,973	
	<i>Subtotal 1</i>			\$	1,280,439	
MOBILIZATION			10%	\$	128,044	
	<i>Subtotal 2</i>			\$	1,408,483	
CONTINGENCIES			20%	\$	281,697	
	<i>Subtotal 3</i>			\$	1,690,180	
LONG-TERM INFLATION	% PER YEAR	3%	20	\$	1,362,473	
	<i>Subtotal 4</i>			\$	3,052,653	
CONSTRUCTION ENGINEERING (CE)			10%	\$	305,265	
PRELIMINARY ENGINEERING (PE)			10%	\$	305,265	
	<i>Subtotal 5</i>			\$	3,663,183	
INDIRECT COSTS (IDC)			10.91%	\$	399,653	
ESTIMATED RIGHT-OF-WAY	ACRE	\$ 250,000.00	1.00	\$	250,000	
TOTAL				\$	4,312,837	

(1) Miscellaneous items include unknown factors such as excavation, embankment, topsoil, utilities, slope treatments, ditch or channel excavation, temporary striping, erosion control, and public relations.

(2) Width includes 8' shoulder/parking, two 12' driving lanes, and 16' TWLTL.



Appendix B

IMPROVEMENT OPTIONS OPERATIONAL ANALYSIS

Intersection Level Of Service Report
Intersection 2: Broadway Street & Main Street

Control Type:	All-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Base Volume Input [veh/h]	27	63	60	23	45	11	10	167	13	71	82	17
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	1.60	8.30	0.00	4.40	0.00	0.00	4.20	0.00	8.40	3.60	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	66	62	24	47	11	9	154	12	65	75	16
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	18	17	6	13	3	2	41	3	17	20	4
Total Analysis Volume [veh/h]	30	71	67	26	50	12	10	165	13	70	80	17
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes****Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.85	0.42	0.99	0.87
95th-Percentile Queue Length [ft]	21.26	10.48	24.76	21.84
Approach Delay [s/veh]	9.14	8.75	9.40	9.35
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	9.22			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 2: Broadway Street & Main Street

Control Type:	All-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Base Volume Input [veh/h]	58	91	112	45	77	19	10	187	55	111	293	17
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	2.20	1.80	2.20	3.90	5.30	0.00	1.10	0.00	2.70	4.40	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	95	116	47	80	20	9	172	51	102	270	16
Peak Hour Factor	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	25	30	12	21	5	2	45	13	26	70	4
Total Analysis Volume [veh/h]	62	99	120	49	83	21	9	179	53	106	280	17
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes****Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	2.49	1.13	1.92	4.83
95th-Percentile Queue Length [ft]	62.18	28.16	47.97	120.65
Approach Delay [s/veh]	14.17	12.01	12.90	19.29
Approach LOS	B	B	B	C
Intersection Delay [s/veh]	15.49			
Intersection LOS	C			

Intersection Level Of Service Report
Intersection 2: Broadway Street & Main Street

Control Type:	All-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Base Volume Input [veh/h]	27	63	60	23	45	11	10	167	13	71	82	17
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	1.60	8.30	0.00	4.40	0.00	0.00	4.20	0.00	8.40	3.60	0.00
Growth Rate	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	90	84	33	64	15	12	209	16	88	102	22
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	24	23	9	17	4	3	56	4	24	27	6
Total Analysis Volume [veh/h]	41	97	90	35	69	16	13	224	17	94	109	24
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.47	0.69	1.72	1.50
95th-Percentile Queue Length [ft]	36.82	17.15	43.09	37.57
Approach Delay [s/veh]	10.93	9.93	11.37	11.14
Approach LOS	B	A	B	B
Intersection Delay [s/veh]	10.98			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 2: Broadway Street & Main Street

Control Type:	All-way stop	Delay (sec / veh):	57.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes		

Intersection Setup

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Base Volume Input [veh/h]	58	91	112	45	77	19	10	187	55	111	293	17
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	2.20	1.80	2.20	3.90	5.30	0.00	1.10	0.00	2.70	4.40	0.00
Growth Rate	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	129	158	64	109	27	12	234	69	139	367	22
Peak Hour Factor	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	33	41	17	28	7	3	61	18	36	95	6
Total Analysis Volume [veh/h]	85	134	164	66	113	28	12	243	72	144	381	23
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes****Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	7.28	2.55	5.25	18.84
95th-Percentile Queue Length [ft]	182.12	63.75	131.28	470.91
Approach Delay [s/veh]	33.49	18.89	26.12	108.05
Approach LOS	D	C	D	F
Intersection Delay [s/veh]	57.67			
Intersection LOS	F			

Intersection Level Of Service Report

Intersection 2: Broadway Street & Main Street - With LT lanes

Control Type:	Signalized	Delay (sec / veh):	12.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.221

Intersection Setup

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Base Volume Input [veh/h]	27	63	60	23	45	11	10	167	13	71	82	17
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	1.60	8.30	0.00	4.40	0.00	0.00	4.20	0.00	8.40	3.60	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	66	62	24	47	11	9	154	12	65	75	16
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	18	17	6	13	3	2	41	3	17	20	4
Total Analysis Volume [veh/h]	30	71	67	26	50	12	10	165	13	70	80	17
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	0	28	0	0	28	0	0	32	0	0	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	23	23	27	27	27	27
g / C, Green / Cycle	0.38	0.38	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.11	0.06	0.01	0.11	0.07	0.06
s, saturation flow rate [veh/h]	1510	1458	1187	1620	1017	1601
c, Capacity [veh/h]	650	637	573	729	475	720
d1, Uniform Delay [s]	12.77	12.07	11.59	10.20	13.66	9.66
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.96	0.45	0.06	0.80	0.65	0.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.14	0.02	0.24	0.15	0.13
d, Delay for Lane Group [s/veh]	13.74	12.53	11.64	10.99	14.32	10.05
Lane Group LOS	B	B	B	B	B	B
Critical Lane Group	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh]	1.56	0.77	0.08	1.42	0.69	0.73
50th-Percentile Queue Length [ft]	39.12	19.22	2.10	35.44	17.13	18.16
95th-Percentile Queue Length [veh]	2.82	1.38	0.15	2.55	1.23	1.31
95th-Percentile Queue Length [ft]	70.41	34.59	3.77	63.78	30.84	32.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.74	13.74	13.74	12.53	12.53	12.53	11.64	10.99	10.99	14.32	10.05	10.05
Movement LOS	B	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	13.74			12.53			11.03			11.84		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	12.21											
Intersection LOS	B											
Intersection V/C	0.221											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 2: Broadway Street & Main Street - With LT lanes

Control Type:	Signalized	Delay (sec / veh):	13.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.375

Intersection Setup

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Base Volume Input [veh/h]	58	91	112	45	77	19	10	187	55	111	293	17
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	2.20	1.80	2.20	3.90	5.30	0.00	1.10	0.00	2.70	4.40	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	95	116	47	80	20	9	172	51	102	270	16
Peak Hour Factor	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	25	30	12	21	5	2	45	13	26	70	4
Total Analysis Volume [veh/h]	62	99	120	49	83	21	9	179	53	106	280	17
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	0	28	0	0	28	0	0	32	0	0	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	23	23	27	27	27	27
g / C, Green / Cycle	0.38	0.38	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.19	0.11	0.01	0.14	0.10	0.18
s, saturation flow rate [veh/h]	1463	1338	989	1626	1022	1622
c, Capacity [veh/h]	634	592	410	732	452	730
d1, Uniform Delay [s]	13.93	12.61	15.12	10.59	15.24	11.11
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.24	1.06	0.10	1.14	1.21	1.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.26	0.02	0.32	0.23	0.41
d, Delay for Lane Group [s/veh]	16.17	13.66	15.22	11.72	16.46	12.79
Lane Group LOS	B	B	B	B	B	B
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	2.93	1.42	0.09	1.93	1.14	2.63
50th-Percentile Queue Length [ft]	73.25	35.60	2.30	48.29	28.54	65.63
95th-Percentile Queue Length [veh]	5.27	2.56	0.17	3.48	2.05	4.73
95th-Percentile Queue Length [ft]	131.86	64.07	4.14	86.92	51.37	118.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.17	16.17	16.17	13.66	13.66	13.66	15.22	11.72	11.72	16.46	12.79	12.79
Movement LOS	B	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	16.17			13.66			11.85			13.76		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	13.95											
Intersection LOS	B											
Intersection V/C	0.375											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 2: Broadway Street & Main Street - With LT lanes

Control Type:	Signalized	Delay (sec / veh):	13.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.300

Intersection Setup

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Base Volume Input [veh/h]	27	63	60	23	45	11	10	167	13	71	82	17
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	1.60	8.30	0.00	4.40	0.00	0.00	4.20	0.00	8.40	3.60	0.00
Growth Rate	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	90	84	33	64	15	12	209	16	88	102	22
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	24	23	9	17	4	3	56	4	24	27	6
Total Analysis Volume [veh/h]	41	97	90	35	69	16	13	224	17	94	109	24
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	0	27	0	0	27	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	22	22	28	28	28	28
g / C, Green / Cycle	0.37	0.37	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.15	0.08	0.01	0.15	0.10	0.08
s, saturation flow rate [veh/h]	1507	1423	1149	1621	961	1600
c, Capacity [veh/h]	623	599	562	756	447	746
d1, Uniform Delay [s]	14.07	13.01	11.48	10.02	14.48	9.31
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.66	0.75	0.08	1.11	1.07	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

