Appendix

Turning Movement Counts

Synchro HCM Reports

Sidra Reports

Preliminary Signal Warrants

Turning Movement Counts

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Cascade Hwy -- S Beavercreek Rd

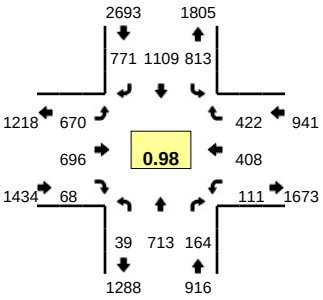
CITY/STATE: Oregon City, OR

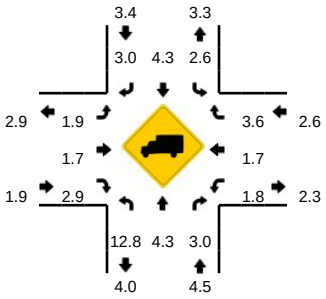
QC JOB #: 14414702

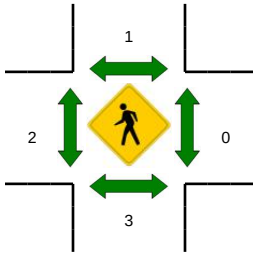
DATE: Tue, May 16 2017

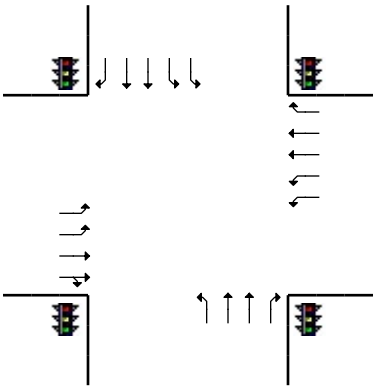
Peak-Hour: 4:30 PM -- 5:30 PM

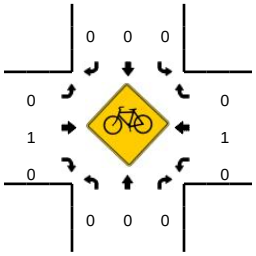
Peak 15-Min: 5:05 PM -- 5:20 PM

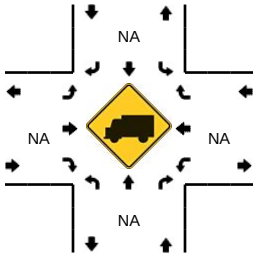


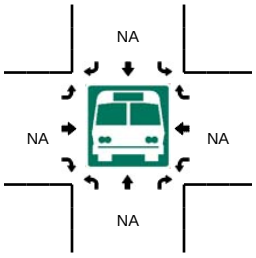












5-Min Count Period Beginning At	Cascade Hwy (Northbound)				Cascade Hwy (Southbound)				S Beavercreek Rd (Eastbound)				S Beavercreek Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	63	14	0	45	74	63	0	59	55	8	0	9	41	33	0	467	5599
4:05 PM	3	45	12	0	63	83	76	0	54	63	10	0	6	32	34	0	481	5635
4:10 PM	3	70	11	0	46	104	66	0	52	52	8	1	4	33	40	0	490	5692
4:15 PM	1	58	10	0	58	86	56	1	61	53	3	0	21	26	29	0	463	5702
4:20 PM	2	44	12	0	57	87	65	0	44	56	7	0	17	51	36	0	478	5719
4:25 PM	4	46	14	0	71	78	68	0	44	72	7	0	16	27	36	0	483	5724
4:30 PM	5	62	19	0	65	79	63	0	49	62	4	0	7	32	25	0	472	5735
4:35 PM	2	58	11	0	66	118	60	0	49	55	7	0	7	32	41	0	506	5801
4:40 PM	6	54	17	0	63	70	64	0	61	64	4	0	15	35	35	0	488	5761
4:45 PM	3	59	14	0	68	102	69	0	68	61	7	0	12	26	46	0	535	5842
4:50 PM	4	51	16	0	59	97	58	0	55	58	6	0	10	45	31	0	490	5856
4:55 PM	5	67	9	0	56	112	63	0	47	56	10	0	14	33	24	0	496	5849
5:00 PM	5	52	13	0	88	81	62	0	48	65	8	0	6	35	27	0	490	5872
5:05 PM	0	67	17	0	55	59	78	0	78	61	4	0	7	34	29	0	489	5880
5:10 PM	2	57	8	0	76	102	67	0	62	63	6	0	9	30	50	0	532	5922
5:15 PM	4	56	18	0	74	91	48	0	57	61	3	0	10	41	48	0	511	5970
5:20 PM	3	64	12	0	68	95	68	0	45	51	7	0	4	33	36	0	486	5978
5:25 PM	0	66	10	0	75	103	71	0	51	39	2	0	10	32	30	0	489	5984
5:30 PM	3	48	12	0	70	84	44	0	50	54	10	0	6	30	33	0	444	5956
5:35 PM	1	70	8	0	64	102	72	0	56	49	8	0	11	29	32	0	502	5952
5:40 PM	6	36	14	0	76	73	55	0	62	70	2	0	11	40	44	0	489	5953
5:45 PM	3	59	20	0	66	97	53	0	52	65	2	0	15	33	19	0	484	5902
5:50 PM	4	71	15	0	56	93	57	0	35	53	5	0	6	28	27	0	450	5862
5:55 PM	6	45	11	0	61	70	51	0	47	54	5	0	11	30	24	0	415	5781

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	720	172	0	820	1008	772	0	788	740	52	0	104	420	508	0	6128
Heavy Trucks	0	36	4		24	60	20		0	8	0		4	12	12		180
Pedestrians		8				0				4				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

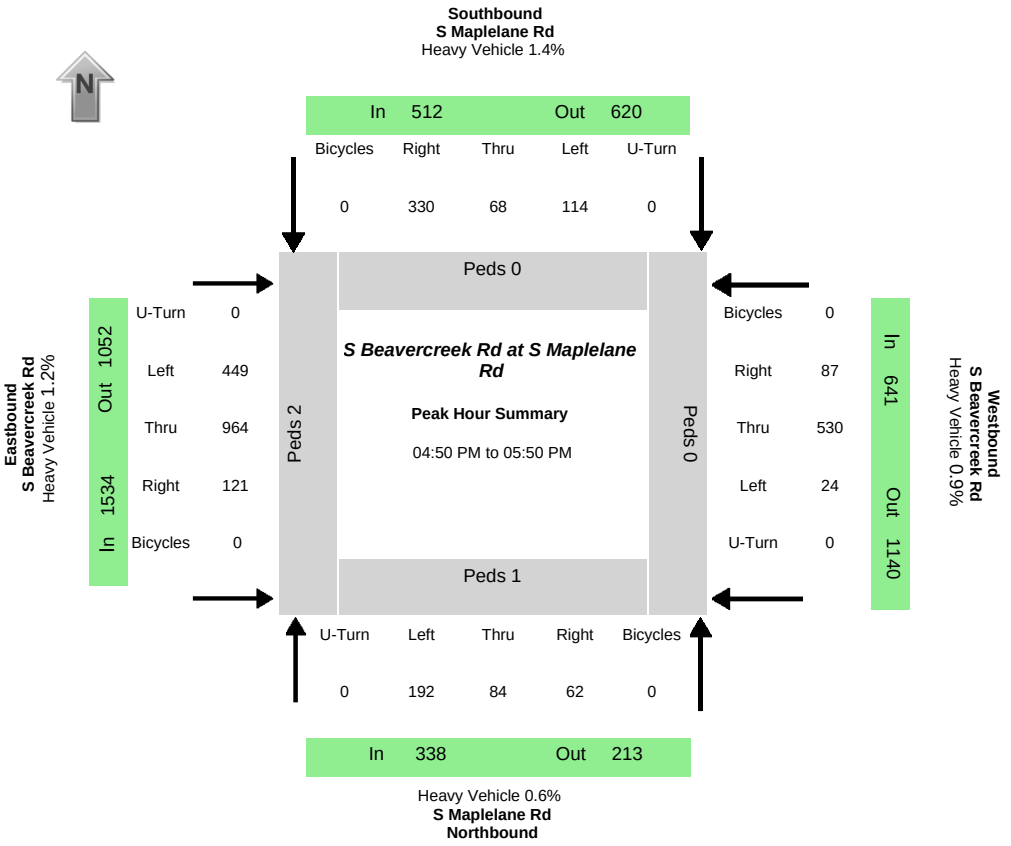
Comments:

Report generated on 5/22/2017 3:28 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*S Maplelane Rd*
E/W street	*S Beavercreek Rd*
City, State	Oregon City OR
Site Notes	
Location	45.331096 - -122.572045
Start Date	Tuesday, April 23, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:50:00 PM
Peak 15 Min Start	05:05:00 PM
PHF (15-Min Int)	0.96



Peak-Hour Volumes (PHV)																								
Northbound				**Southbound**				**Eastbound**				**Westbound**				**Entering**				**Leaving**			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
192	84	62	0	114	68	330	0	449	964	121	0	24	530	87	0	338	512	1534	641	213	620	1052	1140
Percent Heavy Vehicles																							
0.0%	1.2%	1.6%	0.0%	5.3%	0.0%	0.3%	0.0%	0.9%	1.3%	0.8%	0.0%	0.0%	1.1%	0.0%	0.0%	0.6%	1.4%	1.2%	0.9%	0.5%	0.8%	0.7%	1.8%

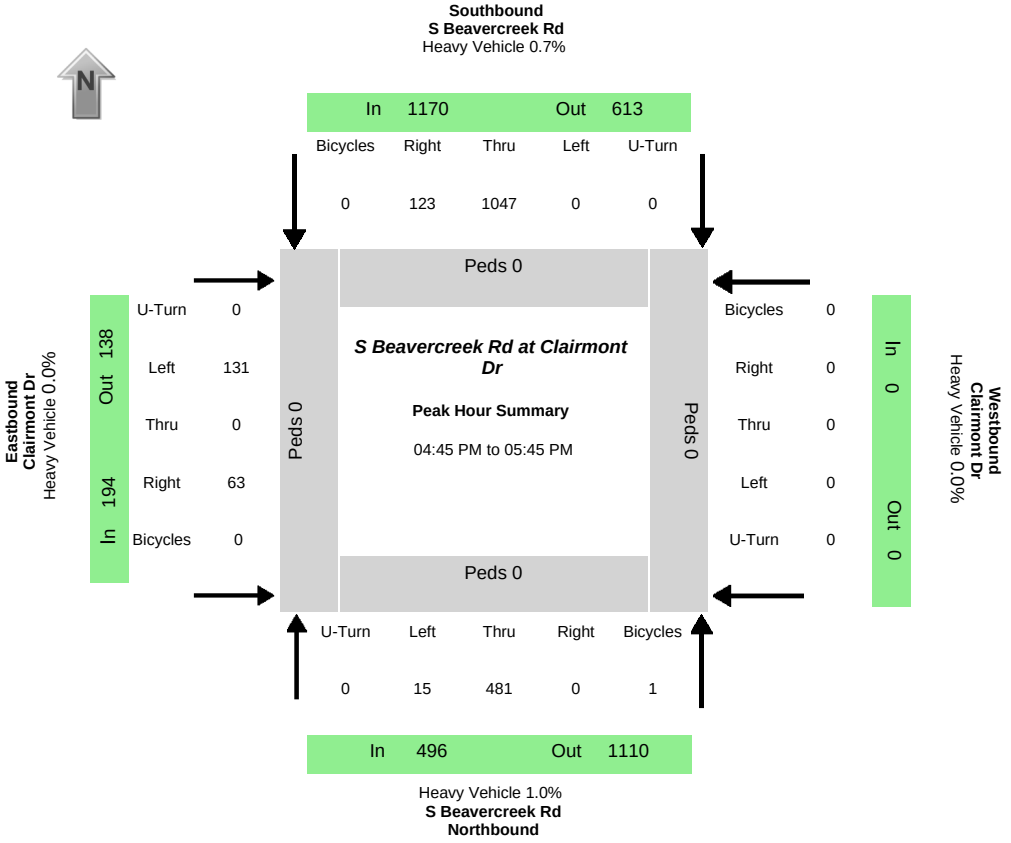
PHV- Bicycles																	PHV - Pedestrians				
Northbound				**Southbound**				**Eastbound**				**Westbound**					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**	NB	SB	EB	WB	**Sum**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	3

All Vehicle Volumes

	Northbound S Maplelane Rd				**Southbound** S Maplelane Rd				**Eastbound** S Beavercreek Rd				**Westbound** S Beavercreek Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	13	1	2	0	7	5	22	0	36	93	11	0	2	46	6	0		
04:05:00 PM	23	5	3	0	8	6	19	0	26	58	9	0	5	38	8	0		
04:10:00 PM	16	10	2	0	11	6	23	0	48	93	10	0	0	39	3	0	713	
04:15:00 PM	19	2	5	0	6	5	21	0	35	56	7	0	0	38	8	0	671	
04:20:00 PM	15	4	3	0	7	6	25	0	34	91	7	0	0	34	6	0	695	
04:25:00 PM	14	4	7	0	10	2	18	0	22	61	4	0	1	37	5	0	619	
04:30:00 PM	10	3	4	0	3	5	23	0	37	85	16	0	1	38	6	0	648	
04:35:00 PM	14	3	2	0	4	2	20	0	45	66	10	0	4	54	7	0	647	
04:40:00 PM	16	6	11	0	9	5	40	0	29	84	11	0	0	44	4	0	721	
04:45:00 PM	12	7	5	0	5	3	24	0	35	100	6	0	1	42	8	0	738	
04:50:00 PM	15	4	3	0	5	5	21	0	36	76	7	0	3	56	12	0	750	
04:55:00 PM	15	6	6	0	11	12	18	0	28	79	15	0	1	37	12	0	731	2784
05:00:00 PM	36	6	6	0	2	2	20	0	39	87	10	0	0	42	3	0	736	2793
05:05:00 PM	19	11	5	0	18	3	32	0	37	56	4	0	4	49	9	0	740	2832
05:10:00 PM	10	8	2	0	14	8	32	0	35	87	12	0	2	64	8	0	782	2853
05:15:00 PM	17	6	6	0	7	2	29	0	50	82	9	0	2	41	8	0	788	2910
05:20:00 PM	6	7	6	0	5	0	40	0	54	84	4	0	0	34	3	0	784	2921
05:25:00 PM	14	8	4	0	10	10	32	0	34	92	8	0	3	51	6	0	774	3008
05:30:00 PM	11	10	9	0	10	4	21	0	41	60	11	0	0	32	4	0	728	2990
05:35:00 PM	13	2	4	0	7	6	28	0	33	90	14	0	1	36	9	0	728	3002
05:40:00 PM	22	9	9	0	13	10	29	0	30	83	11	0	4	36	5	0	717	3004
05:45:00 PM	14	7	2	0	12	6	28	0	32	88	16	0	4	52	8	0	773	3025
05:50:00 PM	15	11	4	0	7	3	23	0	28	69	11	0	0	44	2	0	747	2999
05:55:00 PM	20	5	7	0	8	5	27	0	37	62	6	0	0	29	5	0	697	2970