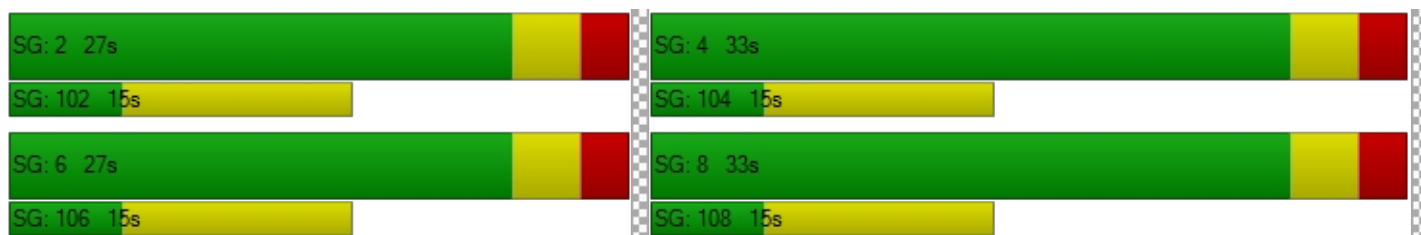
X, volume / capacity	0.37	0.20	0.02	0.32	0.21	0.18
d, Delay for Lane Group [s/veh]	15.73	13.76	11.55	11.13	15.55	9.83
Lane Group LOS	B	B	B	B	B	A
Critical Lane Group	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh]	2.33	1.12	0.11	1.93	0.98	0.98
50th-Percentile Queue Length [ft]	58.30	28.00	2.72	48.32	24.45	24.48
95th-Percentile Queue Length [veh]	4.20	2.02	0.20	3.48	1.76	1.76
95th-Percentile Queue Length [ft]	104.95	50.40	4.89	86.98	44.02	44.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.73	15.73	15.73	13.76	13.76	13.76	11.55	11.13	11.13	15.55	9.83	9.83
Movement LOS	B	B	B	B	B	B	B	B	B	B	A	A
d_A, Approach Delay [s/veh]	15.73			13.76			11.15			12.20		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	13.07											
Intersection LOS	B											
Intersection V/C	0.300											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 2: Broadway Street & Main Street - With LT lanes

Control Type:	Signalized	Delay (sec / veh):	16.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.511

Intersection Setup

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Base Volume Input [veh/h]	58	91	112	45	77	19	10	187	55	111	293	17
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	2.20	1.80	2.20	3.90	5.30	0.00	1.10	0.00	2.70	4.40	0.00
Growth Rate	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	129	158	64	109	27	12	234	69	139	367	22
Peak Hour Factor	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	33	41	17	28	7	3	61	18	36	95	6
Total Analysis Volume [veh/h]	85	134	164	66	113	28	12	243	72	144	381	23
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	0	27	0	0	27	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	22	22	28	28	28	28
g / C, Green / Cycle	0.37	0.37	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.26	0.17	0.01	0.19	0.15	0.25
s, saturation flow rate [veh/h]	1462	1185	897	1626	948	1622
c, Capacity [veh/h]	609	514	350	759	409	757
d1, Uniform Delay [s]	16.05	13.91	16.81	10.58	17.08	11.36
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.86	2.35	0.18	1.67	2.37	2.69
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

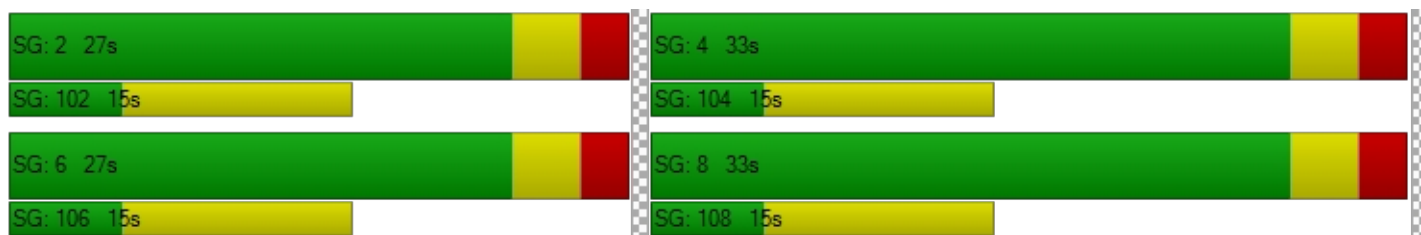
X, volume / capacity	0.63	0.40	0.03	0.42	0.35	0.53
d, Delay for Lane Group [s/veh]	20.90	16.26	17.00	12.26	19.45	14.05
Lane Group LOS	C	B	B	B	B	B
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	4.74	2.16	0.13	2.70	1.75	3.80
50th-Percentile Queue Length [ft]	118.44	53.94	3.34	67.47	43.65	94.90
95th-Percentile Queue Length [veh]	8.31	3.88	0.24	4.86	3.14	6.83
95th-Percentile Queue Length [ft]	207.68	97.08	6.00	121.44	78.57	170.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.90	20.90	20.90	16.26	16.26	16.26	17.00	12.26	12.26	19.45	14.05	14.05
Movement LOS	C	C	C	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	20.90			16.26			12.43			15.47		
Approach LOS	C			B			B			B		
d_I, Intersection Delay [s/veh]	16.32											
Intersection LOS	B											
Intersection V/C	0.511											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 7: Broadway Street & Main Street - Without LT lanes

Control Type:	Signalized	Delay (sec / veh):	12.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.236

Intersection Setup

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Base Volume Input [veh/h]	27	63	60	23	45	11	10	167	13	71	82	17
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	1.60	8.30	0.00	4.40	0.00	0.00	4.20	0.00	8.40	3.60	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	66	62	24	47	11	9	154	12	65	75	16
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	18	17	6	13	3	2	41	3	17	20	4
Total Analysis Volume [veh/h]	30	71	67	26	50	12	10	165	13	70	80	17
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	0	30	0	0	30	0	0	30	0	0	30	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	25	25	25	25
g / C, Green / Cycle	0.42	0.42	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.11	0.06	0.12	0.12
s, saturation flow rate [veh/h]	1508	1451	1609	1338
c, Capacity [veh/h]	699	682	734	643
d1, Uniform Delay [s]	11.43	10.80	11.55	11.43
k, delay calibration	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.81	0.39	0.84	0.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

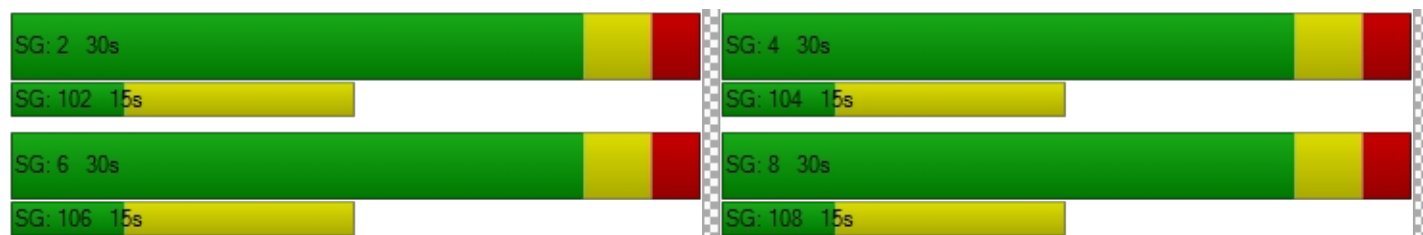
X, volume / capacity	0.24	0.13	0.26	0.26
d, Delay for Lane Group [s/veh]	12.24	11.19	12.39	12.41
Lane Group LOS	B	B	B	B
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	1.44	0.71	1.63	1.45
50th-Percentile Queue Length [ft]	36.10	17.77	40.65	36.23
95th-Percentile Queue Length [veh]	2.60	1.28	2.93	2.61
95th-Percentile Queue Length [ft]	64.98	31.98	73.17	65.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.24	12.24	12.24	11.19	11.19	11.19	12.39	12.39	12.39	12.41	12.41	12.41
Movement LOS	B	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	12.24			11.19			12.39			12.41		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	12.18											
Intersection LOS	B											
Intersection V/C	0.236											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 7: Broadway Street & Main Street - Without LT lanes

Control Type:	Signalized	Delay (sec / veh):	14.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.468

Intersection Setup

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Base Volume Input [veh/h]	58	91	112	45	77	19	10	187	55	111	293	17
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	2.20	1.80	2.20	3.90	5.30	0.00	1.10	0.00	2.70	4.40	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	95	116	47	80	20	9	172	51	102	270	16
Peak Hour Factor	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	25	30	12	21	5	2	45	13	26	70	4
Total Analysis Volume [veh/h]	62	99	120	49	83	21	9	179	53	106	280	17
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	0	28	0	0	28	0	0	32	0	0	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	23	23	27	27
g / C, Green / Cycle	0.38	0.38	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.19	0.11	0.15	0.28
s, saturation flow rate [veh/h]	1463	1338	1616	1460
c, Capacity [veh/h]	634	592	789	733
d1, Uniform Delay [s]	13.93	12.61	10.65	12.14
k, delay calibration	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.24	1.06	1.00	2.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.26	0.31	0.55
d, Delay for Lane Group [s/veh]	16.17	13.66	11.65	15.10
Lane Group LOS	B	B	B	B
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	2.93	1.42	2.00	3.97
50th-Percentile Queue Length [ft]	73.25	35.60	49.91	99.37
95th-Percentile Queue Length [veh]	5.27	2.56	3.59	7.15
95th-Percentile Queue Length [ft]	131.86	64.07	89.83	178.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.17	16.17	16.17	13.66	13.66	13.66	11.65	11.65	11.65	15.10	15.10	15.10
Movement LOS	B	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	16.17			13.66			11.65			15.10		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	14.40											
Intersection LOS	B											
Intersection V/C	0.468											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 7: Broadway Street & Main Street - Without LT lanes

Control Type:	Signalized	Delay (sec / veh):	13.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.332

Intersection Setup

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Base Volume Input [veh/h]	27	63	60	23	45	11	10	167	13	71	82	17
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	1.60	8.30	0.00	4.40	0.00	0.00	4.20	0.00	8.40	3.60	0.00
Growth Rate	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	90	84	33	64	15	12	209	16	88	102	22
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	24	23	9	17	4	3	56	4	24	27	6
Total Analysis Volume [veh/h]	41	97	90	35	69	16	13	224	17	94	109	24
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	0	29	0	0	29	0	0	31	0	0	31	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	24	24	26	26
g / C, Green / Cycle	0.40	0.40	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.15	0.08	0.16	0.18
s, saturation flow rate [veh/h]	1505	1427	1608	1259
c, Capacity [veh/h]	673	648	760	630
d1, Uniform Delay [s]	12.63	11.68	11.42	11.52
k, delay calibration	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.37	0.63	1.18	1.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.19	0.33	0.36
d, Delay for Lane Group [s/veh]	14.00	12.31	12.61	13.11
Lane Group LOS	B	B	B	B
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	2.15	1.04	2.23	2.07
50th-Percentile Queue Length [ft]	53.81	25.91	55.64	51.63
95th-Percentile Queue Length [veh]	3.87	1.87	4.01	3.72
95th-Percentile Queue Length [ft]	96.86	46.64	100.16	92.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.00	14.00	14.00	12.31	12.31	12.31	12.61	12.61	12.61	13.11	13.11	13.11
Movement LOS	B	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	14.00			12.31			12.61			13.11		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	13.08											
Intersection LOS	B											
Intersection V/C	0.332											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 7: Broadway Street & Main Street - Without LT lanes

Control Type:	Signalized	Delay (sec / veh):	18.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.668

Intersection Setup

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Broadway Street			Broadway Street			Main Street			Main Street		
Base Volume Input [veh/h]	58	91	112	45	77	19	10	187	55	111	293	17
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	2.20	1.80	2.20	3.90	5.30	0.00	1.10	0.00	2.70	4.40	0.00
Growth Rate	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	129	158	64	109	27	12	234	69	139	367	22
Peak Hour Factor	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630	0.9630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	33	41	17	28	7	3	61	18	36	95	6
Total Analysis Volume [veh/h]	85	134	164	66	113	28	12	243	72	144	381	23
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	0	27	0	0	27	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	22	22	28	28
g / C, Green / Cycle	0.37	0.37	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.26	0.17	0.20	0.41
s, saturation flow rate [veh/h]	1462	1185	1620	1350
c, Capacity [veh/h]	609	514	818	706
d1, Uniform Delay [s]	16.05	13.91	10.68	14.23
k, delay calibration	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.86	2.35	1.46	8.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

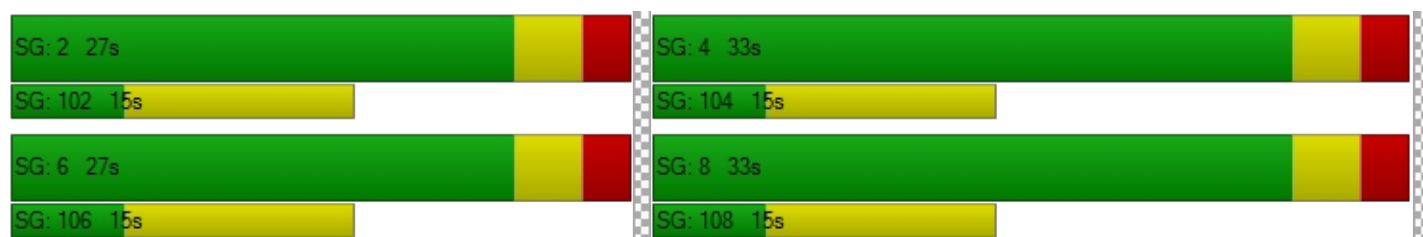
X, volume / capacity	0.63	0.40	0.40	0.78
d, Delay for Lane Group [s/veh]	20.90	16.26	12.14	22.43
Lane Group LOS	C	B	B	C
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	4.74	2.16	2.79	7.17
50th-Percentile Queue Length [ft]	118.44	53.94	69.70	179.19
95th-Percentile Queue Length [veh]	8.31	3.88	5.02	11.56
95th-Percentile Queue Length [ft]	207.68	97.08	125.47	288.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.90	20.90	20.90	16.26	16.26	16.26	12.14	12.14	12.14	22.43	22.43	22.43
Movement LOS	C	C	C	B	B	B	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	20.90			16.26			12.14			22.43		
Approach LOS	C			B			B			C		
d_I, Intersection Delay [s/veh]	18.86											
Intersection LOS	B											
Intersection V/C	0.668											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



MOVEMENT SUMMARY

 Site: Broadway and Main - 2016 AM

2016 AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Broadway Street											
3	L2	30	0.0	0.159	4.9	LOS A	0.5	13.5	0.29	0.19	27.7
8	T1	70	1.6	0.159	4.9	LOS A	0.5	13.5	0.29	0.19	27.6
18	R2	67	8.3	0.159	4.9	LOS A	0.5	13.5	0.29	0.19	27.0
Approach		167	4.0	0.159	4.9	LOS A	0.5	13.5	0.29	0.19	27.3
East: Main Street											
1	L2	70	8.4	0.150	4.5	LOS A	0.5	12.7	0.20	0.11	27.4
6	T1	81	3.6	0.150	4.5	LOS A	0.5	12.7	0.20	0.11	27.4
16	R2	17	0.0	0.150	4.5	LOS A	0.5	12.7	0.20	0.11	26.8
Approach		168	5.2	0.150	4.5	LOS A	0.5	12.7	0.20	0.11	27.3
North: Broadway Street											
7	L2	26	0.0	0.081	4.0	LOS A	0.3	6.5	0.25	0.15	27.8
4	T1	50	4.4	0.081	4.0	LOS A	0.3	6.5	0.25	0.15	27.7
14	R2	12	0.0	0.081	4.0	LOS A	0.3	6.5	0.25	0.15	27.1
Approach		88	2.5	0.081	4.0	LOS A	0.3	6.5	0.25	0.15	27.6
West: Main Street											
5	L2	10	0.0	0.170	4.8	LOS A	0.6	14.8	0.25	0.15	27.9
2	T1	165	4.2	0.170	4.8	LOS A	0.6	14.8	0.25	0.15	27.8
12	R2	13	0.0	0.170	4.8	LOS A	0.6	14.8	0.25	0.15	27.2
Approach		188	3.7	0.170	4.8	LOS A	0.6	14.8	0.25	0.15	27.7
All Vehicles		611	4.0	0.170	4.6	LOS A	0.6	14.8	0.25	0.15	27.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 Site: Broadway and Main - 2016 PM