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*S Beavercreek Rd*
E/W street	*Clairmont Dr*
City, State	Oregon City OR
Site Notes	
Location	45.326787 - -122.566487
Start Date	Tuesday, April 23, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:45:00 PM
Peak 15 Min Start	04:45:00 PM
PHF (15-Min Int)	0.95



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
15	481	0	0	0	1047	123	0	131	0	63	0	0	0	0	0	496	1170	194	0	1110	612	138	0

Percent Heavy Vehicles

0.0%	1.0%	0.0%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.7%	0.0%	0.0%	0.7%	0.8%	0.0%	0.0%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum
0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

PHV - Pedestrians

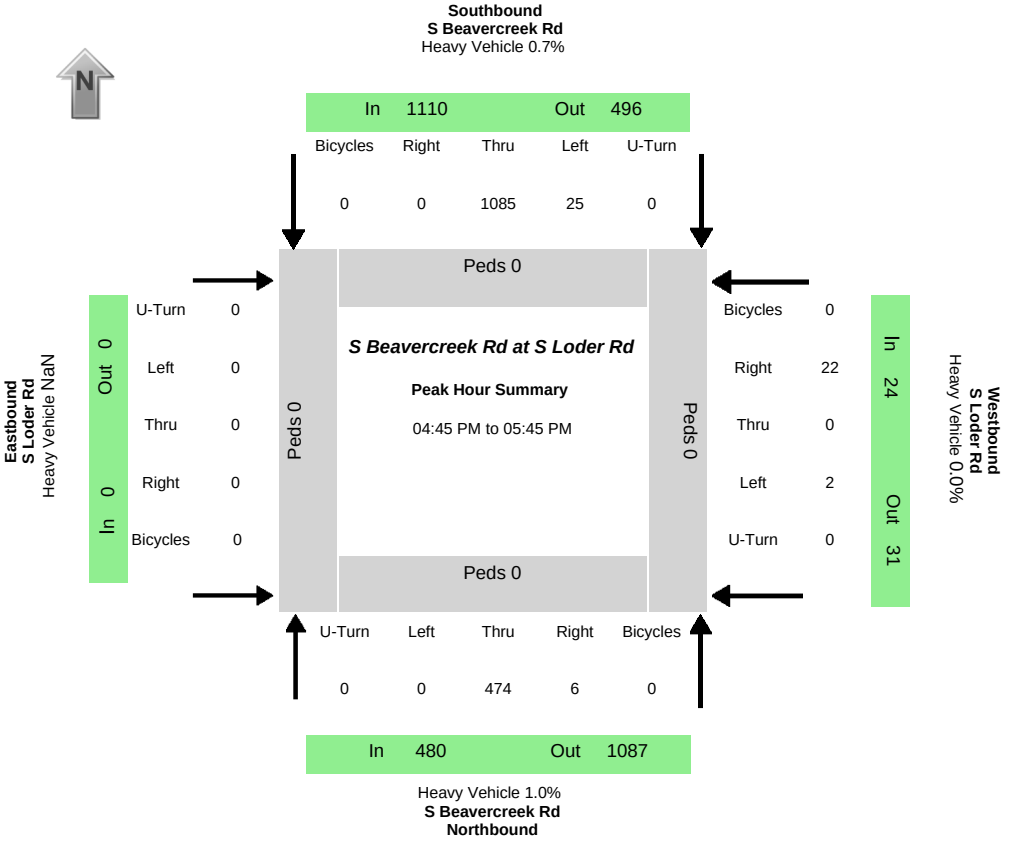
in Crosswalk				
NB	SB	EB	WB	Sum
0	0	0	0	0

All Vehicle Volumes

	Northbound S Beavercreek Rd				Southbound S Beavercreek Rd				Eastbound Clairmont Dr				Westbound Clairmont Dr				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	3	43	0	0	0	74	7	0	8	0	7	0	0	0	0	0		
04:05:00 PM	2	33	0	0	0	87	8	0	14	0	4	0	0	0	0	0		
04:10:00 PM	2	43	0	0	0	99	5	0	6	0	2	0	0	0	0	0	447	
04:15:00 PM	1	36	0	0	0	66	13	0	4	0	1	0	0	0	0	0	426	
04:20:00 PM	1	39	0	0	0	78	6	0	6	0	4	0	0	0	0	0	412	
04:25:00 PM	1	30	0	0	0	76	8	0	2	0	3	0	0	0	0	0	375	
04:30:00 PM	1	45	0	0	0	74	7	0	9	0	4	0	0	0	0	0	394	
04:35:00 PM	1	32	0	0	0	78	4	0	18	0	1	0	0	0	0	0	394	
04:40:00 PM	3	42	0	0	0	88	8	0	8	0	5	0	0	0	0	0	428	
04:45:00 PM	0	47	0	0	0	96	13	0	11	0	6	0	0	0	0	0	461	
04:50:00 PM	2	51	0	0	0	93	12	0	8	0	9	0	0	0	0	0	502	
04:55:00 PM	0	31	0	0	0	85	4	0	14	0	6	0	0	0	0	0	488	1738
05:00:00 PM	3	41	0	0	0	87	9	0	8	0	4	0	0	0	0	0	467	1748
05:05:00 PM	0	42	0	0	0	70	10	0	31	0	3	0	0	0	0	0	448	1756
05:10:00 PM	2	40	0	0	0	87	11	0	9	0	4	0	0	0	0	0	461	1752
05:15:00 PM	1	38	0	0	0	90	8	0	7	0	4	0	0	0	0	0	457	1779
05:20:00 PM	1	41	0	0	0	89	13	0	7	0	5	0	0	0	0	0	457	1801
05:25:00 PM	1	31	0	0	0	88	4	0	9	0	3	0	0	0	0	0	440	1817
05:30:00 PM	0	35	0	0	0	73	11	0	9	0	7	0	0	0	0	0	427	1812
05:35:00 PM	1	42	0	0	0	87	9	0	6	0	3	0	0	0	0	0	419	1826
05:40:00 PM	4	42	0	0	0	102	19	0	12	0	9	0	0	0	0	0	471	1860
05:45:00 PM	2	36	0	0	0	87	13	0	4	0	3	0	0	0	0	0	481	1832
05:50:00 PM	2	40	0	0	0	97	12	0	6	0	2	0	0	0	0	0	492	1816
05:55:00 PM	6	36	0	0	0	71	11	0	8	0	3	0	0	0	0	0	439	1811

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*S Beavercreek Rd*
E/W street	*S Loder Rd*
City, State	Oregon City OR
Site Notes	
Location	45.323869 - -122.562808
Start Date	Tuesday, April 23, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:45:00 PM
Peak 15 Min Start	04:45:00 PM
PHF (15-Min Int)	0.94



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	474	6	0	25	1085	0	0	0	0	0	0	2	0	22	0	480	1110	0	24	1087	496	0	31

Percent Heavy Vehicles

0.0%	1.1%	0.0%	0.0%	8.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.7%	NaN	0.0%	0.6%	1.0%	NaN	6.5%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHV - Pedestrians

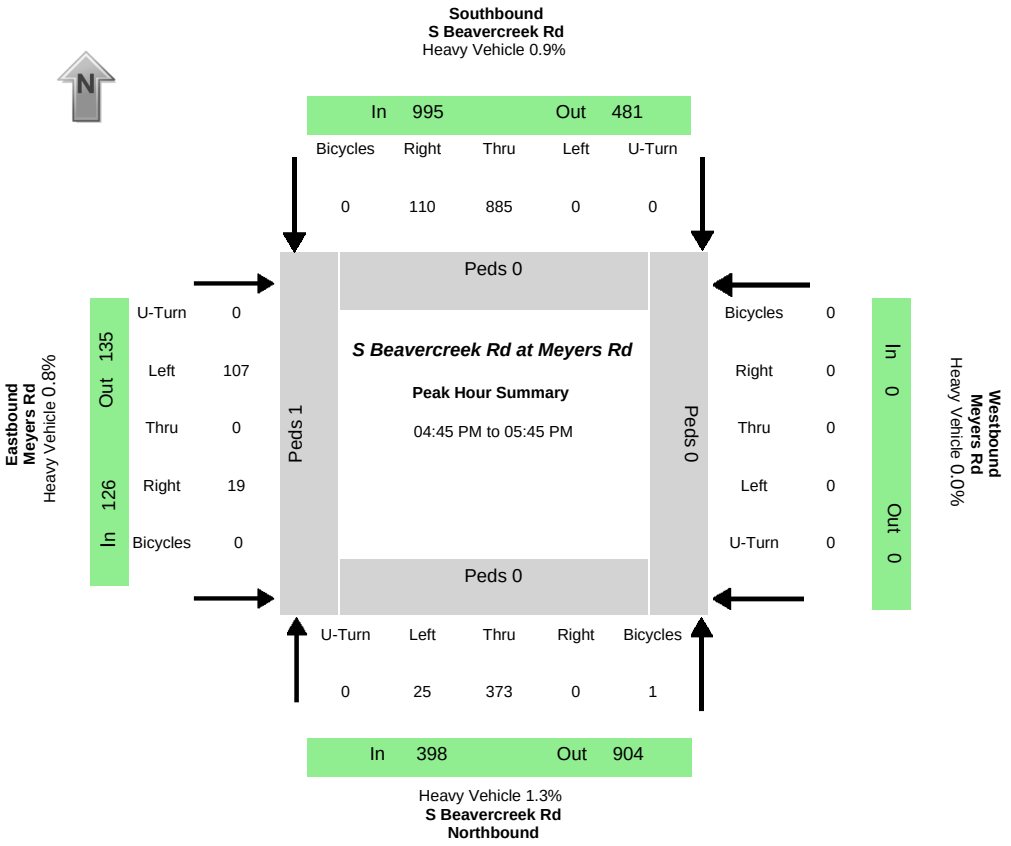
in Crosswalk				
NB	SB	EB	WB	Sum
0	0	0	0	0

All Vehicle Volumes

	Northbound S Beavercreek Rd				Southbound S Beavercreek Rd				Eastbound S Loder Rd				Westbound S Loder Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	44	1	0	1	80	0	0	0	0	0	0	1	0	2	0		
04:05:00 PM	0	34	1	0	0	91	0	0	0	0	0	0	0	0	1	0		
04:10:00 PM	0	44	0	0	3	98	0	0	0	0	0	0	1	0	1	0	403	
04:15:00 PM	0	37	1	0	1	66	0	0	0	0	0	0	0	0	0	0	379	
04:20:00 PM	0	39	1	0	2	80	0	0	0	0	0	0	1	0	1	0	376	
04:25:00 PM	0	30	0	0	3	76	0	0	0	0	0	0	0	0	1	0	339	
04:30:00 PM	0	43	1	0	0	78	0	0	0	0	0	0	0	0	3	0	359	
04:35:00 PM	0	31	0	0	1	78	0	0	0	0	0	0	0	0	2	0	347	
04:40:00 PM	0	43	0	0	5	88	0	0	0	0	0	0	0	0	2	0	375	
04:45:00 PM	0	43	1	0	1	101	0	0	0	0	0	0	0	0	4	0	400	
04:50:00 PM	0	51	1	0	1	101	0	0	0	0	0	0	0	0	2	0	444	
04:55:00 PM	0	29	0	0	2	89	0	0	0	0	0	0	0	0	2	0	428	1545
05:00:00 PM	0	42	1	0	2	89	0	0	0	0	0	0	0	0	2	0	414	1552
05:05:00 PM	0	41	1	0	2	71	0	0	0	0	0	0	0	0	1	0	374	1541
05:10:00 PM	0	41	0	0	1	90	0	0	0	0	0	0	0	0	1	0	385	1527
05:15:00 PM	0	38	0	0	4	90	0	0	0	0	0	0	0	0	1	0	382	1555
05:20:00 PM	0	41	1	0	1	93	0	0	0	0	0	0	0	0	1	0	403	1568
05:25:00 PM	0	28	0	0	2	89	0	0	0	0	0	0	2	0	4	0	395	1583
05:30:00 PM	0	33	1	0	3	77	0	0	0	0	0	0	0	0	2	0	378	1574
05:35:00 PM	0	43	0	0	0	90	0	0	0	0	0	0	0	0	0	0	374	1595
05:40:00 PM	0	44	0	0	6	105	0	0	0	0	0	0	0	0	2	0	406	1614
05:45:00 PM	0	38	0	0	3	87	0	0	0	0	0	0	0	0	0	0	418	1592
05:50:00 PM	0	39	0	0	3	96	0	0	0	0	0	0	0	0	3	0	426	1577
05:55:00 PM	0	41	1	0	2	72	0	0	0	0	0	0	0	0	1	0	386	1572

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*S Beavercreek Rd*
E/W street	*Meyers Rd*
City, State	Oregon City OR
Site Notes	
Location	45.319726 - -122.557943
Start Date	Tuesday, April 23, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:45:00 PM
Peak 15 Min Start	04:45:00 PM
PHF (15-Min Int)	0.95



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
25	373	0	0	0	885	110	0	107	0	19	0	0	0	0	0	398	995	126	0	904	480	135	0

Percent Heavy Vehicles

8.0%	0.8%	0.0%	0.0%	0.0%	0.2%	6.4%	0.0%	0.0%	0.0%	5.3%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	0.9%	0.8%	0.0%	0.3%	0.6%	6.7%	0.0%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum
0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

PHV - Pedestrians

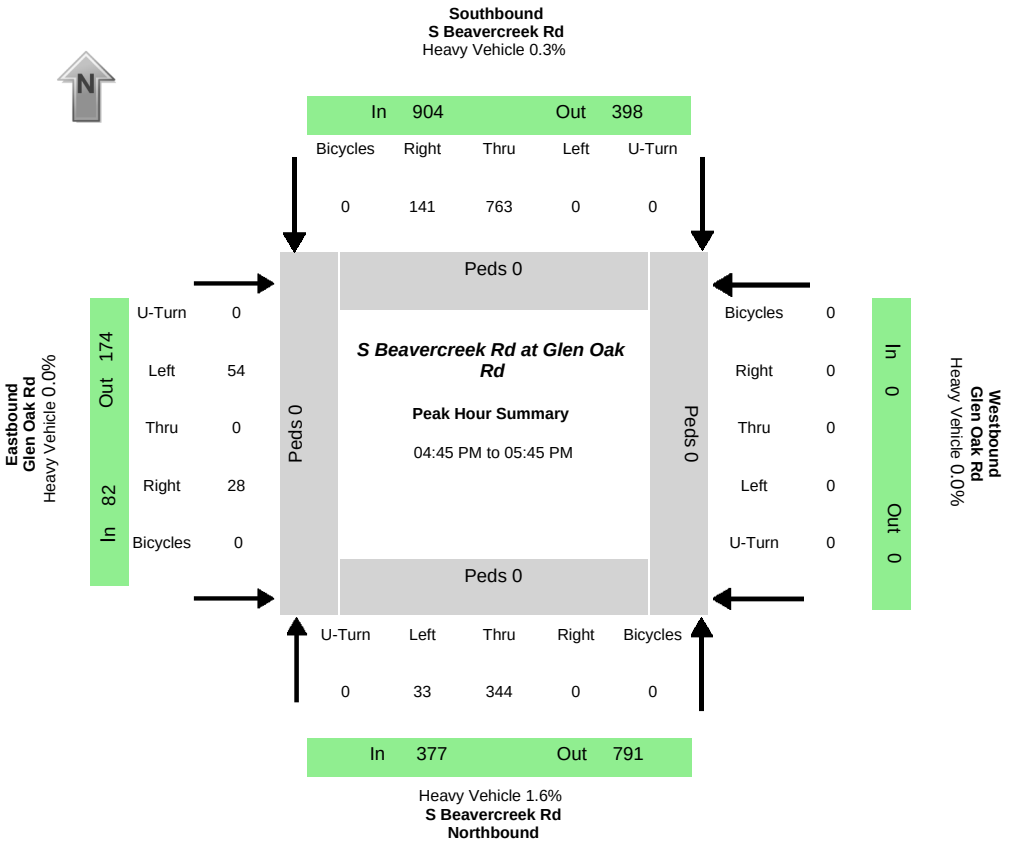
in Crosswalk				
NB	SB	EB	WB	Sum
0	0	1	0	1

All Vehicle Volumes

	Northbound S Beavercreek Rd				Southbound S Beavercreek Rd				Eastbound Meyers Rd				Westbound Meyers Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	1	35	0	0	0	63	13	0	11	0	4	0	0	0	0	0		
04:05:00 PM	0	18	0	0	0	74	12	0	14	0	0	0	0	0	0	0		
04:10:00 PM	1	29	0	0	0	79	12	0	11	0	2	0	0	0	0	0	379	
04:15:00 PM	0	30	0	0	0	67	5	0	8	0	2	0	0	0	0	0	364	
04:20:00 PM	0	25	0	0	0	70	9	0	5	0	1	0	0	0	0	0	356	
04:25:00 PM	2	25	0	0	0	64	12	0	9	0	4	0	0	0	0	0	338	
04:30:00 PM	2	33	0	0	0	66	7	0	10	0	0	0	0	0	0	0	344	
04:35:00 PM	2	28	0	0	0	70	15	0	8	0	0	0	0	0	0	0	357	
04:40:00 PM	0	38	0	0	0	57	15	0	4	0	0	0	0	0	0	0	355	
04:45:00 PM	2	45	0	0	0	78	8	0	8	0	0	0	0	0	0	0	378	
04:50:00 PM	7	36	0	0	0	74	10	0	6	0	3	0	0	0	0	0	391	
04:55:00 PM	4	20	0	0	0	73	14	0	10	0	2	0	0	0	0	0	400	1472
05:00:00 PM	2	28	0	0	0	76	1	0	15	0	1	0	0	0	0	0	382	1468
05:05:00 PM	0	34	0	0	0	49	15	0	8	0	1	0	0	0	0	0	353	1457
05:10:00 PM	1	28	0	0	0	79	7	0	11	0	1	0	0	0	0	0	357	1450
05:15:00 PM	3	31	0	0	0	75	10	0	5	0	1	0	0	0	0	0	359	1463
05:20:00 PM	4	32	0	0	0	63	13	0	10	0	5	0	0	0	0	0	379	1480
05:25:00 PM	0	28	0	0	0	89	7	0	3	0	0	0	0	0	0	0	379	1491
05:30:00 PM	1	22	0	0	0	77	8	0	6	0	1	0	0	0	0	0	369	1488
05:35:00 PM	1	35	0	0	0	57	8	0	14	0	2	0	0	0	0	0	359	1482
05:40:00 PM	0	34	0	0	0	95	9	0	11	0	2	0	0	0	0	0	383	1519
05:45:00 PM	2	22	0	0	0	69	13	0	10	0	0	0	0	0	0	0	384	1494
05:50:00 PM	3	36	0	0	0	76	11	0	8	0	1	0	0	0	0	0	402	1493
05:55:00 PM	3	32	0	0	0	61	9	0	8	0	0	0	0	0	0	0	364	1483

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*S Beavercreek Rd*
E/W street	*Glen Oak Rd*
City, State	Oregon City OR
Site Notes	
Location	45.317037 - -122.554661
Start Date	Tuesday, April 23, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:45:00 PM
Peak 15 Min Start	04:45:00 PM
PHF (15-Min Int)	0.95



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
33	344	0	0	0	763	141	0	54	0	28	0	0	0	0	0	377	904	82	0	791	398	174	0

Percent Heavy Vehicles

3.0%	1.5%	0.0%	0.0%	0.0%	0.3%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	0.3%	0.0%	0.0%	0.3%	1.3%	1.1%	0.0%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHV - Pedestrians

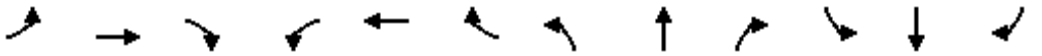
in Crosswalk				
NB	SB	EB	WB	Sum
0	0	0	0	0

All Vehicle Volumes

	Northbound S Beavercreek Rd				Southbound S Beavercreek Rd				Eastbound Glen Oak Rd				Westbound Glen Oak Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	3	34	0	0	0	55	12	0	2	0	1	0	0	0	0	0		
04:05:00 PM	4	18	0	0	0	63	11	0	0	0	5	0	0	0	0	0		
04:10:00 PM	1	26	0	0	0	69	12	0	4	0	1	0	0	0	0	0	321	
04:15:00 PM	4	26	0	0	0	61	8	0	4	0	3	0	0	0	0	0	320	
04:20:00 PM	2	20	0	0	0	59	12	0	5	0	1	0	0	0	0	0	318	
04:25:00 PM	5	26	0	0	0	63	5	0	1	0	0	0	0	0	0	0	305	
04:30:00 PM	1	32	0	0	0	57	9	0	3	0	1	0	0	0	0	0	302	
04:35:00 PM	3	28	0	0	0	63	7	0	2	0	0	0	0	0	0	0	306	
04:40:00 PM	2	32	0	0	0	50	7	0	6	0	2	0	0	0	0	0	305	
04:45:00 PM	2	34	0	0	0	56	22	0	13	0	1	0	0	0	0	0	330	
04:50:00 PM	2	41	0	0	0	66	11	0	2	0	2	0	0	0	0	0	351	
04:55:00 PM	3	22	0	0	0	63	12	0	2	0	3	0	0	0	0	0	357	1288
05:00:00 PM	2	24	0	0	0	77	0	0	6	0	3	0	0	0	0	0	341	1293
05:05:00 PM	3	30	0	0	0	37	13	0	4	0	3	0	0	0	0	0	307	1282
05:10:00 PM	2	24	0	0	0	70	10	0	5	0	3	0	0	0	0	0	316	1283
05:15:00 PM	3	29	0	0	0	66	10	0	5	0	2	0	0	0	0	0	319	1292
05:20:00 PM	3	32	0	0	0	63	5	0	4	0	2	0	0	0	0	0	338	1302
05:25:00 PM	1	25	0	0	0	71	18	0	3	0	4	0	0	0	0	0	346	1324
05:30:00 PM	4	20	0	0	0	64	14	0	3	0	2	0	0	0	0	0	338	1328
05:35:00 PM	3	30	0	0	0	46	13	0	6	0	2	0	0	0	0	0	329	1325
05:40:00 PM	5	33	0	0	0	84	13	0	1	0	1	0	0	0	0	0	344	1363
05:45:00 PM	0	22	0	0	0	55	14	0	2	0	3	0	0	0	0	0	333	1331
05:50:00 PM	2	32	0	0	0	65	12	0	7	0	3	0	0	0	0	0	354	1328
05:55:00 PM	4	30	0	0	0	56	5	0	5	0	0	0	0	0	0	0	317	1323

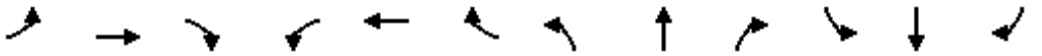
DKS

Synchro HCM Reports



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	490	950	70	110	665	535	65	765	130	980	1510	665
Future Volume (vph)	490	950	70	110	665	535	65	765	130	980	1510	665
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3495		3433	3539	1553	1597	3471	1568	3400	3471	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3495		3433	3539	1553	1597	3471	1568	3400	3471	1568
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	500	969	71	112	679	546	66	781	133	1000	1541	679
RTOR Reduction (vph)	0	5	0	0	0	386	0	0	106	0	0	268
Lane Group Flow (vph)	500	1035	0	112	679	160	66	781	27	1000	1541	411
Confl. Peds. (#/hr)	1		3	3		1			2	2		
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	2%	2%	3%	2%	2%	4%	13%	4%	3%	3%	4%	3%
Turn Type	Prot	NA		Prot	NA	Prot	Prot	NA	Prot	Prot	NA	Prot
Protected Phases	7	4		3	8	8	1	6	6	5	2	2
Permitted Phases												
Actuated Green, G (s)	14.7	31.1		4.1	20.5	20.5	4.0	20.8	20.8	32.5	49.3	49.3
Effective Green, g (s)	15.2	31.6		4.6	21.0	21.0	4.5	22.8	22.8	33.0	51.3	51.3
Actuated g/C Ratio	0.14	0.28		0.04	0.19	0.19	0.04	0.20	0.20	0.29	0.46	0.46
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	465	986		140	663	291	64	706	319	1001	1589	718
v/s Ratio Prot	0.15	c0.30		0.03	c0.19	0.10	0.04	c0.22	0.02	c0.29	0.44	0.26
v/s Ratio Perm												
v/c Ratio	1.08	1.05		0.80	1.02	0.55	1.03	1.11	0.08	1.00	0.97	0.57
Uniform Delay, d1	48.4	40.2		53.2	45.5	41.2	53.8	44.6	36.1	39.5	29.6	22.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	63.4	42.6		26.0	41.2	1.6	121.5	66.8	0.2	28.0	16.0	1.6
Delay (s)	111.8	82.8		79.3	86.7	42.8	175.2	111.4	36.4	67.5	45.6	23.9
Level of Service	F	F		E	F	D	F	F	D	E	D	C
Approach Delay (s)		92.2			68.2			105.5			47.8	
Approach LOS		F			E			F			D	

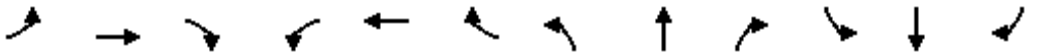
Intersection Summary			
HCM 2000 Control Delay	69.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	475	1440	115	30	815	55	180	110	110	60	70	315
Future Volume (vph)	475	1440	115	30	815	55	180	110	110	60	70	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3535		1805	3537		1805	1718		1717	1900	1615
Flt Permitted	0.95	1.00		0.95	1.00		0.46	1.00		0.45	1.00	1.00
Satd. Flow (perm)	1787	3535		1805	3537		882	1718		806	1900	1615
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	485	1469	117	31	832	56	184	112	112	61	71	321
RTOR Reduction (vph)	0	4	0	0	3	0	0	26	0	0	0	80
Lane Group Flow (vph)	485	1582	0	31	885	0	184	198	0	61	71	241
Confl. Peds. (#/hr)	1					1			2	2		
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	0%	1%	2%	5%	0%	0%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases							8			4		4
Actuated Green, G (s)	37.2	81.0		2.8	46.6		29.5	17.9		16.4	9.3	46.5
Effective Green, g (s)	37.2	81.5		2.8	47.1		30.0	18.4		17.4	9.8	46.5
Actuated g/C Ratio	0.29	0.65		0.02	0.37		0.24	0.15		0.14	0.08	0.37
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	4.0
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	526	2281		40	1319		327	250		165	147	594
v/s Ratio Prot	c0.27	c0.45		0.02	0.25		c0.07	c0.12		0.02	0.04	0.12
v/s Ratio Perm							0.06			0.03		0.03
v/c Ratio	0.92	0.69		0.78	0.67		0.56	0.79		0.37	0.48	0.41
Uniform Delay, d1	43.1	14.4		61.4	33.1		41.0	52.1		48.7	55.8	29.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	21.8	1.8		59.7	2.7		1.8	15.3		1.0	1.8	0.3
Delay (s)	64.9	16.2		121.1	35.8		42.8	67.4		49.7	57.6	30.0
Level of Service	E	B		F	D		D	E		D	E	C
Approach Delay (s)		27.6			38.7			56.3			37.0	
Approach LOS		C			D			E			D	

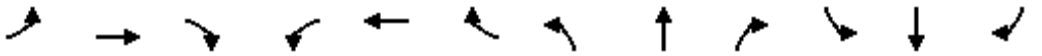
Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	126.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	20	10	10	10	60	10	485	45	15	1145	125
Future Volume (vph)	60	20	10	10	10	60	10	485	45	15	1145	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95			0.90		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1805			1696		1752	1859		1805	1870	
Flt Permitted	0.69	1.00			0.96		0.10	1.00		0.44	1.00	
Satd. Flow (perm)	1306	1805			1639		190	1859		842	1870	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	61	20	10	10	10	61	10	495	46	15	1168	128
RTOR Reduction (vph)	0	9	0	0	55	0	0	2	0	0	3	0
Lane Group Flow (vph)	61	21	0	0	26	0	10	539	0	15	1293	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	3%	1%	0%	0%	0%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	7.8	7.8			7.8		66.8	66.8		66.8	66.8	
Effective Green, g (s)	7.8	7.8			7.8		66.8	66.8		66.8	66.8	
Actuated g/C Ratio	0.09	0.09			0.09		0.81	0.81		0.81	0.81	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	123	170			154		153	1503		680	1512	
v/s Ratio Prot		0.01						0.29			c0.69	
v/s Ratio Perm	c0.05				0.02		0.05			0.02		
v/c Ratio	0.50	0.12			0.17		0.07	0.36		0.02	0.86	
Uniform Delay, d1	35.5	34.3			34.4		1.6	2.1		1.5	4.9	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.1	0.3			0.5		0.2	0.1		0.0	5.0	
Delay (s)	38.7	34.6			34.9		1.8	2.3		1.6	9.9	
Level of Service	D	C			C		A	A		A	A	
Approach Delay (s)		37.3			34.9			2.3			9.8	
Approach LOS		D			C			A			A	