2016 PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Broadway Street											
3	L2	63	0.0	0.268	6.0	LOS A	1.0	25.5	0.34	0.26	27.2
8	T1	98	2.2	0.268	6.0	LOS A	1.0	25.5	0.34	0.26	27.1
18	R2	121	1.8	0.268	6.0	LOS A	1.0	25.5	0.34	0.26	26.6
Approach		282	1.5	0.268	6.0	LOS A	1.0	25.5	0.34	0.26	26.9
East: Main Street											
1	L2	106	2.7	0.371	7.1	LOS A	1.6	39.9	0.33	0.22	26.8
6	T1	280	4.4	0.371	7.1	LOS A	1.6	39.9	0.33	0.22	26.7
16	R2	16	0.0	0.371	7.1	LOS A	1.6	39.9	0.33	0.22	26.2
Approach		402	3.8	0.371	7.1	LOS A	1.6	39.9	0.33	0.22	26.7
North: Broadway Street											
7	L2	49	2.2	0.176	5.9	LOS A	0.6	14.6	0.43	0.39	27.1
4	T1	83	3.9	0.176	5.9	LOS A	0.6	14.6	0.43	0.39	27.0
14	R2	21	5.3	0.176	5.9	LOS A	0.6	14.6	0.43	0.39	26.5
Approach		152	3.5	0.176	5.9	LOS A	0.6	14.6	0.43	0.39	27.0
West: Main Street											
5	L2	10	0.0	0.228	5.6	LOS A	0.8	20.9	0.34	0.25	27.6
2	T1	179	1.1	0.228	5.6	LOS A	0.8	20.9	0.34	0.25	27.5
12	R2	53	0.0	0.228	5.6	LOS A	0.8	20.9	0.34	0.25	27.0
Approach		241	0.8	0.228	5.6	LOS A	0.8	20.9	0.34	0.25	27.4
All Vehicles		1077	2.5	0.371	6.3	LOS A	1.6	39.9	0.35	0.26	27.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 **Site: Broadway and Main - 2040 AM**

2040 AM
 Roundabout
 Design Life Analysis (Final Year): Results for 24 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Broadway Street											
3	L2	41	0.0	0.229	5.8	LOS A	0.8	20.5	0.36	0.28	27.3
8	T1	96	1.6	0.229	5.8	LOS A	0.8	20.5	0.36	0.28	27.2
18	R2	91	8.3	0.229	5.8	LOS A	0.8	20.5	0.36	0.28	26.6
Approach		228	4.0	0.229	5.8	LOS A	0.8	20.5	0.36	0.28	27.0
East: Main Street											
1	L2	95	8.4	0.210	5.2	LOS A	0.7	18.9	0.25	0.16	27.2
6	T1	110	3.6	0.210	5.2	LOS A	0.7	18.9	0.25	0.16	27.1
16	R2	23	0.0	0.210	5.2	LOS A	0.7	18.9	0.25	0.16	26.6
Approach		228	5.2	0.210	5.2	LOS A	0.7	18.9	0.25	0.16	27.1
North: Broadway Street											
7	L2	35	0.0	0.117	4.6	LOS A	0.4	9.5	0.31	0.22	27.6
4	T1	68	4.4	0.117	4.6	LOS A	0.4	9.5	0.31	0.22	27.5
14	R2	17	0.0	0.117	4.6	LOS A	0.4	9.5	0.31	0.22	27.0
Approach		120	2.5	0.117	4.6	LOS A	0.4	9.5	0.31	0.22	27.5
West: Main Street											
5	L2	13	0.0	0.242	5.7	LOS A	0.9	22.3	0.31	0.22	27.6
2	T1	224	4.2	0.242	5.7	LOS A	0.9	22.3	0.31	0.22	27.5
12	R2	17	0.0	0.242	5.7	LOS A	0.9	22.3	0.31	0.22	26.9
Approach		255	3.7	0.242	5.7	LOS A	0.9	22.3	0.31	0.22	27.4
All Vehicles		831	4.0	0.242	5.5	LOS A	0.9	22.3	0.31	0.22	27.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 Site: Broadway and Main - 2040 PM

2040 PM
 Roundabout
 Design Life Analysis (Practical Capacity): Results for 24 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Broadway Street											
3	L2	85	0.0	0.390	7.9	LOS A	1.6	41.1	0.45	0.39	26.6
8	T1	134	2.2	0.390	7.9	LOS A	1.6	41.1	0.45	0.39	26.5
18	R2	165	1.8	0.390	7.9	LOS A	1.6	41.1	0.45	0.39	26.0
Approach		383	1.5	0.390	7.9	LOS A	1.6	41.1	0.45	0.39	26.3
East: Main Street											
1	L2	144	2.7	0.530	10.0	LOS A	2.7	68.4	0.46	0.37	25.9
6	T1	381	4.4	0.530	10.0	LOS A	2.7	68.4	0.46	0.37	25.9
16	R2	22	0.0	0.530	10.0	LOS A	2.7	68.4	0.46	0.37	25.4
Approach		547	3.8	0.530	10.0	LOS A	2.7	68.4	0.46	0.37	25.8
North: Broadway Street											
7	L2	66	2.2	0.272	7.9	LOS A	0.9	23.7	0.52	0.52	26.5
4	T1	113	3.9	0.272	7.9	LOS A	0.9	23.7	0.52	0.52	26.4
14	R2	28	5.3	0.272	7.9	LOS A	0.9	23.7	0.52	0.52	25.9
Approach		207	3.5	0.272	7.9	LOS A	0.9	23.7	0.52	0.52	26.4
West: Main Street											
5	L2	13	0.0	0.333	7.1	LOS A	1.3	33.1	0.43	0.37	27.1
2	T1	243	1.1	0.333	7.1	LOS A	1.3	33.1	0.43	0.37	27.0
12	R2	71	0.0	0.333	7.1	LOS A	1.3	33.1	0.43	0.37	26.5
Approach		327	0.8	0.333	7.1	LOS A	1.3	33.1	0.43	0.37	26.9
All Vehicles		1465	2.5	0.530	8.5	LOS A	2.7	68.4	0.46	0.40	26.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**Intersection Level Of Service Report
Intersection 3: Oregon Street & Main Street**

Control Type:	Two-way stop	Delay (sec / veh):	16.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.098

Intersection Setup

Name	Oregon Street						Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oregon Street						Main Street			Main Street		
Base Volume Input [veh/h]	31	16	57	29	7	21	29	264	2	18	188	1
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	6.30	1.80	0.00	0.00	4.80	4.90	0.00	5.60	5.60	3.80	100.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	17	59	29	7	21	27	243	2	17	173	1
Peak Hour Factor	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	5	17	9	2	6	8	72	1	5	51	0
Total Analysis Volume [veh/h]	38	20	70	34	8	25	32	287	2	20	204	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.05	0.09	0.10	0.02	0.03	0.02	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	16.28	15.88	10.28	16.78	15.40	10.73	7.73	0.00	0.00	7.92	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.53	0.53	0.31	0.52	0.52	0.52	0.93	0.93	0.93	0.65	0.65	0.65
95th-Percentile Queue Length [ft]	13.30	13.30	7.68	12.93	12.93	12.93	23.24	23.24	23.24	16.34	16.34	16.34
d_A, Approach Delay [s/veh]	12.94			14.36			0.77			0.70		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	4.08											
Intersection LOS	C											

**Intersection Level Of Service Report
Intersection 3: Oregon Street & Main Street**

Control Type:	Two-way stop	Delay (sec / veh):	27.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.316

Intersection Setup

Name	Oregon Street						Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oregon Street						Main Street			Main Street		
Base Volume Input [veh/h]	68	4	59	27	10	49	28	220	37	59	405	5
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	0.00	3.40	0.00	0.00	2.00	3.60	3.20	0.00	3.40	1.20	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	4	61	27	10	49	26	202	34	54	373	5
Peak Hour Factor	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	1	16	7	3	13	7	54	9	14	100	1
Total Analysis Volume [veh/h]	76	4	65	29	11	52	28	216	36	58	398	5
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.32	0.01	0.08	0.11	0.04	0.08	0.02	0.00	0.00	0.04	0.00	0.00
d_M, Delay for Movement [s/veh]	27.11	24.57	9.89	21.77	20.41	13.26	8.22	0.00	0.00	7.89	0.00	0.00
Movement LOS	D	C	A	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	1.38	1.38	0.26	0.89	0.89	0.89	0.96	0.96	0.96	1.61	1.61	1.61
95th-Percentile Queue Length [ft]	34.57	34.57	6.60	22.14	22.14	22.14	24.01	24.01	24.01	40.34	40.34	40.34
d_A, Approach Delay [s/veh]	19.32			16.80			0.82			0.99		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	5.15											
Intersection LOS	D											

**Intersection Level Of Service Report
Intersection 3: Oregon Street & Main Street**

Control Type:	Two-way stop	Delay (sec / veh):	22.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.165

Intersection Setup

Name	Oregon Street						Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oregon Street						Main Street			Main Street		
Base Volume Input [veh/h]	31	16	57	29	7	21	29	264	2	18	188	1
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	6.30	1.80	0.00	0.00	4.80	0.00	4.90	0.00	5.60	3.80	100.00
Growth Rate	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	23	80	39	10	29	37	330	3	23	235	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	6	22	11	3	8	10	90	1	6	64	0
Total Analysis Volume [veh/h]	48	25	87	42	11	32	40	359	3	25	255	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.17	0.08	0.13	0.17	0.03	0.04	0.03	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	21.56	20.37	11.02	22.34	19.37	12.83	7.81	0.00	0.00	8.13	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.95	0.95	0.43	0.92	0.92	0.92	1.30	1.30	1.30	0.93	0.93	0.93
95th-Percentile Queue Length [ft]	23.82	23.82	10.86	23.10	23.10	23.10	32.45	32.45	32.45	23.33	23.33	23.33
d_A, Approach Delay [s/veh]	15.64			18.37			0.78			0.72		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	4.94											
Intersection LOS	C											