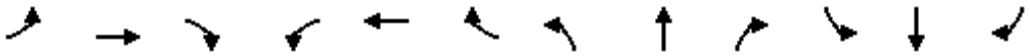
Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	82.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	85	65	70	65	40	20	785	95	75	1350	190
Future Volume (vph)	190	85	65	70	65	40	20	785	95	75	1350	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.94			0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.99			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1693			1805		1805	1849		1805	1881	1615
Flt Permitted	0.55	0.94			0.62		0.06	1.00		0.23	1.00	1.00
Satd. Flow (perm)	988	1608			1150		116	1849		432	1881	1615
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	194	87	66	71	66	41	20	801	97	77	1378	194
RTOR Reduction (vph)	0	24	0	0	12	0	0	5	0	0	0	28
Lane Group Flow (vph)	169	154	0	0	166	0	20	893	0	77	1378	166
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	custom	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases					8			2			6	
Permitted Phases	4	4		8			2			6		6
Actuated Green, G (s)	16.7	16.7			16.7		65.5	65.5		65.5	65.5	65.5
Effective Green, g (s)	16.7	16.7			16.7		65.5	65.5		65.5	65.5	65.5
Actuated g/C Ratio	0.19	0.19			0.19		0.73	0.73		0.73	0.73	0.73
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	182	297			212		84	1342		313	1365	1172
v/s Ratio Prot								0.48			c0.73	
v/s Ratio Perm	c0.17	0.10			0.14		0.17			0.18		0.10
v/c Ratio	0.93	0.52			0.78		0.24	0.67		0.25	1.01	0.14
Uniform Delay, d1	36.2	33.1			35.0		4.1	6.5		4.1	12.4	3.8
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	46.1	1.5			16.9		1.5	1.3		0.4	26.7	0.1
Delay (s)	82.2	34.7			51.9		5.6	7.8		4.5	39.1	3.8
Level of Service	F	C			D		A	A		A	D	A
Approach Delay (s)		57.8			51.9			7.8			33.3	
Approach LOS		E			D			A			C	

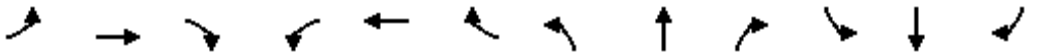
Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	100.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



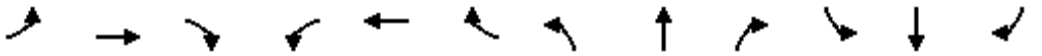
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	105	80	10	110	60	45	780	20	50	1295	140
Future Volume (vph)	60	105	80	10	110	60	45	780	20	50	1295	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.96			0.95			1.00			0.99	
Flt Protected		0.99			1.00			1.00			1.00	
Satd. Flow (prot)		1794			1810			1872			1852	
Flt Permitted		0.75			0.97			0.86			0.95	
Satd. Flow (perm)		1368			1764			1608			1763	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	61	107	82	10	112	61	46	796	20	51	1321	143
RTOR Reduction (vph)	0	20	0	0	20	0	0	1	0	0	4	0
Lane Group Flow (vph)	0	230	0	0	163	0	0	861	0	0	1511	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	8%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.0			16.0			66.5			66.5	
Effective Green, g (s)		16.0			16.0			66.5			66.5	
Actuated g/C Ratio		0.18			0.18			0.73			0.73	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		241			311			1181			1295	
v/s Ratio Prot												
v/s Ratio Perm		c0.17			0.09			0.54			c0.86	
v/c Ratio		0.96			0.52			0.73			1.17	
Uniform Delay, d1		36.9			33.8			6.9			12.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		45.2			1.6			2.3			83.7	
Delay (s)		82.1			35.4			9.1			95.7	
Level of Service		F			D			A			F	
Approach Delay (s)		82.1			35.4			9.1			95.7	
Approach LOS		F			D			A			F	

Intersection Summary			
HCM 2000 Control Delay	64.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	90.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	126.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



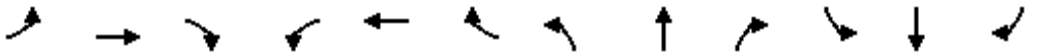
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	20	20	180	25	280	25	505	75	170	1085	130
Future Volume (vph)	110	20	20	180	25	280	25	505	75	170	1085	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93			0.92		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1715			1720		1671	1841		1803	1857	
Flt Permitted	0.37	1.00			0.86		0.06	1.00		0.37	1.00	
Satd. Flow (perm)	712	1715			1508		114	1841		706	1857	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	112	20	20	184	26	286	26	515	77	173	1107	133
RTOR Reduction (vph)	0	16	0	0	54	0	0	6	0	0	5	0
Lane Group Flow (vph)	112	24	0	0	442	0	26	586	0	173	1235	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	5%	0%	0%	0%	8%	1%	0%	0%	0%	6%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	20.0	20.0			20.0		62.0	62.0		62.0	62.0	
Effective Green, g (s)	20.0	20.0			20.0		62.0	62.0		62.0	62.0	
Actuated g/C Ratio	0.22	0.22			0.22		0.69	0.69		0.69	0.69	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	158	381			335		78	1268		486	1279	
v/s Ratio Prot		0.01						0.32			c0.67	
v/s Ratio Perm	0.16				c0.29		0.23			0.25		
v/c Ratio	0.71	0.06			1.32		0.33	0.46		0.36	0.97	
Uniform Delay, d1	32.3	27.6			35.0		5.7	6.4		5.8	13.0	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	13.6	0.1			162.7		11.1	1.2		2.0	18.2	
Delay (s)	45.9	27.7			197.7		16.8	7.6		7.8	31.2	
Level of Service	D	C			F		B	A		A	C	
Approach Delay (s)		41.1			197.7			8.0			28.4	
Approach LOS		D			F			A			C	

Intersection Summary			
HCM 2000 Control Delay	55.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	113.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	735	825	80	165	585	730	40	695	170	855	1145	750
Future Volume (vph)	735	825	80	165	585	730	40	695	170	855	1145	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3482		3433	3539	1553	1597	3471	1568	3400	3471	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3482		3433	3539	1553	1597	3471	1568	3400	3471	1568
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	750	842	82	168	597	745	41	709	173	872	1168	765
RTOR Reduction (vph)	0	6	0	0	0	385	0	0	135	0	0	277
Lane Group Flow (vph)	750	918	0	168	597	360	41	709	38	872	1168	488
Confl. Peds. (#/hr)	1		3	3		1			2	2		
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	2%	2%	3%	2%	2%	4%	13%	4%	3%	3%	4%	3%
Turn Type	Prot	NA		Prot	NA	Prot	Prot	NA	Prot	Prot	NA	Prot
Protected Phases	7	4		3	8	8	1	6	6	5	2	2
Permitted Phases												
Actuated Green, G (s)	14.7	31.1		4.1	20.5	20.5	3.2	22.3	22.3	30.7	49.8	49.8
Effective Green, g (s)	15.2	31.6		4.6	21.0	21.0	3.7	24.3	24.3	31.2	51.8	51.8
Actuated g/C Ratio	0.14	0.28		0.04	0.19	0.19	0.03	0.22	0.22	0.28	0.46	0.46
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	467	985		141	665	291	52	755	341	949	1609	727
v/s Ratio Prot	c0.22	0.26		0.05	0.17	c0.23	0.03	c0.20	0.02	c0.26	0.34	0.31
v/s Ratio Perm												
v/c Ratio	1.61	0.93		1.19	0.90	1.24	0.79	0.94	0.11	0.92	0.73	0.67
Uniform Delay, d1	48.2	39.0		53.6	44.3	45.4	53.6	43.0	35.0	39.0	24.2	23.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	282.6	14.8		136.4	14.7	132.8	51.6	19.7	0.3	13.4	2.0	3.0
Delay (s)	330.8	53.8		189.9	59.0	178.2	105.2	62.7	35.3	52.4	26.2	26.3
Level of Service	F	D		F	E	F	F	E	D	D	C	C
Approach Delay (s)		177.9			132.3			59.4			34.4	
Approach LOS		F			F			E			C	

Intersection Summary			
HCM 2000 Control Delay	93.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	111.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	465	970	315	75	755	115	380	130	95	105	135	350
Future Volume (vph)	465	970	315	75	755	115	380	130	95	105	135	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.98		1.00	0.94		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3443		1805	3497		1805	1743		1717	1900	1615
Flt Permitted	0.95	1.00		0.95	1.00		0.31	1.00		0.41	1.00	1.00
Satd. Flow (perm)	1787	3443		1805	3497		594	1743		740	1900	1615
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	474	990	321	77	770	117	388	133	97	107	138	357
RTOR Reduction (vph)	0	21	0	0	8	0	0	18	0	0	0	29
Lane Group Flow (vph)	474	1290	0	77	879	0	388	212	0	107	138	328
Confl. Peds. (#/hr)	1					1			2	2		
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	0%	1%	2%	5%	0%	0%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases							8			4		4
Actuated Green, G (s)	38.7	79.6		5.0	45.9		37.8	21.9		25.7	14.3	53.0
Effective Green, g (s)	38.7	80.1		5.0	46.4		38.3	22.4		26.7	14.8	53.0
Actuated g/C Ratio	0.29	0.59		0.04	0.34		0.28	0.17		0.20	0.11	0.39
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	4.0
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	510	2036		66	1198		342	288		231	207	632
v/s Ratio Prot	c0.27	0.37		0.04	c0.25		c0.16	0.12		0.04	0.07	0.15
v/s Ratio Perm							c0.16			0.05		0.05
v/c Ratio	0.93	0.63		1.17	0.73		1.13	0.73		0.46	0.67	0.52
Uniform Delay, d1	47.0	18.1		65.2	39.1		44.9	53.7		46.6	57.9	31.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	23.4	1.5		162.9	4.0		90.3	8.8		1.1	7.1	0.5
Delay (s)	70.4	19.6		228.1	43.1		135.2	62.5		47.7	65.0	32.0
Level of Service	E	B		F	D		F	E		D	E	C
Approach Delay (s)		33.1			57.9			108.2			42.4	
Approach LOS		C			E			F			D	

Intersection Summary			
HCM 2000 Control Delay	52.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	135.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	62.8

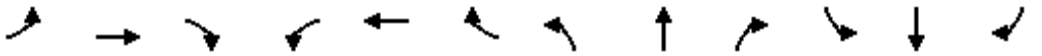
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	30	30	60	35	175	35	355	40	85	740	140
Future Vol, veh/h	65	30	30	60	35	175	35	355	40	85	740	140
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	115	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	3	1	0	0	0	1
Mvmt Flow	66	31	31	61	36	179	36	362	41	87	755	143

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1563	1476	827	1487	1527	383	898	0	0	403	0	0
Stage 1	1001	1001	-	455	455	-	-	-	-	-	-	-
Stage 2	562	475	-	1032	1072	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.2	-	-
Pot Cap-1 Maneuver	92	127	375	104	119	669	752	-	-	1167	-	-
Stage 1	295	323	-	589	572	-	-	-	-	-	-	-
Stage 2	515	561	-	284	299	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 45	112	375	69	105	669	752	-	-	1167	-	-
Mov Cap-2 Maneuver	~ 45	112	-	69	105	-	-	-	-	-	-	-
Stage 1	281	299	-	561	545	-	-	-	-	-	-	-
Stage 2	336	534	-	217	277	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	249.5	296.8	0.8	0.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	752	-	-	45	172	184	1167	-	-
HCM Lane V/C Ratio	0.047	-	-	1.474	0.356	1.497	0.074	-	-
HCM Control Delay (s)	10	-	-	$ 445.5	37.1	296.8	8.3	-	-
HCM Lane LOS	B	-	-	F	E	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	6.5	1.5	17.4	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	10	75	70	10	155	65	800	35	70	985	140
Future Volume (vph)	125	10	75	70	10	155	65	800	35	70	985	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.89			0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.99			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1592			1705		1805	1868		1805	1881	1615
Flt Permitted	0.49	0.94			0.87		0.14	1.00		0.22	1.00	1.00
Satd. Flow (perm)	882	1511			1505		267	1868		427	1881	1615
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	128	10	77	71	10	158	66	816	36	71	1005	143
RTOR Reduction (vph)	0	61	0	0	76	0	0	2	0	0	0	34
Lane Group Flow (vph)	111	43	0	0	163	0	66	850	0	71	1005	109
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	custom	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases					8			2			6	
Permitted Phases	4	4		8			2			6		6
Actuated Green, G (s)	13.2	13.2			13.2		42.9	42.9		42.9	42.9	42.9
Effective Green, g (s)	13.2	13.2			13.2		42.9	42.9		42.9	42.9	42.9
Actuated g/C Ratio	0.21	0.21			0.21		0.67	0.67		0.67	0.67	0.67
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	181	311			309		178	1250		285	1258	1080
v/s Ratio Prot								0.45			c0.53	
v/s Ratio Perm	c0.13	0.03			0.11		0.25			0.17		0.07
v/c Ratio	0.61	0.14			0.53		0.37	0.68		0.25	0.80	0.10
Uniform Delay, d1	23.1	20.8			22.7		4.7	6.4		4.2	7.5	3.8
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.0	0.2			1.6		1.3	1.5		0.5	3.6	0.0
Delay (s)	29.2	21.0			24.3		6.0	8.0		4.7	11.2	3.8
Level of Service	C	C			C		A	A		A	B	A
Approach Delay (s)		25.2			24.3			7.8			9.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	64.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	645.3

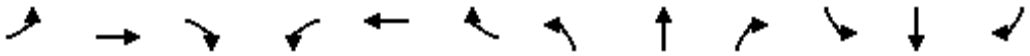
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	35	30	50	25	180	30	695	40	90	1015	30
Future Vol, veh/h	25	35	30	50	25	180	30	695	40	90	1015	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	8	1	0
Mvmt Flow	26	36	31	51	26	184	31	709	41	92	1036	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2133	2048	1052	2061	2043	730	1067	0	0	750	0	0
Stage 1	1236	1236	-	792	792	-	-	-	-	-	-	-
Stage 2	897	812	-	1269	1251	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.18	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.272	-	-
Pot Cap-1 Maneuver	36	57	278	~ 41	57	426	661	-	-	833	-	-
Stage 1	218	250	-	385	404	-	-	-	-	-	-	-
Stage 2	337	395	-	208	246	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	38	278	~ 5	38	426	661	-	-	833	-	-
Mov Cap-2 Maneuver	~ 7	38	-	~ 5	38	-	-	-	-	-	-	-
Stage 1	200	182	-	354	371	-	-	-	-	-	-	-
Stage 2	164	363	-	108	179	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $	2005.6	$ 4968.2	0.4	0.8
HCM LOS	F	F		

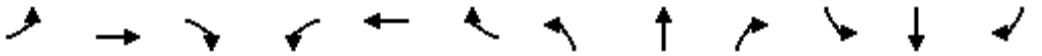
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	661	-	-	20	23	833	-	-
HCM Lane V/C Ratio	0.046	-	-	4.592	11.313	0.11	-	-
HCM Control Delay (s)	10.7	0	-	$ 2005.6	$ 4968.2	9.9	0	-
HCM Lane LOS	B	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	11.9	32.6	0.4	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



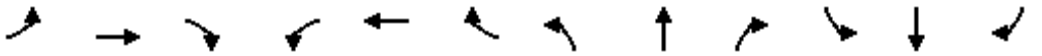
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	15	25	105	30	165	60	485	45	110	835	140
Future Volume (vph)	150	15	25	105	30	165	60	485	45	110	835	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90			0.93		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1666			1729		1671	1855		1803	1843	
Flt Permitted	0.41	1.00			0.87		0.17	1.00		0.41	1.00	
Satd. Flow (perm)	784	1666			1526		293	1855		777	1843	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	153	15	26	107	31	168	61	495	46	112	852	143
RTOR Reduction (vph)	0	21	0	0	50	0	0	4	0	0	6	0
Lane Group Flow (vph)	153	20	0	0	256	0	61	537	0	112	989	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	5%	0%	0%	0%	8%	1%	0%	0%	0%	6%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.9	17.9			17.9		62.2	62.2		62.2	62.2	
Effective Green, g (s)	17.9	17.9			17.9		62.2	62.2		62.2	62.2	
Actuated g/C Ratio	0.20	0.20			0.20		0.71	0.71		0.71	0.71	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	159	338			310		206	1309		548	1301	
v/s Ratio Prot		0.01						0.29			c0.54	
v/s Ratio Perm	c0.20				0.17		0.21			0.14		
v/c Ratio	0.96	0.06			0.83		0.30	0.41		0.20	0.76	
Uniform Delay, d1	34.8	28.3			33.6		4.8	5.4		4.4	8.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	59.8	0.1			16.2		3.6	1.0		0.8	4.2	
Delay (s)	94.5	28.4			49.8		8.4	6.3		5.3	12.4	
Level of Service	F	C			D		A	A		A	B	
Approach Delay (s)		80.6			49.8			6.5			11.7	
Approach LOS		F			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	88.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	735	825	80	165	585	740	40	695	170	865	1140	750
Future Volume (vph)	735	825	80	165	585	740	40	695	170	865	1140	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3482		3433	3539	1553	1597	3471	1568	3400	3471	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3482		3433	3539	1553	1597	3471	1568	3400	3471	1568
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	750	842	82	168	597	755	41	709	173	883	1163	765
RTOR Reduction (vph)	0	6	0	0	0	385	0	0	136	0	0	276
Lane Group Flow (vph)	750	918	0	168	597	370	41	709	37	883	1163	489
Confl. Peds. (#/hr)	1		3	3		1			2	2		
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	2%	2%	3%	2%	2%	4%	13%	4%	3%	3%	4%	3%
Turn Type	Prot	NA		Prot	NA	Prot	Prot	NA	Prot	Prot	NA	Prot
Protected Phases	7	4		3	8	8	1	6	6	5	2	2
Permitted Phases												
Actuated Green, G (s)	14.7	31.1		4.1	20.5	20.5	3.2	22.2	22.2	30.9	49.9	49.9
Effective Green, g (s)	15.2	31.6		4.6	21.0	21.0	3.7	24.2	24.2	31.4	51.9	51.9
Actuated g/C Ratio	0.14	0.28		0.04	0.19	0.19	0.03	0.22	0.22	0.28	0.46	0.46
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	466	984		141	664	291	52	751	339	954	1611	727
v/s Ratio Prot	c0.22	0.26		0.05	0.17	c0.24	0.03	c0.20	0.02	c0.26	0.34	0.31
v/s Ratio Perm												
v/c Ratio	1.61	0.93		1.19	0.90	1.27	0.79	0.94	0.11	0.93	0.72	0.67
Uniform Delay, d1	48.3	39.1		53.6	44.4	45.4	53.7	43.1	35.2	39.1	24.1	23.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	284.1	14.9		136.4	14.8	146.4	51.6	20.7	0.3	14.2	1.9	3.0
Delay (s)	332.4	54.0		190.0	59.2	191.8	105.3	63.8	35.4	53.3	26.0	26.3
Level of Service	F	D		F	E	F	F	E	D	D	C	C
Approach Delay (s)		178.7			139.5			60.4			34.7	
Approach LOS		F			F			E			C	

Intersection Summary			
HCM 2000 Control Delay	95.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	111.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	475	970	305	75	775	125	365	130	95	105	140	360
Future Volume (vph)	475	970	305	75	775	125	365	130	95	105	140	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.98		1.00	0.94		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3446		1805	3493		1805	1743		1717	1900	1615
Flt Permitted	0.95	1.00		0.95	1.00		0.30	1.00		0.41	1.00	1.00
Satd. Flow (perm)	1787	3446		1805	3493		576	1743		747	1900	1615
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	485	990	311	77	791	128	372	133	97	107	143	367
RTOR Reduction (vph)	0	20	0	0	9	0	0	18	0	0	0	28
Lane Group Flow (vph)	485	1281	0	77	910	0	372	212	0	107	143	339
Confl. Peds. (#/hr)	1					1			2	2		
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	0%	1%	2%	5%	0%	0%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases							8			4		4
Actuated Green, G (s)	39.2	79.6		5.0	45.4		38.1	22.2		26.0	14.6	53.8
Effective Green, g (s)	39.2	80.1		5.0	45.9		38.6	22.7		27.0	15.1	53.8
Actuated g/C Ratio	0.29	0.59		0.04	0.34		0.28	0.17		0.20	0.11	0.40
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	4.0
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	516	2034		66	1181		340	291		233	211	640
v/s Ratio Prot	c0.27	0.37		0.04	c0.26		c0.16	0.12		0.04	0.08	0.15
v/s Ratio Perm							c0.15			0.05		0.06
v/c Ratio	0.94	0.63		1.17	0.77		1.09	0.73		0.46	0.68	0.53
Uniform Delay, d1	47.1	18.1		65.3	40.2		44.8	53.6		46.5	58.0	31.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	25.1	1.5		162.9	4.9		76.4	8.2		1.0	7.6	0.6
Delay (s)	72.2	19.6		228.2	45.1		121.3	61.8		47.6	65.6	31.9
Level of Service	E	B		F	D		F	E		D	E	C
Approach Delay (s)		33.9			59.2			98.5			42.4	
Approach LOS		C			E			F			D	

Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	135.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	78.4

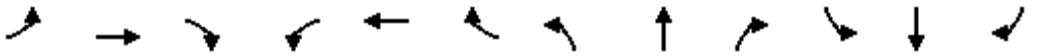
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	30	30	60	35	190	35	355	40	100	750	145
Future Vol, veh/h	65	30	30	60	35	190	35	355	40	100	750	145
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	115	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	3	1	0	0	0	1
Mvmt Flow	66	31	31	61	36	194	36	362	41	102	765	148

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1613	1518	839	1529	1572	383	913	0	0	403	0	0
Stage 1	1043	1043	-	455	455	-	-	-	-	-	-	-
Stage 2	570	475	-	1074	1117	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.13	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.227	-	-	2.2	-	-
Pot Cap-1 Maneuver	85	120	369	97	111	669	742	-	-	1167	-	-
Stage 1	280	309	-	589	572	-	-	-	-	-	-	-
Stage 2	510	561	-	269	285	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 39	104	369	62	96	669	742	-	-	1167	-	-
Mov Cap-2 Maneuver	~ 39	104	-	62	96	-	-	-	-	-	-	-
Stage 1	266	282	-	560	544	-	-	-	-	-	-	-
Stage 2	322	534	-	201	260	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 312.5	$ 364	0.8	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	742	-	-	39	162	176	1167	-	-
HCM Lane V/C Ratio	0.048	-	-	1.701	0.378	1.652	0.087	-	-
HCM Control Delay (s)	10.1	-	-	$ 564	40.1	$ 364	8.4	-	-
HCM Lane LOS	B	-	-	F	E	F	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	7	1.6	19.8	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	5	70	70	10	155	65	820	35	70	990	140
Future Volume (vph)	125	5	70	70	10	155	65	820	35	70	990	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.89			0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.99			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1592			1705		1805	1869		1805	1881	1615
Flt Permitted	0.48	0.90			0.87		0.14	1.00		0.22	1.00	1.00
Satd. Flow (perm)	873	1449			1506		269	1869		411	1881	1615
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	128	5	71	71	10	158	66	837	36	71	1010	143
RTOR Reduction (vph)	0	57	0	0	77	0	0	2	0	0	0	33
Lane Group Flow (vph)	105	42	0	0	162	0	66	871	0	71	1010	110
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	custom	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases					8			2			6	
Permitted Phases	4	4		8			2			6		6
Actuated Green, G (s)	12.8	12.8			12.8		43.0	43.0		43.0	43.0	43.0
Effective Green, g (s)	12.8	12.8			12.8		43.0	43.0		43.0	43.0	43.0
Actuated g/C Ratio	0.20	0.20			0.20		0.67	0.67		0.67	0.67	0.67
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	175	290			302		181	1259		277	1267	1088
v/s Ratio Prot								0.47			c0.54	
v/s Ratio Perm	c0.12	0.03			0.11		0.25			0.17		0.07
v/c Ratio	0.60	0.15			0.54		0.36	0.69		0.26	0.80	0.10
Uniform Delay, d1	23.2	21.0			22.8		4.5	6.4		4.1	7.3	3.6
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.5	0.2			1.8		1.3	1.7		0.5	3.6	0.0
Delay (s)	28.6	21.2			24.7		5.7	8.0		4.6	10.9	3.7
Level of Service	C	C			C		A	A		A	B	A
Approach Delay (s)		25.0			24.7			7.9			9.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	432.7

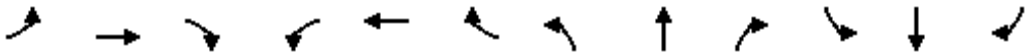
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	30	25	50	25	175	30	720	40	90	1015	30
Future Vol, veh/h	25	30	25	50	25	175	30	720	40	90	1015	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	8	1	0
Mvmt Flow	26	31	26	51	26	179	31	735	41	92	1036	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2156	2074	1052	2082	2069	756	1067	0	0	776	0	0
Stage 1	1236	1236	-	818	818	-	-	-	-	-	-	-
Stage 2	920	838	-	1264	1251	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.18	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.272	-	-
Pot Cap-1 Maneuver	35	54	278	~ 40	55	411	661	-	-	814	-	-
Stage 1	218	250	-	373	393	-	-	-	-	-	-	-
Stage 2	327	384	-	210	246	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 6	36	278	~ 8	36	411	661	-	-	814	-	-
Mov Cap-2 Maneuver	~ 6	36	-	~ 8	36	-	-	-	-	-	-	-
Stage 1	200	180	-	342	360	-	-	-	-	-	-	-
Stage 2	158	352	-	114	177	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $	2322.8	$ 3154.7	0.4	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	661	-	-	16	34	814	-	-
HCM Lane V/C Ratio	0.046	-	-	5.102	7.503	0.113	-	-
HCM Control Delay (s)	10.7	0	-	$ 2322.8	$ 3154.7	10	0	-
HCM Lane LOS	B	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	11	30.7	0.4	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	15	25	115	30	175	55	505	45	110	855	140
Future Volume (vph)	155	15	25	115	30	175	55	505	45	110	855	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90			0.93		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1666			1729		1671	1856		1803	1844	
Flt Permitted	0.41	1.00			0.86		0.15	1.00		0.39	1.00	
Satd. Flow (perm)	779	1666			1522		266	1856		750	1844	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	158	15	26	117	31	179	56	515	46	112	872	143
RTOR Reduction (vph)	0	21	0	0	49	0	0	3	0	0	6	0
Lane Group Flow (vph)	158	20	0	0	278	0	56	558	0	112	1009	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	5%	0%	0%	0%	8%	1%	0%	0%	0%	6%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	18.6	18.6			18.6		62.0	62.0		62.0	62.0	
Effective Green, g (s)	18.6	18.6			18.6		62.0	62.0		62.0	62.0	
Actuated g/C Ratio	0.21	0.21			0.21		0.70	0.70		0.70	0.70	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	163	349			319		186	1298		524	1290	
v/s Ratio Prot		0.01						0.30			c0.55	
v/s Ratio Perm	c0.20				0.18		0.21			0.15		
v/c Ratio	0.97	0.06			0.87		0.30	0.43		0.21	0.78	
Uniform Delay, d1	34.7	28.0			33.8		5.1	5.7		4.7	8.8	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	60.6	0.1			22.0		4.1	1.0		0.9	4.8	
Delay (s)	95.3	28.1			55.8		9.2	6.8		5.6	13.6	
Level of Service	F	C			E		A	A		A	B	
Approach Delay (s)		81.5			55.8			7.0			12.8	
Approach LOS		F			E			A			B	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	88.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