**Intersection Level Of Service Report
Intersection 3: Oregon Street & Main Street**

Control Type:	Two-way stop	Delay (sec / veh):	98.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.790

Intersection Setup

Name	Oregon Street						Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oregon Street						Main Street			Main Street		
Base Volume Input [veh/h]	68	4	59	27	10	49	28	220	37	59	405	5
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	0.00	3.40	0.00	0.00	2.00	3.60	3.20	0.00	3.40	1.20	0.00
Growth Rate	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	5	83	37	14	67	35	275	46	73	507	7
Peak Hour Factor	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	1	22	10	4	18	9	73	12	19	135	2
Total Analysis Volume [veh/h]	104	5	89	39	15	72	37	293	49	78	541	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.79	0.03	0.12	0.26	0.08	0.13	0.04	0.00	0.00	0.06	0.01	0.00
d_M, Delay for Movement [s/veh]	98.95	90.96	10.71	41.27	36.93	23.69	8.69	0.00	0.00	8.18	0.00	0.00
Movement LOS	F	F	B	E	E	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	5.05	5.05	0.42	2.42	2.42	2.42	1.75	1.75	1.75	3.09	3.09	3.09
95th-Percentile Queue Length [ft]	126.17	126.17	10.53	60.53	60.53	60.53	43.83	43.83	43.83	77.22	77.22	77.22
d_A, Approach Delay [s/veh]	59.08			30.71			0.85			1.02		
Approach LOS	F			D			A			A		
d_I, Intersection Delay [s/veh]	12.44											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 11: Oregon Street & Main Street (Allway Stop)

Control Type:	All-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Oregon Street						Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oregon Street						Main Street			Main Street		
Base Volume Input [veh/h]	31	16	57	29	7	21	29	264	2	18	188	1
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	6.30	1.80	0.00	0.00	4.80	4.90	0.00	5.60	5.60	3.80	100.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	17	59	29	7	21	27	243	2	17	173	1
Peak Hour Factor	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	5	17	9	2	6	8	72	1	5	51	0
Total Analysis Volume [veh/h]	38	20	70	34	8	25	32	287	2	20	204	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.66	0.33	2.12	1.30
95th-Percentile Queue Length [ft]	16.46	8.25	52.91	32.61
Approach Delay [s/veh]	9.23	8.94	11.17	10.09
Approach LOS	A	A	B	B
Intersection Delay [s/veh]	10.30			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 11: Oregon Street & Main Street (Allway Stop)

Control Type:	All-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Oregon Street						Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oregon Street						Main Street			Main Street		
Base Volume Input [veh/h]	68	4	59	27	10	49	28	220	37	59	405	5
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	0.00	3.40	0.00	0.00	2.00	3.60	3.20	0.00	3.40	1.20	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	4	61	27	10	49	26	202	34	54	373	5
Peak Hour Factor	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	1	16	7	3	13	7	54	9	14	100	1
Total Analysis Volume [veh/h]	76	4	65	29	11	52	28	216	36	58	398	5
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.91	0.53	2.01	4.84
95th-Percentile Queue Length [ft]	22.81	13.13	50.20	120.90
Approach Delay [s/veh]	10.66	9.91	11.90	17.05
Approach LOS	B	A	B	C
Intersection Delay [s/veh]	13.95			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 11: Oregon Street & Main Street (Allway Stop)

Control Type:	All-way stop	Delay (sec / veh):	12.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Oregon Street						Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oregon Street						Main Street			Main Street		
Base Volume Input [veh/h]	31	16	57	29	7	21	29	264	2	18	188	1
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	6.30	1.80	0.00	0.00	4.80	0.00	4.90	0.00	5.60	3.80	100.00
Growth Rate	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	23	80	39	10	29	37	330	3	23	235	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	6	22	11	3	8	10	90	1	6	64	0
Total Analysis Volume [veh/h]	48	25	87	42	11	32	40	359	3	25	255	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.98	0.48	3.68	2.04
95th-Percentile Queue Length [ft]	24.56	12.10	92.03	50.93
Approach Delay [s/veh]	10.48	9.88	14.84	12.00
Approach LOS	B	A	B	B
Intersection Delay [s/veh]	12.77			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 11: Oregon Street & Main Street (Allway Stop)

Control Type:	All-way stop	Delay (sec / veh):	41.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes		

Intersection Setup

Name	Oregon Street						Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oregon Street						Main Street			Main Street		
Base Volume Input [veh/h]	68	4	59	27	10	49	28	220	37	59	405	5
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	0.00	3.40	0.00	0.00	2.00	3.60	3.20	0.00	3.40	1.20	0.00
Growth Rate	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	5	83	37	14	67	35	275	46	73	507	7
Peak Hour Factor	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	1	22	10	4	18	9	73	12	19	135	2
Total Analysis Volume [veh/h]	104	5	89	39	15	72	37	293	49	78	541	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.78	0.98	4.72	16.44
95th-Percentile Queue Length [ft]	44.55	24.43	118.06	410.97
Approach Delay [s/veh]	14.22	12.48	19.99	68.00
Approach LOS	B	B	C	F
Intersection Delay [s/veh]	41.03			
Intersection LOS	E			

**Intersection Level Of Service Report
Intersection 3: Oregon Street & Main Street**

Control Type:	Signalized	Delay (sec / veh):	12.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.233

Intersection Setup

Name	Oregon Street						Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oregon Street						Main Street			Main Street		
Base Volume Input [veh/h]	31	16	57	29	7	21	29	264	2	18	188	1
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	6.30	1.80	0.00	0.00	4.80	4.90	0.00	5.60	5.60	3.80	100.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	17	59	29	7	21	27	243	2	17	173	1
Peak Hour Factor	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	5	17	9	2	6	8	72	1	5	51	0
Total Analysis Volume [veh/h]	38	20	70	34	8	25	32	287	2	20	204	1
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	0	29	0	0	29	0	0	31	0	0	31	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	24	24	24	26	26	26	26
g / C, Green / Cycle	0.40	0.40	0.40	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.03	0.06	0.06	0.03	0.17	0.02	0.12
s, saturation flow rate [veh/h]	1258	1415	1214	1026	1708	944	1646
c, Capacity [veh/h]	485	566	576	448	740	389	713
d1, Uniform Delay [s]	15.58	11.53	11.33	14.34	11.60	15.69	11.00
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.31	0.60	0.41	0.31	1.55	0.25	1.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	0.16	0.12	0.07	0.39	0.05	0.29
d, Delay for Lane Group [s/veh]	15.89	12.13	11.74	14.65	13.14	15.94	12.02
Lane Group LOS	B	B	B	B	B	B	B
Critical Lane Group	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh]	0.39	0.78	0.56	0.32	2.60	0.21	1.74
50th-Percentile Queue Length [ft]	9.82	19.46	14.08	7.95	65.01	5.30	43.43
95th-Percentile Queue Length [veh]	0.71	1.40	1.01	0.57	4.68	0.38	3.13
95th-Percentile Queue Length [ft]	17.68	35.03	25.35	14.30	117.03	9.53	78.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.89	12.13	12.13	11.74	11.74	11.74	14.65	13.14	13.14	15.94	12.02	12.02
Movement LOS	B	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	13.25			11.74			13.30			12.37		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	12.86											
Intersection LOS	B											
Intersection V/C	0.233											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Oregon Street & Main Street

Control Type:	Signalized	Delay (sec / veh):	13.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.304

Intersection Setup

Name	Oregon Street						Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵			+			↵↵			↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oregon Street						Main Street			Main Street		
Base Volume Input [veh/h]	68	4	59	27	10	49	28	220	37	59	405	5
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	0.00	3.40	0.00	0.00	2.00	3.60	3.20	0.00	3.40	1.20	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	4	61	27	10	49	26	202	34	54	373	5
Peak Hour Factor	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	1	16	7	3	13	7	54	9	14	100	1
Total Analysis Volume [veh/h]	76	4	65	29	11	52	28	216	36	58	398	5
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	0	27	0	0	27	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	22	22	22	28	28	28	28
g / C, Green / Cycle	0.37	0.37	0.37	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.06	0.05	0.06	0.03	0.16	0.06	0.24
s, saturation flow rate [veh/h]	1224	1466	1425	867	1616	997	1686
c, Capacity [veh/h]	479	538	601	350	754	454	787
d1, Uniform Delay [s]	15.97	12.63	12.79	16.71	10.11	14.09	11.21
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.71	0.49	0.54	0.45	1.19	0.58	2.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