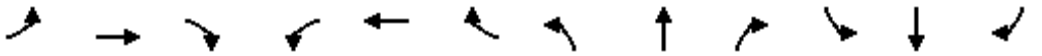
see alternate mobility target option

HCM Signalized Intersection Capacity Analysis
16: OR 213 & Beavercreek Road

08/01/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	735	825	80	165	585	740	40	695	170	865	1140	750
Future Volume (vph)	735	825	80	165	585	740	40	695	170	865	1140	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	3.5	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3482		3433	3539	1533	1597	3471	1568	3400	3471	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3482		3433	3539	1533	1597	3471	1568	3400	3471	1568
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	750	842	82	168	597	755	41	709	173	883	1163	765
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	135	0	0	275
Lane Group Flow (vph)	750	918	0	168	597	755	41	709	38	883	1163	490
Confl. Peds. (#/hr)	1		3	3		1			2	2		
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	2%	2%	3%	2%	2%	4%	13%	4%	3%	3%	4%	3%
Turn Type	Prot	NA		Prot	NA	Free	Prot	NA	Prot	Prot	NA	Prot
Protected Phases	7	4		3	8		1	6	6	5	2	2
Permitted Phases						Free						
Actuated Green, G (s)	14.7	30.6		4.1	20.0	111.2	3.1	22.2	22.2	30.8	49.9	49.9
Effective Green, g (s)	15.2	31.1		4.6	20.5	111.2	3.6	24.2	24.2	31.3	51.9	51.9
Actuated g/C Ratio	0.14	0.28		0.04	0.18	1.00	0.03	0.22	0.22	0.28	0.47	0.47
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	469	973		142	652	1533	51	755	341	957	1620	731
v/s Ratio Prot	c0.22	c0.26		0.05	c0.17		0.03	c0.20	0.02	c0.26	0.34	0.31
v/s Ratio Perm						0.49						
v/c Ratio	1.60	0.94		1.18	0.92	0.49	0.80	0.94	0.11	0.92	0.72	0.67
Uniform Delay, d1	48.0	39.2		53.3	44.5	0.0	53.4	42.8	34.9	38.8	23.8	23.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	279.5	16.7		133.1	17.4	1.1	57.2	19.7	0.3	13.9	1.8	3.0
Delay (s)	327.5	55.9		186.4	61.9	1.1	110.7	62.5	35.1	52.7	25.6	26.0
Level of Service	F	E		F	E	A	F	E	D	D	C	C
Approach Delay (s)		177.6			45.5			59.5			34.2	
Approach LOS		F			D			E			C	

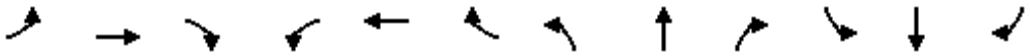
Intersection Summary			
HCM 2000 Control Delay	74.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	111.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	97.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	475	970	305	75	775	125	365	130	95	105	140	360
Future Volume (vph)	475	970	305	75	775	125	365	130	95	105	140	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.98		1.00	0.94		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3446		1805	3493		1805	1743		1716	1900	1615
Flt Permitted	0.95	1.00		0.95	1.00		0.30	1.00		0.62	1.00	1.00
Satd. Flow (perm)	1787	3446		1805	3493		566	1743		1111	1900	1615
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	485	990	311	77	791	128	372	133	97	107	143	367
RTOR Reduction (vph)	0	20	0	0	9	0	0	18	0	0	0	50
Lane Group Flow (vph)	485	1281	0	77	910	0	372	212	0	107	143	317
Confl. Peds. (#/hr)	1					1			2	2		
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	0%	1%	2%	5%	0%	0%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases							8			4		4
Actuated Green, G (s)	38.7	70.4		8.5	40.2		43.2	27.7		25.3	14.3	53.0
Effective Green, g (s)	38.7	70.9		8.5	40.7		43.7	28.2		26.3	14.8	53.0
Actuated g/C Ratio	0.29	0.52		0.06	0.30		0.32	0.21		0.19	0.11	0.39
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	4.0
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	511	1808		113	1052		411	363		267	208	633
v/s Ratio Prot	c0.27	0.37		0.04	c0.26		c0.17	0.12		0.03	0.08	0.14
v/s Ratio Perm							c0.13			0.04		0.05
v/c Ratio	0.95	0.71		0.68	0.86		0.91	0.58		0.40	0.69	0.50
Uniform Delay, d1	47.2	24.3		62.0	44.6		39.5	48.2		46.7	57.9	31.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	27.2	2.4		14.4	9.5		22.9	2.0		0.7	8.3	0.5
Delay (s)	74.4	26.7		76.3	54.1		62.4	50.1		47.4	66.3	31.5
Level of Service	E	C		E	D		E	D		D	E	C
Approach Delay (s)		39.6			55.8			57.7			42.3	
Approach LOS		D			E			E			D	

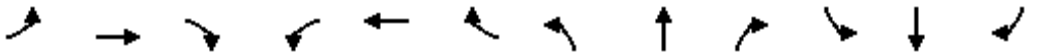
Intersection Summary			
HCM 2000 Control Delay	46.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	135.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	30	30	60	35	190	35	355	40	100	750	145
Future Volume (vph)	65	30	30	60	35	190	35	355	40	100	750	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93			0.91		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1758			1711		1752	1854		1805	1851	
Flt Permitted	0.42	1.00			0.92		0.17	1.00		0.50	1.00	
Satd. Flow (perm)	801	1758			1592		322	1854		944	1851	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	66	31	31	61	36	194	36	362	41	102	765	148
RTOR Reduction (vph)	0	24	0	0	80	0	0	5	0	0	9	0
Lane Group Flow (vph)	66	38	0	0	211	0	36	398	0	102	904	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	3%	1%	0%	0%	0%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	12.8	12.8			12.8		37.3	37.3		37.3	37.3	
Effective Green, g (s)	12.8	12.8			12.8		37.3	37.3		37.3	37.3	
Actuated g/C Ratio	0.22	0.22			0.22		0.64	0.64		0.64	0.64	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	176	387			350		206	1190		606	1188	
v/s Ratio Prot		0.02						0.21			c0.49	
v/s Ratio Perm	0.08				c0.13		0.11			0.11		
v/c Ratio	0.38	0.10			0.60		0.17	0.33		0.17	0.76	
Uniform Delay, d1	19.3	18.0			20.4		4.2	4.7		4.2	7.3	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.1			2.9		0.4	0.2		0.1	2.9	
Delay (s)	20.6	18.2			23.3		4.6	4.9		4.3	10.2	
Level of Service	C	B			C		A	A		A	B	
Approach Delay (s)		19.4			23.3			4.9			9.6	
Approach LOS		B			C			A			A	

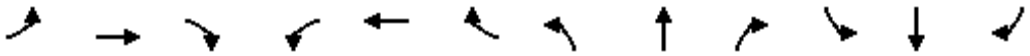
Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	5	70	70	10	155	65	820	35	70	990	140
Future Volume (vph)	125	5	70	70	10	155	65	820	35	70	990	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.89			0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.99			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1592			1705		1805	1869		1805	1881	1615
Flt Permitted	0.49	0.91			0.87		0.13	1.00		0.21	1.00	1.00
Satd. Flow (perm)	887	1463			1510		256	1869		400	1881	1615
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	128	5	71	71	10	158	66	837	36	71	1010	143
RTOR Reduction (vph)	0	56	0	0	76	0	0	2	0	0	0	34
Lane Group Flow (vph)	105	43	0	0	163	0	66	871	0	71	1010	109
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	custom	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases					8			2			6	
Permitted Phases	4	4		8			2			6		6
Actuated Green, G (s)	13.8	13.8			13.8		43.5	43.5		43.5	43.5	43.5
Effective Green, g (s)	13.8	13.8			13.8		43.5	43.5		43.5	43.5	43.5
Actuated g/C Ratio	0.21	0.21			0.21		0.67	0.67		0.67	0.67	0.67
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	187	309			319		170	1245		266	1253	1075
v/s Ratio Prot								0.47			c0.54	
v/s Ratio Perm	c0.12	0.03			0.11		0.26			0.18		0.07
v/c Ratio	0.56	0.14			0.51		0.39	0.70		0.27	0.81	0.10
Uniform Delay, d1	23.0	20.9			22.8		4.9	6.8		4.4	7.9	3.9
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.8	0.2			1.4		1.5	1.7		0.5	3.9	0.0
Delay (s)	26.9	21.1			24.2		6.4	8.6		5.0	11.7	3.9
Level of Service	C	C			C		A	A		A	B	A
Approach Delay (s)		24.1			24.2			8.4			10.4	
Approach LOS		C			C			A			B	

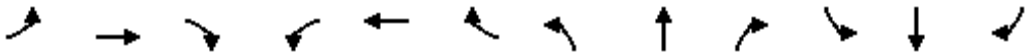
Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	30	25	50	25	175	30	720	40	90	1015	30
Future Volume (vph)	25	30	25	50	25	175	30	720	40	90	1015	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.96			0.91			0.99			1.00	
Flt Protected		0.98			0.99			1.00			1.00	
Satd. Flow (prot)		1792			1704			1866			1857	
Flt Permitted		0.67			0.93			0.94			0.88	
Satd. Flow (perm)		1216			1597			1750			1648	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	26	31	26	51	26	179	31	735	41	92	1036	31
RTOR Reduction (vph)	0	19	0	0	96	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	64	0	0	160	0	0	805	0	0	1158	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	8%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.2			12.2			63.0			63.0	
Effective Green, g (s)		12.2			12.2			63.0			63.0	
Actuated g/C Ratio		0.15			0.15			0.76			0.76	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		178			234			1325			1247	
v/s Ratio Prot												
v/s Ratio Perm		0.05			c0.10			0.46			c0.70	
v/c Ratio		0.36			0.68			0.61			0.93	
Uniform Delay, d1		32.0			33.7			4.5			8.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			7.9			0.8			11.9	
Delay (s)		33.2			41.6			5.3			20.2	
Level of Service		C			D			A			C	
Approach Delay (s)		33.2			41.6			5.3			20.2	
Approach LOS		C			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	83.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	115.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	15	25	115	30	175	55	505	45	110	855	140
Future Volume (vph)	155	15	25	115	30	175	55	505	45	110	855	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90			0.93		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1666			1729		1671	1856		1803	1844	
Flt Permitted	0.41	1.00			0.86		0.15	1.00		0.39	1.00	
Satd. Flow (perm)	786	1666			1522		262	1856		747	1844	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	158	15	26	117	31	179	56	515	46	112	872	143
RTOR Reduction (vph)	0	20	0	0	49	0	0	3	0	0	6	0
Lane Group Flow (vph)	158	21	0	0	278	0	56	558	0	112	1009	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	5%	0%	0%	0%	8%	1%	0%	0%	0%	6%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	19.0	19.0			19.0		62.0	62.0		62.0	62.0	
Effective Green, g (s)	19.0	19.0			19.0		62.0	62.0		62.0	62.0	
Actuated g/C Ratio	0.21	0.21			0.21		0.70	0.70		0.70	0.70	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	167	355			324		182	1292		520	1284	
v/s Ratio Prot		0.01						0.30			c0.55	
v/s Ratio Perm	c0.20				0.18		0.21			0.15		
v/c Ratio	0.95	0.06			0.86		0.31	0.43		0.22	0.79	
Uniform Delay, d1	34.5	27.9			33.7		5.2	5.9		4.8	9.0	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	53.4	0.1			19.6		4.3	1.1		0.9	4.9	
Delay (s)	87.9	27.9			53.3		9.5	6.9		5.8	13.9	
Level of Service	F	C			D		A	A		A	B	
Approach Delay (s)		75.6			53.3			7.1			13.1	
Approach LOS		E			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

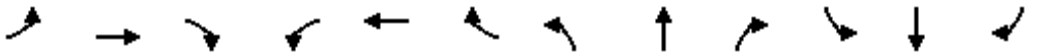
see alternate mobility target option

HCM Signalized Intersection Capacity Analysis
16: OR 213 & Beavercreek Road

08/02/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	735	825	80	165	585	730	40	695	170	855	1145	750
Future Volume (vph)	735	825	80	165	585	730	40	695	170	855	1145	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	3.5	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3482		3433	3539	1533	1597	3471	1568	3400	3471	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3482		3433	3539	1533	1597	3471	1568	3400	3471	1568
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	750	842	82	168	597	745	41	709	173	872	1168	765
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	135	0	0	275
Lane Group Flow (vph)	750	918	0	168	597	745	41	709	38	872	1168	490
Confl. Peds. (#/hr)	1		3	3		1			2	2		
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	2%	2%	3%	2%	2%	4%	13%	4%	3%	3%	4%	3%
Turn Type	Prot	NA		Prot	NA	Free	Prot	NA	Prot	Prot	NA	Prot
Protected Phases	7	4		3	8		1	6	6	5	2	2
Permitted Phases						Free						
Actuated Green, G (s)	14.8	30.6		4.1	19.9	111.1	3.1	22.3	22.3	30.6	49.8	49.8
Effective Green, g (s)	15.3	31.1		4.6	20.4	111.1	3.6	24.3	24.3	31.1	51.8	51.8
Actuated g/C Ratio	0.14	0.28		0.04	0.18	1.00	0.03	0.22	0.22	0.28	0.47	0.47
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	472	974		142	649	1533	51	759	342	951	1618	731
v/s Ratio Prot	c0.22	c0.26		0.05	c0.17		0.03	c0.20	0.02	c0.26	0.34	0.31
v/s Ratio Perm						0.49						
v/c Ratio	1.59	0.94		1.18	0.92	0.49	0.80	0.93	0.11	0.92	0.72	0.67
Uniform Delay, d1	47.9	39.1		53.2	44.5	0.0	53.4	42.6	34.7	38.7	23.9	23.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	275.0	16.5		133.1	18.0	1.1	57.2	18.9	0.3	13.1	1.9	2.9
Delay (s)	322.9	55.6		186.3	62.6	1.1	110.6	61.5	35.0	51.9	25.8	25.9
Level of Service	F	E		F	E	A	F	E	D	D	C	C
Approach Delay (s)		175.4			46.0			58.7			33.9	
Approach LOS		F			D			E			C	

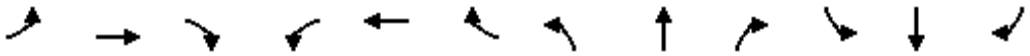
Intersection Summary			
HCM 2000 Control Delay	74.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	111.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	465	970	315	75	755	115	380	130	95	105	135	350
Future Volume (vph)	465	970	315	75	755	115	380	130	95	105	135	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.98		1.00	0.94		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3443		1805	3497		1805	1743		1716	1900	1615
Flt Permitted	0.95	1.00		0.95	1.00		0.31	1.00		0.62	1.00	1.00
Satd. Flow (perm)	1787	3443		1805	3497		586	1743		1111	1900	1615
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	474	990	321	77	770	117	388	133	97	107	138	357
RTOR Reduction (vph)	0	21	0	0	8	0	0	18	0	0	0	50
Lane Group Flow (vph)	474	1290	0	77	879	0	388	212	0	107	138	307
Confl. Peds. (#/hr)	1					1			2	2		
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	0%	1%	2%	5%	0%	0%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases							8			4		4
Actuated Green, G (s)	38.2	70.4		8.5	40.7		43.4	27.9		25.1	14.1	52.3
Effective Green, g (s)	38.2	70.9		8.5	41.2		43.9	28.4		26.1	14.6	52.3
Actuated g/C Ratio	0.28	0.52		0.06	0.30		0.32	0.21		0.19	0.11	0.39
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	4.0
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	504	1804		113	1064		418	365		265	205	624
v/s Ratio Prot	c0.27	0.37		0.04	c0.25		c0.17	0.12		0.03	0.07	0.14
v/s Ratio Perm							c0.13			0.04		0.05
v/c Ratio	0.94	0.71		0.68	0.83		0.93	0.58		0.40	0.67	0.49
Uniform Delay, d1	47.4	24.5		62.1	43.7		39.9	48.1		47.0	58.1	31.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	25.9	2.5		14.4	7.3		26.6	1.9		0.7	7.7	0.4
Delay (s)	73.4	27.0		76.4	51.0		66.5	50.0		47.7	65.7	31.9
Level of Service	E	C		E	D		E	D		D	E	C
Approach Delay (s)		39.3			53.1			60.4			42.5	
Approach LOS		D			D			E			D	

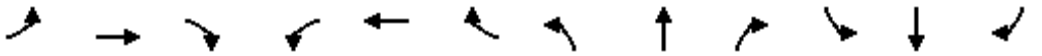
Intersection Summary			
HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	135.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	30	30	60	35	175	35	355	40	85	740	140
Future Volume (vph)	65	30	30	60	35	175	35	355	40	85	740	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93			0.91		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1758			1715		1752	1854		1805	1852	
Flt Permitted	0.45	1.00			0.92		0.18	1.00		0.50	1.00	
Satd. Flow (perm)	858	1758			1589		332	1854		944	1852	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	66	31	31	61	36	179	36	362	41	87	755	143
RTOR Reduction (vph)	0	24	0	0	74	0	0	5	0	0	9	0
Lane Group Flow (vph)	66	38	0	0	202	0	36	398	0	87	889	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	3%	1%	0%	0%	0%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	12.5	12.5			12.5		35.9	35.9		35.9	35.9	
Effective Green, g (s)	12.5	12.5			12.5		35.9	35.9		35.9	35.9	
Actuated g/C Ratio	0.22	0.22			0.22		0.64	0.64		0.64	0.64	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	190	389			352		211	1180		600	1178	
v/s Ratio Prot		0.02						0.21			c0.48	
v/s Ratio Perm	0.08				c0.13		0.11			0.09		
v/c Ratio	0.35	0.10			0.57		0.17	0.34		0.14	0.75	
Uniform Delay, d1	18.5	17.5			19.6		4.2	4.7		4.1	7.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.1			2.3		0.4	0.2		0.1	2.8	
Delay (s)	19.6	17.6			21.8		4.6	4.9		4.2	10.0	
Level of Service	B	B			C		A	A		A	A	
Approach Delay (s)		18.6			21.8			4.9			9.5	
Approach LOS		B			C			A			A	

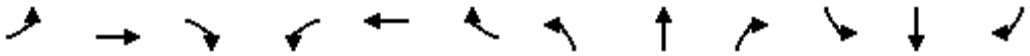
Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	10	75	70	10	155	65	800	35	70	985	140
Future Volume (vph)	125	10	75	70	10	155	65	800	35	70	985	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.89			0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.99			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1592			1705		1805	1868		1805	1881	1615
Flt Permitted	0.50	0.95			0.87		0.13	1.00		0.22	1.00	1.00
Satd. Flow (perm)	898	1519			1510		250	1868		413	1881	1615
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	128	10	77	71	10	158	66	816	36	71	1005	143
RTOR Reduction (vph)	0	60	0	0	75	0	0	2	0	0	0	35
Lane Group Flow (vph)	111	44	0	0	164	0	66	850	0	71	1005	108
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	custom	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases					8			2			6	
Permitted Phases	4	4		8			2			6		6
Actuated Green, G (s)	14.5	14.5			14.5		43.6	43.6		43.6	43.6	43.6
Effective Green, g (s)	14.5	14.5			14.5		43.6	43.6		43.6	43.6	43.6
Actuated g/C Ratio	0.22	0.22			0.22		0.66	0.66		0.66	0.66	0.66
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	196	333			331		164	1232		272	1240	1065
v/s Ratio Prot								0.45			c0.53	
v/s Ratio Perm	c0.12	0.03			0.11		0.26			0.17		0.07
v/c Ratio	0.57	0.13			0.50		0.40	0.69		0.26	0.81	0.10
Uniform Delay, d1	23.0	20.7			22.6		5.2	7.0		4.6	8.2	4.1
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.7	0.2			1.2		1.6	1.6		0.5	4.1	0.0
Delay (s)	26.7	20.9			23.8		6.8	8.7		5.1	12.3	4.1
Level of Service	C	C			C		A	A		A	B	A
Approach Delay (s)		23.9			23.8			8.5			11.0	
Approach LOS		C			C			A			B	

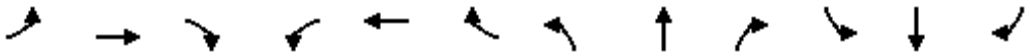
Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	35	30	50	25	180	30	695	40	90	1015	30
Future Volume (vph)	25	35	30	50	25	180	30	695	40	90	1015	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.95			0.90			0.99			1.00	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1789			1703			1866			1857	
Flt Permitted		0.69			0.92			0.93			0.89	
Satd. Flow (perm)		1252			1587			1746			1655	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	26	36	31	51	26	184	31	709	41	92	1036	31
RTOR Reduction (vph)	0	20	0	0	99	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	73	0	0	162	0	0	779	0	0	1158	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	8%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.3			12.3			62.2			62.2	
Effective Green, g (s)		12.3			12.3			62.2			62.2	
Actuated g/C Ratio		0.15			0.15			0.75			0.75	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		186			236			1316			1247	
v/s Ratio Prot												
v/s Ratio Perm		0.06			c0.10			0.45			c0.70	
v/c Ratio		0.39			0.69			0.59			0.93	
Uniform Delay, d1		31.7			33.3			4.5			8.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.4			8.1			0.7			11.9	
Delay (s)		33.1			41.3			5.2			20.3	
Level of Service		C			D			A			C	
Approach Delay (s)		33.1			41.3			5.2			20.3	
Approach LOS		C			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	82.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	116.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	15	25	105	30	165	60	485	45	110	835	140
Future Volume (vph)	150	15	25	105	30	165	60	485	45	110	835	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90			0.93		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1666			1729		1671	1855		1803	1843	
Flt Permitted	0.42	1.00			0.87		0.16	1.00		0.41	1.00	
Satd. Flow (perm)	799	1666			1526		284	1855		772	1843	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	153	15	26	107	31	168	61	495	46	112	852	143
RTOR Reduction (vph)	0	21	0	0	50	0	0	4	0	0	7	0
Lane Group Flow (vph)	153	20	0	0	256	0	61	537	0	112	988	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	5%	0%	0%	0%	8%	1%	0%	0%	0%	6%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	18.7	18.7			18.7		62.1	62.1		62.1	62.1	
Effective Green, g (s)	18.7	18.7			18.7		62.1	62.1		62.1	62.1	
Actuated g/C Ratio	0.21	0.21			0.21		0.70	0.70		0.70	0.70	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	168	350			321		198	1297		539	1288	
v/s Ratio Prot		0.01						0.29			c0.54	
v/s Ratio Perm	c0.19				0.17		0.21			0.15		
v/c Ratio	0.91	0.06			0.80		0.31	0.41		0.21	0.77	
Uniform Delay, d1	34.2	28.0			33.3		5.1	5.7		4.7	8.7	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	44.4	0.1			12.9		4.0	1.0		0.9	4.4	
Delay (s)	78.7	28.1			46.2		9.1	6.6		5.6	13.1	
Level of Service	E	C			D		A	A		A	B	
Approach Delay (s)		68.0			46.2			6.9			12.3	
Approach LOS		E			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	88.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

alternate
mobility target
option

HCM Signalized Intersection Capacity Analysis
16: OR 213 & Beavercreek Road

08/02/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	715	800	80	60	565	720	40	675	165	840	1105	730
Future Volume (vph)	715	800	80	60	565	720	40	675	165	840	1105	730
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	3.5	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3481		3433	3539	1533	1597	3471	1568	3400	3471	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3481		3433	3539	1533	1597	3471	1568	3400	3471	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	715	800	80	60	565	720	40	675	165	840	1105	730
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	129	0	0	281
Lane Group Flow (vph)	715	874	0	60	565	720	40	675	36	840	1105	449
Confl. Peds. (#/hr)	1		3	3		1			2	2		
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	2%	2%	3%	2%	2%	4%	13%	4%	3%	3%	4%	3%
Turn Type	Prot	NA		Prot	NA	Free	Prot	NA	Prot	Prot	NA	Prot
Protected Phases	7	4		3	8		1	6	6	5	2	2
Permitted Phases						Free						
Actuated Green, G (s)	16.0	32.3		3.2	19.5	111.1	3.1	22.3	22.3	29.8	49.0	49.0
Effective Green, g (s)	16.5	32.8		3.7	20.0	111.1	3.6	24.3	24.3	30.3	51.0	51.0
Actuated g/C Ratio	0.15	0.30		0.03	0.18	1.00	0.03	0.22	0.22	0.27	0.46	0.46
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	509	1027		114	637	1533	51	759	342	927	1593	719
v/s Ratio Prot	c0.21	0.25		0.02	c0.16		0.03	c0.19	0.02	c0.25	0.32	0.29
v/s Ratio Perm						0.47						
v/c Ratio	1.40	0.85		0.53	0.89	0.47	0.78	0.89	0.11	0.91	0.69	0.62
Uniform Delay, d1	47.3	36.8		52.8	44.4	0.0	53.4	42.1	34.7	39.0	23.9	22.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	193.7	6.7		2.8	13.9	1.0	51.7	13.0	0.3	12.1	1.6	2.3
Delay (s)	241.0	43.6		55.6	58.3	1.0	105.0	55.1	35.0	51.1	25.4	25.0
Level of Service	F	D		E	E	A	F	E	C	D	C	C
Approach Delay (s)		132.1			27.5			53.6			33.4	
Approach LOS		F			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	59.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	111.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

alternate
mobility target
option

HCM Signalized Intersection Capacity Analysis
16: OR 213 & Beavercreek Road

07/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	715	800	80	160	565	710	40	675	165	830	1110	730
Future Volume (vph)	715	800	80	160	565	710	40	675	165	830	1110	730
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	3.5	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3481		3433	3539	1533	1597	3471	1568	3400	3471	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3481		3433	3539	1533	1597	3471	1568	3400	3471	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	715	800	80	160	565	710	40	675	165	830	1110	730
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	128	0	0	278
Lane Group Flow (vph)	715	874	0	160	565	710	40	675	37	830	1110	452
Confl. Peds. (#/hr)	1		3	3		1			2	2		
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	2%	2%	3%	2%	2%	4%	13%	4%	3%	3%	4%	3%
Turn Type	Prot	NA		Prot	NA	Free	Prot	NA	Prot	Prot	NA	Prot
Protected Phases	7	4		3	8		1	6	6	5	2	2
Permitted Phases						Free						
Actuated Green, G (s)	14.7	30.1		4.1	19.5	109.7	3.1	22.5	22.5	29.5	48.9	48.9
Effective Green, g (s)	15.2	30.6		4.6	20.0	109.7	3.6	24.5	24.5	30.0	50.9	50.9
Actuated g/C Ratio	0.14	0.28		0.04	0.18	1.00	0.03	0.22	0.22	0.27	0.46	0.46
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	475	970		143	645	1533	52	775	350	929	1610	727
v/s Ratio Prot	c0.21	c0.25		0.05	c0.16		0.03	c0.19	0.02	c0.24	0.32	0.29
v/s Ratio Perm						0.46						
v/c Ratio	1.51	0.90		1.12	0.88	0.46	0.77	0.87	0.11	0.89	0.69	0.62
Uniform Delay, d1	47.2	38.1		52.6	43.6	0.0	52.6	41.1	33.9	38.3	23.2	22.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	238.1	11.2		110.7	12.5	1.0	46.4	11.2	0.2	10.8	1.5	2.2
Delay (s)	285.4	49.3		163.3	56.2	1.0	99.0	52.3	34.1	49.1	24.7	24.3
Level of Service	F	D		F	E	A	F	D	C	D	C	C
Approach Delay (s)		155.1			40.8			51.0			32.2	
Approach LOS		F			D			D			C	