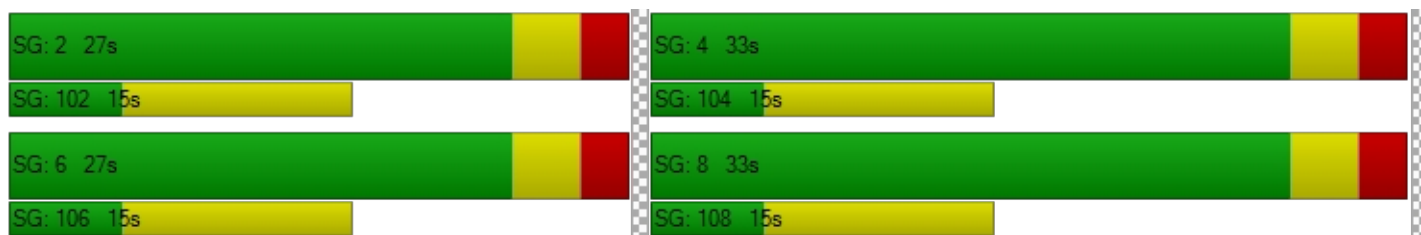
X, volume / capacity	0.16	0.13	0.15	0.08	0.33	0.13	0.51
d, Delay for Lane Group [s/veh]	16.67	13.12	13.33	17.16	11.30	14.67	13.59
Lane Group LOS	B	B	B	B	B	B	B
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.81	0.63	0.84	0.31	2.04	0.58	3.70
50th-Percentile Queue Length [ft]	20.36	15.72	21.01	7.85	51.06	14.46	92.48
95th-Percentile Queue Length [veh]	1.47	1.13	1.51	0.57	3.68	1.04	6.66
95th-Percentile Queue Length [ft]	36.65	28.30	37.82	14.13	91.92	26.02	166.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.67	13.12	13.12	13.33	13.33	13.33	17.16	11.30	11.30	14.67	13.59	13.59
Movement LOS	B	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	14.98			13.33			11.89			13.73		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	13.35											
Intersection LOS	B											
Intersection V/C	0.304											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report
Intersection 3: Oregon Street & Main Street**

Control Type:	Signalized	Delay (sec / veh):	13.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.302

Intersection Setup

Name	Oregon Street						Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oregon Street						Main Street			Main Street		
Base Volume Input [veh/h]	31	16	57	29	7	21	29	264	2	18	188	1
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	6.30	1.80	0.00	0.00	4.80	0.00	4.90	0.00	5.60	3.80	100.00
Growth Rate	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	23	80	39	10	29	37	330	3	23	235	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	6	22	11	3	8	10	90	1	6	64	0
Total Analysis Volume [veh/h]	48	25	87	42	11	32	40	359	3	25	255	1
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	0	28	0	0	28	0	0	32	0	0	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	23	23	23	27	27	27	27
g / C, Green / Cycle	0.38	0.38	0.38	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.04	0.08	0.07	0.04	0.22	0.03	0.16
s, saturation flow rate [veh/h]	1247	1415	1167	1027	1628	883	1646
c, Capacity [veh/h]	444	542	537	444	732	349	741
d1, Uniform Delay [s]	17.11	12.39	12.16	14.63	11.67	16.94	10.75
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.49	0.86	0.63	0.40	2.38	0.40	1.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

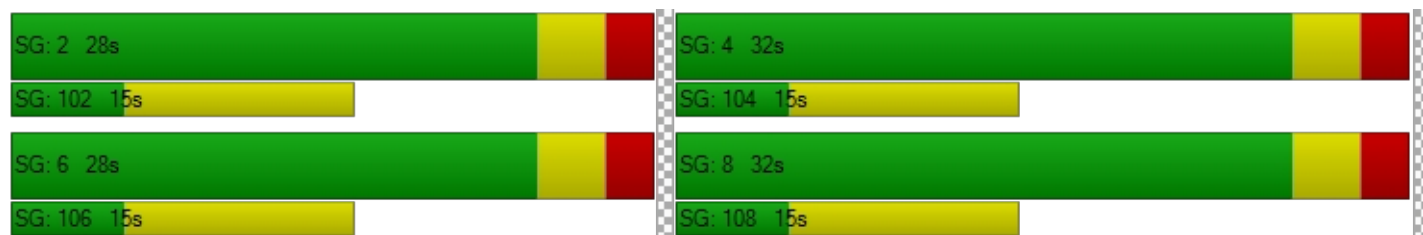
X, volume / capacity	0.11	0.21	0.16	0.09	0.49	0.07	0.35
d, Delay for Lane Group [s/veh]	17.60	13.25	12.79	15.03	14.05	17.33	12.02
Lane Group LOS	B	B	B	B	B	B	B
Critical Lane Group	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh]	0.53	1.03	0.76	0.40	3.41	0.28	2.17
50th-Percentile Queue Length [ft]	13.32	25.73	18.94	10.11	85.20	7.05	54.18
95th-Percentile Queue Length [veh]	0.96	1.85	1.36	0.73	6.13	0.51	3.90
95th-Percentile Queue Length [ft]	23.97	46.31	34.09	18.19	153.37	12.69	97.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.60	13.25	13.25	12.79	12.79	12.79	15.03	14.05	14.05	17.33	12.02	12.02
Movement LOS	B	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	14.56			12.79			14.14			12.50		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	13.59											
Intersection LOS	B											
Intersection V/C	0.302											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report
Intersection 3: Oregon Street & Main Street**

Control Type:	Signalized	Delay (sec / veh):	15.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.415

Intersection Setup

Name	Oregon Street						Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵			+			↵↵			↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oregon Street						Main Street			Main Street		
Base Volume Input [veh/h]	68	4	59	27	10	49	28	220	37	59	405	5
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	0.00	3.40	0.00	0.00	2.00	3.60	3.20	0.00	3.40	1.20	0.00
Growth Rate	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	5	83	37	14	67	35	275	46	73	507	7
Peak Hour Factor	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	1	22	10	4	18	9	73	12	19	135	2
Total Analysis Volume [veh/h]	104	5	89	39	15	72	37	293	49	78	541	7
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	0	26	0	0	26	0	0	34	0	0	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	21	21	21	29	29	29	29
g / C, Green / Cycle	0.35	0.35	0.35	0.48	0.48	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.09	0.06	0.09	0.05	0.21	0.08	0.33
s, saturation flow rate [veh/h]	1198	1465	1399	758	1616	918	1686
c, Capacity [veh/h]	405	513	568	273	781	406	815
d1, Uniform Delay [s]	19.06	13.54	13.79	20.13	10.16	15.55	11.86
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.52	0.79	0.90	1.03	1.78	1.05	4.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.18	0.22	0.14	0.44	0.19	0.67
d, Delay for Lane Group [s/veh]	20.59	14.33	14.70	21.16	11.94	16.60	16.27
Lane Group LOS	C	B	B	C	B	B	B
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.29	0.91	1.23	0.48	2.87	0.85	5.65
50th-Percentile Queue Length [ft]	32.23	22.76	30.80	12.10	71.78	21.28	141.17
95th-Percentile Queue Length [veh]	2.32	1.64	2.22	0.87	5.17	1.53	9.54
95th-Percentile Queue Length [ft]	58.01	40.97	55.45	21.78	129.20	38.30	238.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.59	14.33	14.33	14.70	14.70	14.70	21.16	11.94	11.94	16.60	16.27	16.27
Movement LOS	C	B	B	B	B	B	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	17.62			14.70			12.84			16.31		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	15.36											
Intersection LOS	B											
Intersection V/C	0.415											

Sequence

Ring 1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



MOVEMENT SUMMARY

 Site: Oregon and Main - 2016 AM

2016 AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total	HV %	v/c	sec		Vehicles	Distance		per veh	mph
		veh/h	%				veh	ft			
South: Oregon Street											
3	L2	38	0.0	0.134	5.0	LOS A	0.4	11.0	0.37	0.29	27.4
8	T1	20	6.3	0.134	5.0	LOS A	0.4	11.0	0.37	0.29	27.3
18	R2	70	1.8	0.134	5.0	LOS A	0.4	11.0	0.37	0.29	26.8
Approach		128	2.0	0.134	5.0	LOS A	0.4	11.0	0.37	0.29	27.0
East: Main Street											
1	L2	20	5.6	0.196	4.9	LOS A	0.7	17.6	0.19	0.10	27.8
6	T1	204	3.8	0.196	4.9	LOS A	0.7	17.6	0.19	0.10	27.7
16	R2	1	100.0	0.196	4.9	LOS A	0.7	17.6	0.19	0.10	26.9
Approach		225	4.4	0.196	4.9	LOS A	0.7	17.6	0.19	0.10	27.7
North: Town Pump Access											
7	L2	34	0.0	0.066	4.1	LOS A	0.2	5.1	0.30	0.21	27.5
4	T1	8	0.0	0.066	4.1	LOS A	0.2	5.1	0.30	0.21	27.4
14	R2	25	4.8	0.066	4.1	LOS A	0.2	5.1	0.30	0.21	26.8
Approach		67	1.8	0.066	4.1	LOS A	0.2	5.1	0.30	0.21	27.2
West: Main Street											
5	L2	32	4.9	0.263	5.3	LOS A	1.0	26.1	0.17	0.08	27.6
2	T1	287	0.0	0.263	5.3	LOS A	1.0	26.1	0.17	0.08	27.6
12	R2	2	5.6	0.263	5.3	LOS A	1.0	26.1	0.17	0.08	27.0
Approach		321	0.5	0.263	5.3	LOS A	1.0	26.1	0.17	0.08	27.6
All Vehicles		741	2.1	0.263	5.0	LOS A	1.0	26.1	0.22	0.13	27.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 Site: Oregon and Main - 2016 PM

2016 PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Oregon Street											
3	L2	75	0.0	0.143	4.8	LOS A	0.5	11.9	0.33	0.24	27.2
8	T1	4	0.0	0.143	4.8	LOS A	0.5	11.9	0.33	0.24	27.1
18	R2	65	3.4	0.143	4.8	LOS A	0.5	11.9	0.33	0.24	26.5
Approach		145	1.5	0.143	4.8	LOS A	0.5	11.9	0.33	0.24	26.9
East: Main Street											
1	L2	58	3.4	0.395	7.1	LOS A	1.8	45.8	0.27	0.15	27.0
6	T1	398	1.2	0.395	7.1	LOS A	1.8	45.8	0.27	0.15	26.9
16	R2	5	0.0	0.395	7.1	LOS A	1.8	45.8	0.27	0.15	26.4
Approach		460	1.5	0.395	7.1	LOS A	1.8	45.8	0.27	0.15	26.9
North: Town Pump Access											
7	L2	29	0.0	0.110	5.4	LOS A	0.3	8.7	0.44	0.40	27.3
4	T1	11	0.0	0.110	5.4	LOS A	0.3	8.7	0.44	0.40	27.2
14	R2	52	2.0	0.110	5.4	LOS A	0.3	8.7	0.44	0.40	26.6
Approach		92	1.1	0.110	5.4	LOS A	0.3	8.7	0.44	0.40	26.9
West: Main Street											
5	L2	27	3.6	0.242	5.3	LOS A	0.9	22.9	0.21	0.11	27.6
2	T1	216	3.2	0.242	5.3	LOS A	0.9	22.9	0.21	0.11	27.5
12	R2	36	0.0	0.242	5.3	LOS A	0.9	22.9	0.21	0.11	27.0
Approach		280	2.8	0.242	5.3	LOS A	0.9	22.9	0.21	0.11	27.5
All Vehicles		978	1.8	0.395	6.1	LOS A	1.8	45.8	0.28	0.18	27.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 Site: Oregon and Main - 2040 AM

2040 AM
 Roundabout
 Design Life Analysis (Practical Capacity): Results for 24 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Oregon Street											
3	L2	48	0.0	0.179	5.8	LOS A	0.6	15.1	0.42	0.38	27.2
8	T1	25	6.3	0.179	5.8	LOS A	0.6	15.1	0.42	0.38	27.1
18	R2	88	1.8	0.179	5.8	LOS A	0.6	15.1	0.42	0.38	26.5
Approach		160	2.0	0.179	5.8	LOS A	0.6	15.1	0.42	0.38	26.8
East: Main Street											
1	L2	24	5.6	0.250	5.5	LOS A	0.9	23.7	0.23	0.13	27.6
6	T1	256	3.8	0.250	5.5	LOS A	0.9	23.7	0.23	0.13	27.5
16	R2	1	100.0	0.250	5.5	LOS A	0.9	23.7	0.23	0.13	26.7
Approach		282	4.4	0.250	5.5	LOS A	0.9	23.7	0.23	0.13	27.5
North: Town Pump Access											
7	L2	43	0.0	0.087	4.5	LOS A	0.3	6.9	0.35	0.26	27.3
4	T1	10	0.0	0.087	4.5	LOS A	0.3	6.9	0.35	0.26	27.2
14	R2	31	4.8	0.087	4.5	LOS A	0.3	6.9	0.35	0.26	26.6
Approach		84	1.8	0.087	4.5	LOS A	0.3	6.9	0.35	0.26	27.1
West: Main Street											
5	L2	39	4.9	0.334	6.2	LOS A	1.4	36.1	0.21	0.10	27.3
2	T1	359	0.0	0.334	6.2	LOS A	1.4	36.1	0.21	0.10	27.3
12	R2	3	5.6	0.334	6.2	LOS A	1.4	36.1	0.21	0.10	26.7
Approach		401	0.5	0.334	6.2	LOS A	1.4	36.1	0.21	0.10	27.3
All Vehicles		927	2.1	0.334	5.7	LOS A	1.4	36.1	0.26	0.17	27.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 Site: Oregon and Main - 2040 PM

2040 PM
 Roundabout
 Design Life Analysis (Practical Capacity): Results for 24 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Oregon Street											
3	L2	103	0.0	0.210	5.9	LOS A	0.7	18.3	0.41	0.35	26.8
8	T1	6	0.0	0.210	5.9	LOS A	0.7	18.3	0.41	0.35	26.8
18	R2	89	3.4	0.210	5.9	LOS A	0.7	18.3	0.41	0.35	26.2
Approach		198	1.5	0.210	5.9	LOS A	0.7	18.3	0.41	0.35	26.6
East: Main Street											
1	L2	79	3.4	0.554	9.8	LOS A	3.2	80.3	0.40	0.27	26.1
6	T1	541	1.2	0.554	9.8	LOS A	3.2	80.3	0.40	0.27	26.1
16	R2	7	0.0	0.554	9.8	LOS A	3.2	80.3	0.40	0.27	25.6
Approach		626	1.5	0.554	9.8	LOS A	3.2	80.3	0.40	0.27	26.1
North: Town Pump Access											
7	L2	39	0.0	0.173	6.9	LOS A	0.6	14.0	0.52	0.52	26.8
4	T1	15	0.0	0.173	6.9	LOS A	0.6	14.0	0.52	0.52	26.7
14	R2	71	2.0	0.173	6.9	LOS A	0.6	14.0	0.52	0.52	26.1
Approach		125	1.1	0.173	6.9	LOS A	0.6	14.0	0.52	0.52	26.4
West: Main Street											
5	L2	37	3.6	0.338	6.5	LOS A	1.4	35.6	0.28	0.17	27.2
2	T1	294	3.2	0.338	6.5	LOS A	1.4	35.6	0.28	0.17	27.1
12	R2	49	0.0	0.338	6.5	LOS A	1.4	35.6	0.28	0.17	26.6
Approach		381	2.8	0.338	6.5	LOS A	1.4	35.6	0.28	0.17	27.1
All Vehicles		1330	1.8	0.554	8.0	LOS A	3.2	80.3	0.38	0.28	26.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection Level Of Service Report
Intersection 8: Nelson Road & Frontage Road

Control Type:	Signalized	Delay (sec / veh):	12.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.290

Intersection Setup

Name	Nelson Road		Frontage Road		Frontage Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	300.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Nelson Road		Frontage Road		Frontage Road	
Base Volume Input [veh/h]	57	32	11	374	147	17
Base Volume Adjustment Factor	1.0000	1.0000	0.8100	0.8100	0.8100	0.8100
Heavy Vehicles Percentage [%]	3.50	15.60	0.00	3.50	6.10	5.90
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	57	32	9	303	119	14
Peak Hour Factor	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	9	3	88	35	4
Total Analysis Volume [veh/h]	66	37	10	353	139	16
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	5	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	2.0	0.0	0.0	2.0	2.0	0.0
Split [s]	28	0	0	32	32	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	0.0	0.0	3.0	3.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	C	R
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	23	27	27	27	27
g / C, Green / Cycle	0.38	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.08	0.01	0.21	0.09	0.01
s, saturation flow rate [veh/h]	1350	1143	1652	1612	1373
c, Capacity [veh/h]	518	537	743	725	618
d1, Uniform Delay [s]	12.35	12.21	11.54	9.93	9.18
k, delay calibration	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.86	0.06	2.17	0.59	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

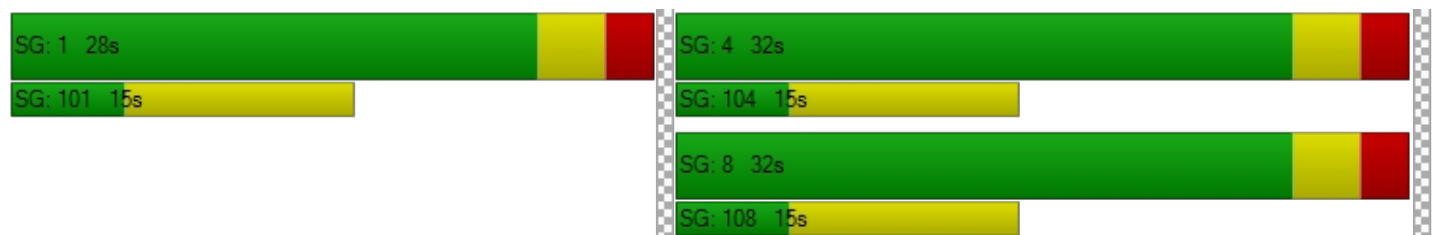
X, volume / capacity	0.20	0.02	0.47	0.19	0.03
d, Delay for Lane Group [s/veh]	13.21	12.28	13.71	10.52	9.26
Lane Group LOS	B	B	B	B	A
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	0.95	0.09	3.27	1.07	0.11
50th-Percentile Queue Length [ft]	23.71	2.18	81.70	26.85	2.87
95th-Percentile Queue Length [veh]	1.71	0.16	5.88	1.93	0.21
95th-Percentile Queue Length [ft]	42.67	3.92	147.07	48.33	5.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.21	13.21	12.28	13.71	10.52	9.26
Movement LOS	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	13.21		13.67		10.39	
Approach LOS	B		B		B	
d_I, Intersection Delay [s/veh]	12.78					
Intersection LOS	B					
Intersection V/C	0.290					

Sequence




Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report
Intersection 8: Nelson Road & Frontage Road**

Control Type:	Signalized	Delay (sec / veh):	10.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.260

Intersection Setup

Name	Nelson Road		Frontage Road		Frontage Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	300.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Nelson Road		Frontage Road		Frontage Road	
Base Volume Input [veh/h]	24	11	21	241	440	50
Base Volume Adjustment Factor	1.0000	1.0000	0.8100	0.8100	0.8100	0.8100
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	1.60	4.80	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	11	17	195	356	41
Peak Hour Factor	0.9240	0.9240	0.9240	0.9240	0.9240	0.9240
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	3	5	53	96	11
Total Analysis Volume [veh/h]	26	12	18	211	385	44
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	5	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	2.0	0.0	0.0	2.0	2.0	0.0
Split [s]	24	0	0	36	36	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	0.0	0.0	3.0	3.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	C	R
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	19	31	31	31	31
g / C, Green / Cycle	0.32	0.52	0.52	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.02	0.02	0.13	0.24	0.03
s, saturation flow rate [veh/h]	1569	913	1683	1632	1425
c, Capacity [veh/h]	497	425	870	843	736
d1, Uniform Delay [s]	14.36	13.57	8.01	9.17	7.23
k, delay calibration	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	0.19	0.66	1.78	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

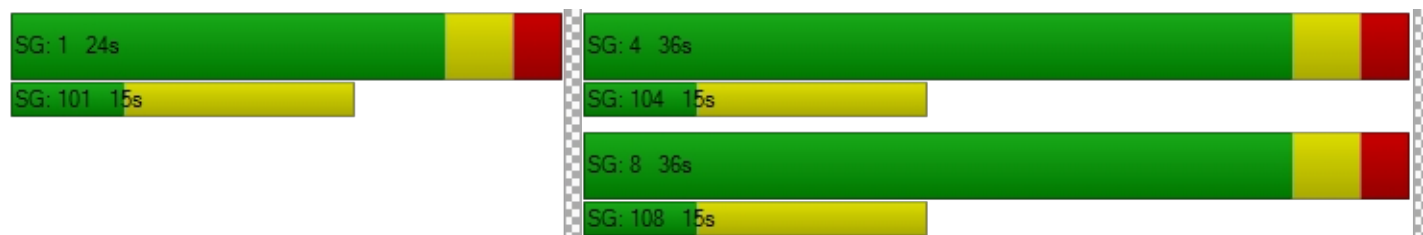
X, volume / capacity	0.08	0.04	0.24	0.46	0.06
d, Delay for Lane Group [s/veh]	14.66	13.76	8.67	10.95	7.39
Lane Group LOS	B	B	A	B	A
Critical Lane Group	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.37	0.17	1.41	3.02	0.27
50th-Percentile Queue Length [ft]	9.31	4.32	35.19	75.58	6.66
95th-Percentile Queue Length [veh]	0.67	0.31	2.53	5.44	0.48
95th-Percentile Queue Length [ft]	16.77	7.78	63.33	136.04	12.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.66	14.66	13.76	8.67	10.95	7.39
Movement LOS	B	B	B	A	B	A
d_A, Approach Delay [s/veh]	14.66		9.07		10.59	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	10.31					
Intersection LOS	B					
Intersection V/C	0.260					

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Nelson Road & Frontage Road

Control Type:	Signalized	Delay (sec / veh):	13.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.370

Intersection Setup

Name	Nelson Road		Frontage Road		Frontage Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	300.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Nelson Road		Frontage Road		Frontage Road	
Base Volume Input [veh/h]	57	32	11	374	147	17
Base Volume Adjustment Factor	1.0000	1.0000	0.8100	0.8100	0.8100	0.8100
Heavy Vehicles Percentage [%]	3.50	15.60	0.00	3.50	6.10	5.90
Growth Rate	1.36	1.36	1.36	1.36	1.36	1.36
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	44	12	412	162	19
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	12	3	112	44	5
Total Analysis Volume [veh/h]	85	48	13	448	176	21
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	5	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	2.0	0.0	0.0	2.0	2.0	0.0
Split [s]	27	0	0	33	33	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	0.0	0.0	3.0	3.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	C	R
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	22	28	28	28	28
g / C, Green / Cycle	0.37	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.10	0.01	0.27	0.11	0.02
s, saturation flow rate [veh/h]	1350	1105	1652	1612	1373
c, Capacity [veh/h]	495	527	771	752	641
d1, Uniform Delay [s]	13.35	12.13	11.71	9.58	8.67
k, delay calibration	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.33	0.09	3.18	0.73	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

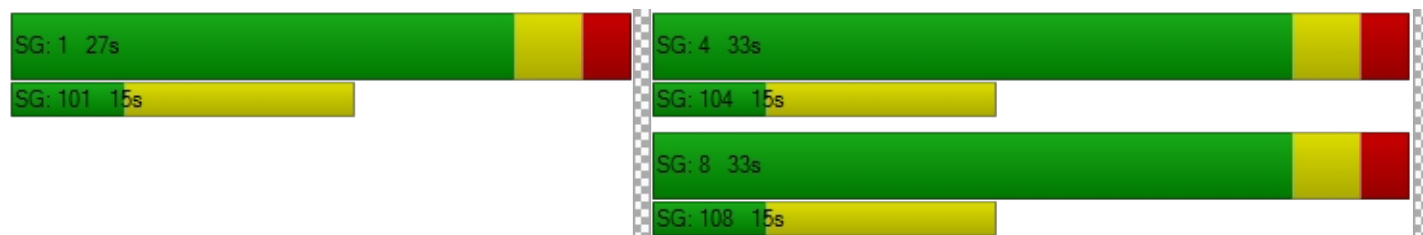
X, volume / capacity	0.27	0.02	0.58	0.23	0.03
d, Delay for Lane Group [s/veh]	14.68	12.21	14.89	10.31	8.76
Lane Group LOS	B	B	B	B	A
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	1.31	0.11	4.37	1.34	0.15
50th-Percentile Queue Length [ft]	32.87	2.83	109.32	33.47	3.63
95th-Percentile Queue Length [veh]	2.37	0.20	7.80	2.41	0.26
95th-Percentile Queue Length [ft]	59.16	5.10	195.06	60.25	6.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.68	14.68	12.21	14.89	10.31	8.76
Movement LOS	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	14.68		14.82		10.14	
Approach LOS	B		B		B	
d_I, Intersection Delay [s/veh]	13.63					
Intersection LOS	B					
Intersection V/C	0.370					

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Oregon Street & Main Street

Control Type:	Signalized	Delay (sec / veh):	15.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.415

Intersection Setup

Name	Oregon Street						Main Street			Main Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵			+			↵↵			↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oregon Street						Main Street			Main Street		
Base Volume Input [veh/h]	68	4	59	27	10	49	28	220	37	59	405	5
Base Volume Adjustment Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Heavy Vehicles Percentage [%]	0.00	0.00	3.40	0.00	0.00	2.00	3.60	3.20	0.00	3.40	1.20	0.00
Growth Rate	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	5	83	37	14	67	35	275	46	73	507	7
Peak Hour Factor	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	1	22	10	4	18	9	73	12	19	135	2
Total Analysis Volume [veh/h]	104	5	89	39	15	72	37	293	49	78	541	7
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	0	26	0	0	26	0	0	34	0	0	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	21	21	21	29	29	29	29
g / C, Green / Cycle	0.35	0.35	0.35	0.48	0.48	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.09	0.06	0.09	0.05	0.21	0.08	0.33
s, saturation flow rate [veh/h]	1198	1465	1399	758	1616	918	1686
c, Capacity [veh/h]	405	513	568	273	781	406	815
d1, Uniform Delay [s]	19.06	13.54	13.79	20.13	10.16	15.55	11.86
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.52	0.79	0.90	1.03	1.78	1.05	4.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.18	0.22	0.14	0.44	0.19	0.67
d, Delay for Lane Group [s/veh]	20.59	14.33	14.70	21.16	11.94	16.60	16.27
Lane Group LOS	C	B	B	C	B	B	B
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.29	0.91	1.23	0.48	2.87	0.85	5.65
50th-Percentile Queue Length [ft]	32.23	22.76	30.80	12.10	71.78	21.28	141.17
95th-Percentile Queue Length [veh]	2.32	1.64	2.22	0.87	5.17	1.53	9.54
95th-Percentile Queue Length [ft]	58.01	40.97	55.45	21.78	129.20	38.30	238.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.59	14.33	14.33	14.70	14.70	14.70	21.16	11.94	11.94	16.60	16.27	16.27
Movement LOS	C	B	B	B	B	B	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	17.62			14.70			12.84			16.31		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	15.36											
Intersection LOS	B											
Intersection V/C	0.415											

Sequence

Ring 1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