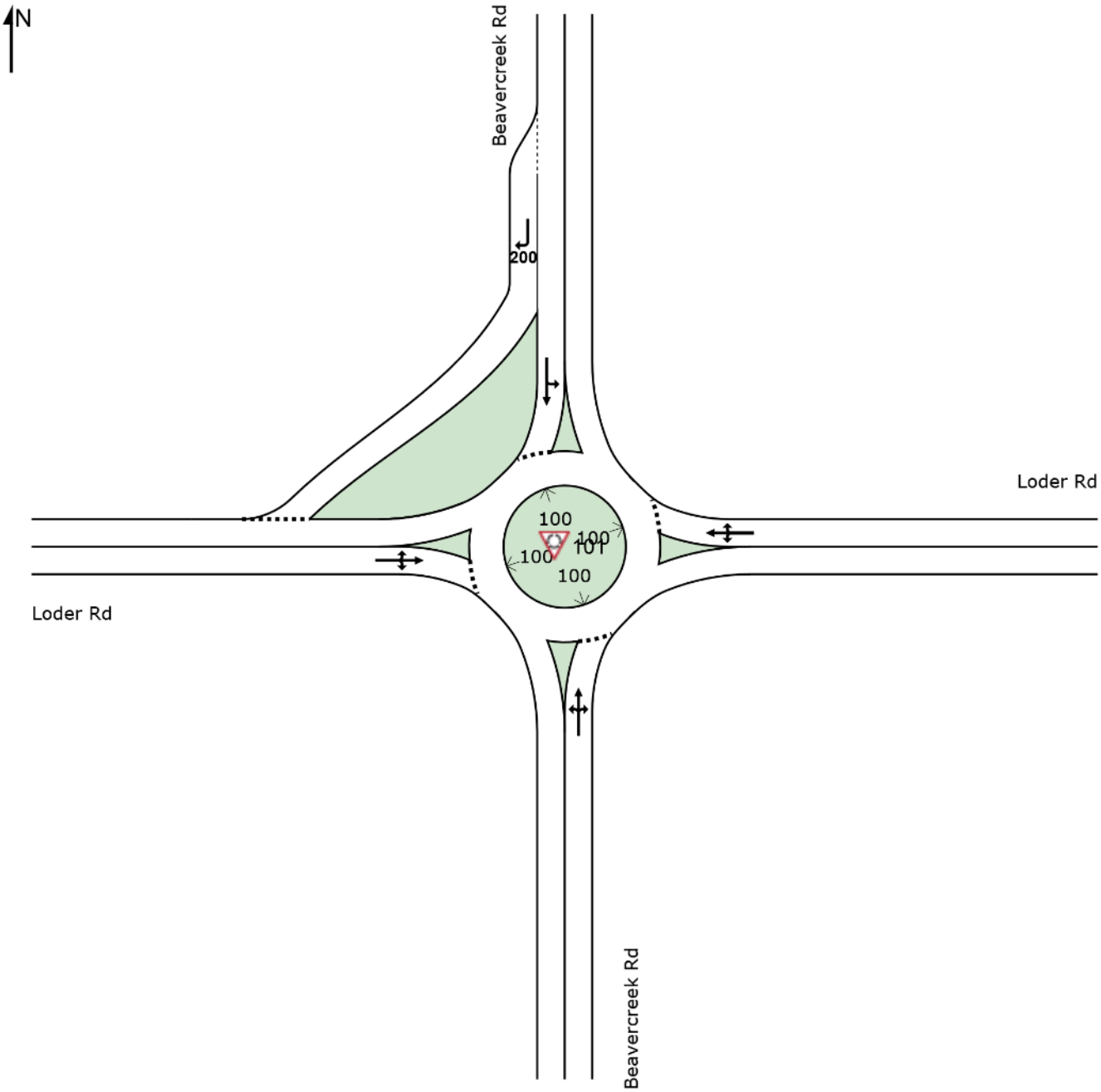
Intersection Summary			
HCM 2000 Control Delay	66.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	109.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Sidra Reports

SITE LAYOUT

Site: 101 [Beavercreek and Loder]

Site Category: (None)
Roundabout



MOVEMENT SUMMARY

Site: 101 [Beavercreek and Loder]

Site Category: (None)
Roundabout

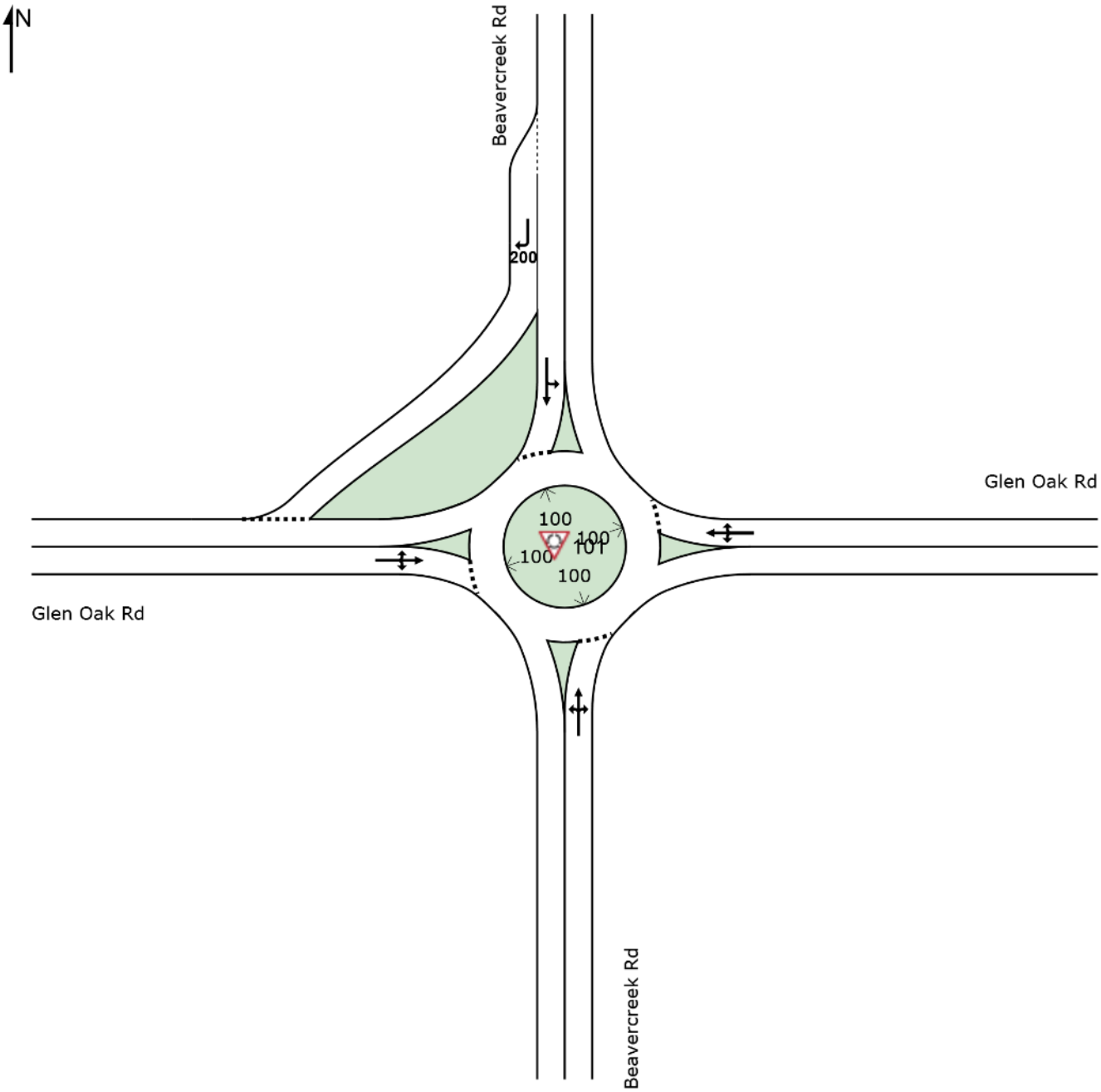
Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Beavercreek Rd												
3	L2	30	2.0	0.708	13.8	LOS B	8.5	215.1	0.69	0.51	0.76	31.0
8	T1	745	2.0	0.708	13.8	LOS B	8.5	215.1	0.69	0.51	0.76	30.9
18	R2	40	2.0	0.708	13.8	LOS B	8.5	215.1	0.69	0.51	0.76	30.1
Approach		815	2.0	0.708	13.8	LOS B	8.5	215.1	0.69	0.51	0.76	30.9
East: Loder Rd												
1	L2	55	2.0	0.459	13.5	LOS B	2.6	64.8	0.75	0.85	1.06	30.6
6	T1	25	2.0	0.459	13.5	LOS B	2.6	64.8	0.75	0.85	1.06	30.6
16	R2	190	2.0	0.459	13.5	LOS B	2.6	64.8	0.75	0.85	1.06	29.8
Approach		270	2.0	0.459	13.5	LOS B	2.6	64.8	0.75	0.85	1.06	30.0
North: Beavercreek Rd												
7	L2	95	2.0	0.943	31.8	LOS D	47.9	1216.3	1.00	1.01	1.60	24.8
4	T1	1090	2.0	0.943	31.8	LOS D	47.9	1216.3	1.00	1.01	1.60	24.8
14	R2	30	2.0	0.023	2.9	LOS A	0.1	2.2	0.15	0.05	0.15	35.3
Approach		1215	2.0	0.943	31.1	LOS D	47.9	1216.3	0.98	0.98	1.56	25.0
West: Loder Rd												
5	L2	25	2.0	0.242	13.9	LOS B	0.9	22.2	0.78	0.78	0.78	30.4
2	T1	35	2.0	0.242	13.9	LOS B	0.9	22.2	0.78	0.78	0.78	30.3
12	R2	30	2.0	0.242	13.9	LOS B	0.9	22.2	0.78	0.78	0.78	29.5
Approach		90	2.0	0.242	13.9	LOS B	0.9	22.2	0.78	0.78	0.78	30.1
All Vehicles		2390	2.0	0.943	22.6	LOS C	47.9	1216.3	0.85	0.80	1.20	27.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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 6).
Roundabout Capacity Model: US HCM 6.
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.

SITE LAYOUT

Site: 101 [Beavercreek and Glen Oak]

Site Category: (None)
Roundabout



MOVEMENT SUMMARY

Site: 101 [Beavercreek and Glen Oak]

Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Beavercreek Rd												
3	L2	35	2.0	0.437	7.9	LOS A	2.7	68.4	0.49	0.34	0.49	33.6
8	T1	380	2.0	0.437	7.9	LOS A	2.7	68.4	0.49	0.34	0.49	33.5
18	R2	70	2.0	0.437	7.9	LOS A	2.7	68.4	0.49	0.34	0.49	32.6
Approach		485	2.0	0.437	7.9	LOS A	2.7	68.4	0.49	0.34	0.49	33.4
East: Glen Oak Rd												
1	L2	60	2.0	0.349	8.5	LOS A	1.7	42.6	0.63	0.60	0.63	32.9
6	T1	40	2.0	0.349	8.5	LOS A	1.7	42.6	0.63	0.60	0.63	32.8
16	R2	185	2.0	0.349	8.5	LOS A	1.7	42.6	0.63	0.60	0.63	31.9
Approach		285	2.0	0.349	8.5	LOS A	1.7	42.6	0.63	0.60	0.63	32.2
North: Beavercreek Rd												
7	L2	90	2.0	0.721	13.7	LOS B	7.1	180.9	0.63	0.41	0.63	30.9
4	T1	795	2.0	0.721	13.7	LOS B	7.1	180.9	0.63	0.41	0.63	30.9
14	R2	150	2.0	0.116	3.7	LOS A	0.5	12.3	0.19	0.08	0.19	34.8
Approach		1035	2.0	0.721	12.2	LOS B	7.1	180.9	0.57	0.36	0.57	31.4
West: Glen Oak Rd												
5	L2	70	2.0	0.257	10.8	LOS B	1.0	25.5	0.70	0.70	0.70	31.1
2	T1	30	2.0	0.257	10.8	LOS B	1.0	25.5	0.70	0.70	0.70	31.0
12	R2	30	2.0	0.257	10.8	LOS B	1.0	25.5	0.70	0.70	0.70	30.2
Approach		130	2.0	0.257	10.8	LOS B	1.0	25.5	0.70	0.70	0.70	30.8
All Vehicles		1935	2.0	0.721	10.5	LOS B	7.1	180.9	0.57	0.41	0.57	31.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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 6).
Roundabout Capacity Model: US HCM 6.
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.

DKS

Preliminary Signal Warrants

Oregon Department of Transportation

Transportation Development Branch

Transportation Planning Analysis Unit

Preliminary Traffic Signal Warrant Analysis[1]

Major Street:	Beavercreek Rd	**Minor Street:**	Glen Oak Rd
Project:	Beavercreek Concept Plan	**City/County:**	Oregon City
Year:	2040	**Alternative:**	Metro model w Holly ext

Preliminary Signal Warrant Volumes

Number of Approach lanes		ADT on major street approaching from both directions		ADT on minor street, highest approaching volume	
Major Street	Minor Street	Percent of standard warrants 100	70	Percent of standard warrants 100	70
Case A: Minimum Vehicular Traffic					
1	1	8850	6200	2650	1850
2 or more	1	10600	7400	2650	1850
2 or more	2 or more	10600	7400	3550	2500
1	2 or more	8850	6200	3550	2500
Case B: Interruption of Continuous Traffic					
1	1	13300	9300	1350	950
2 or more	1	15900	11100	1350	950
2 or more	2 or more	15900	11100	1750	1250
1	2 or more	13300	9300	1750	1250
X	100 percent of standard warrants				
	70 percent of standard warrants[2]				

Preliminary Signal Warrant Calculation

	Street	Number of Lanes	Warrant Volumes	Approach Volumes	Warrant Met
Case A	Major	1	8850	15200	Y
	Minor	1	2650	2900	
Case B	Major	1	13300	15200	Y
	Minor	1	1350	2900	

Analyst and Date: Reviewer and Date:

[1] Meeting preliminary signal warrants does **not** guarantee that a signal will be installed. When preliminary signal warrants are met, project analysts need to coordinate with Region Traffic to initiate the traffic signal engineering investigation as outlined in the Traffic Manual. Before a signal can be installed, the engineering investigation must be conducted or reviewed by the Region Traffic Manager who will forward signal recommendations to headquarters. Traffic signal warrants must be met and the State Traffic Engineer's approval obtained before a traffic signal can be installed on a state highway.

[2] Used due to 85th percentile speed in excess of 40 mph or isolated community with population of less than 10,000.

Oregon Department of Transportation

Transportation Development Branch

Transportation Planning Analysis Unit

Preliminary Traffic Signal Warrant Analysis1

Major Street:	Beavercreek Rd	**Minor Street:**	Loder Rd
Project:	Beavercreek Concept Plan	**City/County:**	Oregon City
Year:	2040	**Alternative:**	Metro model w Holly ext

Preliminary Signal Warrant Volumes

Number of Approach lanes		ADT on major street approaching from both directions		ADT on minor street, highest approaching volume	
Major Street	Minor Street	Percent of standard warrants 100	70	Percent of standard warrants 100	70
Case A: Minimum Vehicular Traffic					
1	1	8850	6200	2650	1850
2 or more	1	10600	7400	2650	1850
2 or more	2 or more	10600	7400	3550	2500
1	2 or more	8850	6200	3550	2500
Case B: Interruption of Continuous Traffic					
1	1	13300	9300	1350	950
2 or more	1	15900	11100	1350	950
2 or more	2 or more	15900	11100	1750	1250
1	2 or more	13300	9300	1750	1250
X	100 percent of standard warrants				
	70 percent of standard warrants2				

Preliminary Signal Warrant Calculation

	Street	Number of Lanes	Warrant Volumes	Approach Volumes	Warrant Met
Case A	Major	1	8850	20300	N
	Minor	1	2650	1434	
Case B	Major	1	13300	20300	Y
	Minor	1	1350	1434	

Analyst and Date: Reviewer and Date: