Appendix F

Capacity Analysis Worksheets – No Build

HCM Unsignalized Intersection Capacity Analysis
9: Rte 35 & Rte 58 WB Off & Rte 58 WB On

7/5/2014

Movement	NBL2	NBL	NBR	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	95	0	10	0	0	10	188	0	0	225	38
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.76	0.76	0.76	0.93	0.93	0.93
Hourly flow rate (vph)	104	0	11	0	0	13	247	0	0	242	41
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	536	556	247	547	536	283			247		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	536	556	247	547	536	283			247		
tC, single (s)	7.3	6.7	6.4	7.1	6.5	4.2			4.2		
tC, 2 stage (s)											
tF (s)	3.7	4.2	3.5	3.5	4.0	2.3			2.3		
p0 queue free %	75	100	99	100	100	99			100		
cM capacity (veh/h)	421	407	743	438	446	1235			1279		

Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1
Volume Total	104	11	13	247	283
Volume Left	104	0	13	0	0
Volume Right	0	11	0	0	41
cSH	421	743	1235	1700	1700
Volume to Capacity	0.25	0.01	0.01	0.15	0.17
Queue Length 95th (ft)	24	1	1	0	0
Control Delay (s)	16.4	9.9	7.9	0.0	0.0
Lane LOS	C	A	A		
Approach Delay (s)	15.7		0.4		0.0
Approach LOS	C				

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Rte 35 & Rte 58 EB On & Rte 58 EB Off

7/5/2014

Movement	SBL2	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	50	0	25	0	0	0	139	119	20	282	0
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.92	0.92	0.84	0.84	0.84	0.67	0.67	0.67
Hourly flow rate (vph)	67	0	33	0	0	0	165	142	30	421	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	717	788	421	750	717	421			307		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	717	788	421	750	717	421			307		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	4.2			4.2		
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	3.5	4.0	2.3			2.3		
p0 queue free %	80	100	95	100	100	100			97		
cM capacity (veh/h)	334	312	626	304	346	1097			1194		

Direction, Lane #	SB 1	SB 2	NE 1	SW 1	SW 2
Volume Total	67	33	307	30	421
Volume Left	67	0	0	30	0
Volume Right	0	33	142	0	0
cSH	334	626	1700	1194	1700
Volume to Capacity	0.20	0.05	0.18	0.03	0.25
Queue Length 95th (ft)	18	4	0	2	0
Control Delay (s)	18.4	11.1	0.0	8.1	0.0
Lane LOS	C	B		A	
Approach Delay (s)	16.0		0.0	0.5	
Approach LOS	C				

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Rte 35 & Ridley/School

7/5/2014

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	109	6	15	0	12	21	40	128	4	1	68	238
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.59	0.59	0.59	0.64	0.64	0.64	0.89	0.89	0.89	0.65	0.65	0.65
Hourly flow rate (vph)	185	10	25	0	19	33	45	144	4	2	105	366
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	384	346	105	374	710	146	471			148		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	384	346	105	374	710	146	471			148		
tC, single (s)	7.3	6.7	6.4	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	62	98	97	100	94	96	96			100		
cM capacity (veh/h)	480	521	896	533	338	891	1060			1380		

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	195	25	52	45	148	2	105	366
Volume Left	185	0	0	45	0	2	0	0
Volume Right	0	25	33	0	4	0	0	366
cSH	482	896	559	1060	1700	1380	1700	1700
Volume to Capacity	0.40	0.03	0.09	0.04	0.09	0.00	0.06	0.22
Queue Length 95th (ft)	48	2	8	3	0	0	0	0
Control Delay (s)	17.4	9.1	12.1	8.5	0.0	7.6	0.0	0.0
Lane LOS	C	A	B	A		A		
Approach Delay (s)	16.5		12.1	2.0		0.0		
Approach LOS	C		B					

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
9: Rte 35 & Rte 58 WB Off & Rte 58 WB On

7/5/2014

Movement	NBL2	NBL	NBR	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	72	0	13	0	0	19	93	0	0	115	47
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.92	0.92	0.90	0.90	0.90	0.86	0.86	0.86
Hourly flow rate (vph)	96	0	17	0	0	21	103	0	0	134	55
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	307	334	103	324	307	188			103		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	307	334	103	324	307	188			103		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	4.1			4.1		
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	3.5	4.0	2.2			2.2		
p0 queue free %	85	100	98	100	100	98			100		
cM capacity (veh/h)	636	576	949	610	598	1368			1476		

Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1
Volume Total	96	17	21	103	188
Volume Left	96	0	21	0	0
Volume Right	0	17	0	0	55
cSH	636	949	1368	1700	1700
Volume to Capacity	0.15	0.02	0.02	0.06	0.11
Queue Length 95th (ft)	13	1	1	0	0
Control Delay (s)	11.7	8.9	7.7	0.0	0.0
Lane LOS	B	A	A		
Approach Delay (s)	11.2		1.3		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Rte 35 & Rte 58 EB On & Rte 58 EB Off

7/5/2014

Movement	SBL2	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	52	0	15	0	0	0	79	61	9	194	0
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.78	0.78	0.78	0.92	0.92	0.68	0.68	0.68	0.82	0.82	0.82
Hourly flow rate (vph)	67	0	19	0	0	0	116	90	11	237	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	420	464	237	439	420	237			206		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	420	464	237	439	420	237			206		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	4.2			4.1		
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	3.5	4.0	2.3			2.2		
p0 queue free %	88	100	98	100	100	100			99		
cM capacity (veh/h)	535	487	795	512	521	1285			1359		

Direction, Lane #	SB 1	SB 2	NE 1	SW 1	SW 2
Volume Total	67	19	206	11	237
Volume Left	67	0	0	11	0
Volume Right	0	19	90	0	0
cSH	535	795	1700	1359	1700
Volume to Capacity	0.12	0.02	0.12	0.01	0.14
Queue Length 95th (ft)	11	2	0	1	0
Control Delay (s)	12.7	9.6	0.0	7.7	0.0
Lane LOS	B	A		A	
Approach Delay (s)	12.0		0.0	0.3	
Approach LOS	B				

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Rte 35 & Ridley/School

7/5/2014

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	49	7	16	0	6	7	13	84	1	18	152	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.42	0.42	0.42	0.65	0.65	0.65	0.80	0.80	0.80	0.88	0.88	0.88
Hourly flow rate (vph)	117	17	38	0	9	11	16	105	1	20	173	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	367	352	173	398	396	106	217			106		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	367	352	173	398	396	106	217			106		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	79	97	96	100	98	99	99			99		
cM capacity (veh/h)	567	561	876	518	530	954	1335			1460		

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	133	38	20	16	106	20	173	44
Volume Left	117	0	0	16	0	20	0	0
Volume Right	0	38	11	0	1	0	0	44
cSH	567	876	697	1335	1700	1460	1700	1700
Volume to Capacity	0.24	0.04	0.03	0.01	0.06	0.01	0.10	0.03
Queue Length 95th (ft)	23	3	2	1	0	1	0	0
Control Delay (s)	13.3	9.3	10.3	7.7	0.0	7.5	0.0	0.0
Lane LOS	B	A	B	A		A		
Approach Delay (s)	12.4		10.3	1.0		0.6		
Approach LOS	B		B					

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
9: Rte 35 & Rte 58 WB Off & Rte 58 WB On

7/5/2014

Movement	NBL2	NBL	NBR	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	101	0	11	0	0	11	199	0	0	238	40
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.76	0.76	0.76	0.93	0.93	0.93
Hourly flow rate (vph)	111	0	12	0	0	14	262	0	0	256	43
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	568	590	262	580	568	299			262		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	568	590	262	580	568	299			262		
tC, single (s)	7.3	6.7	6.4	7.1	6.5	4.2			4.2		
tC, 2 stage (s)											
tF (s)	3.7	4.2	3.5	3.5	4.0	2.3			2.3		
p0 queue free %	72	100	98	100	100	99			100		
cM capacity (veh/h)	400	389	729	415	427	1218			1263		

Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1
Volume Total	111	12	14	262	299
Volume Left	111	0	14	0	0
Volume Right	0	12	0	0	43
cSH	400	729	1218	1700	1700
Volume to Capacity	0.28	0.02	0.01	0.15	0.18
Queue Length 95th (ft)	28	1	1	0	0
Control Delay (s)	17.4	10.0	8.0	0.0	0.0
Lane LOS	C	B	A		
Approach Delay (s)	16.7		0.4		0.0
Approach LOS	C				

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Rte 35 & Rte 58 EB On & Rte 58 EB Off

7/5/2014

Movement	SBL2	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	53	0	27	0	0	0	148	126	22	299	0
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.92	0.92	0.84	0.84	0.84	0.67	0.67	0.67
Hourly flow rate (vph)	71	0	36	0	0	0	176	150	33	446	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	763	838	446	799	763	446			326		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	763	838	446	799	763	446			326		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	4.2			4.2		
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	3.5	4.0	2.3			2.3		
p0 queue free %	77	100	94	100	100	100			97		
cM capacity (veh/h)	311	291	606	279	325	1073			1174		

Direction, Lane #	SB 1	SB 2	NE 1	SW 1	SW 2
Volume Total	71	36	326	33	446
Volume Left	71	0	0	33	0
Volume Right	0	36	150	0	0
cSH	311	606	1700	1174	1700
Volume to Capacity	0.23	0.06	0.19	0.03	0.26
Queue Length 95th (ft)	21	5	0	2	0
Control Delay (s)	20.0	11.3	0.0	8.2	0.0
Lane LOS	C	B		A	
Approach Delay (s)	17.1		0.0	0.6	
Approach LOS	C				

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Rte 35 & Ridley/School

7/5/2014

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	116	6	16	0	13	23	42	135	4	1	73	252
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.59	0.59	0.59	0.64	0.64	0.64	0.89	0.89	0.89	0.65	0.65	0.65
Hourly flow rate (vph)	197	10	27	0	20	36	47	152	4	2	112	388
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	408	366	112	396	751	154	500			156		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	408	366	112	396	751	154	500			156		
tC, single (s)	7.3	6.7	6.4	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	57	98	97	100	94	96	95			100		
cM capacity (veh/h)	457	506	887	513	319	882	1034			1371		

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	207	27	56	47	156	2	112	388
Volume Left	197	0	0	47	0	2	0	0
Volume Right	0	27	36	0	4	0	0	388
cSH	459	887	539	1034	1700	1371	1700	1700
Volume to Capacity	0.45	0.03	0.10	0.05	0.09	0.00	0.07	0.23
Queue Length 95th (ft)	57	2	9	4	0	0	0	0
Control Delay (s)	19.1	9.2	12.5	8.6	0.0	7.6	0.0	0.0
Lane LOS	C	A	B	A		A		
Approach Delay (s)	18.0		12.5	2.0		0.0		
Approach LOS	C		B					

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
9: Rte 35 & Rte 58 WB Off & Rte 58 WB On

7/5/2014

Movement	NBL2	NBL	NBR	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	76	0	14	0	0	21	99	0	0	122	50
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.92	0.92	0.90	0.90	0.90	0.86	0.86	0.86
Hourly flow rate (vph)	101	0	19	0	0	23	110	0	0	142	58
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	328	357	110	346	328	200			110		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	328	357	110	346	328	200			110		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	4.1			4.1		
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	3.5	4.0	2.2			2.2		
p0 queue free %	84	100	98	100	100	98			100		
cM capacity (veh/h)	615	558	941	588	581	1354			1468		

Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1
Volume Total	101	19	23	110	200
Volume Left	101	0	23	0	0
Volume Right	0	19	0	0	58
cSH	615	941	1354	1700	1700
Volume to Capacity	0.16	0.02	0.02	0.06	0.12
Queue Length 95th (ft)	15	2	1	0	0
Control Delay (s)	12.0	8.9	7.7	0.0	0.0
Lane LOS	B	A	A		
Approach Delay (s)	11.5		1.3		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Rte 35 & Rte 58 EB On & Rte 58 EB Off

7/5/2014

Movement	SBL2	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	55	0	16	0	0	0	84	64	10	206	0
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.78	0.78	0.78	0.92	0.92	0.68	0.68	0.68	0.82	0.82	0.82
Hourly flow rate (vph)	71	0	21	0	0	0	124	94	12	251	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	446	493	251	467	446	251			218		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	446	493	251	467	446	251			218		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	4.2			4.1		
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	3.5	4.0	2.3			2.2		
p0 queue free %	86	100	97	100	100	100			99		
cM capacity (veh/h)	514	468	780	490	502	1269			1346		

Direction, Lane #	SB 1	SB 2	NE 1	SW 1	SW 2
Volume Total	71	21	218	12	251
Volume Left	71	0	0	12	0
Volume Right	0	21	94	0	0
cSH	514	780	1700	1346	1700
Volume to Capacity	0.14	0.03	0.13	0.01	0.15
Queue Length 95th (ft)	12	2	0	1	0
Control Delay (s)	13.1	9.7	0.0	7.7	0.0
Lane LOS	B	A		A	
Approach Delay (s)	12.4		0.0	0.4	
Approach LOS	B				

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	30.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Rte 35 & Ridley/School

7/5/2014

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	52	8	17	0	6	8	14	89	1	19	161	41
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.42	0.42	0.42	0.65	0.65	0.65	0.80	0.80	0.80	0.88	0.88	0.88
Hourly flow rate (vph)	124	19	40	0	9	12	18	111	1	22	183	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	389	374	183	423	420	112	230			112		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	389	374	183	423	420	112	230			112		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	77	97	95	100	98	99	99			99		
cM capacity (veh/h)	546	544	865	495	513	947	1321			1452		

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	143	40	22	18	112	22	183	47
Volume Left	124	0	0	18	0	22	0	0
Volume Right	0	40	12	0	1	0	0	47
cSH	546	865	695	1321	1700	1452	1700	1700
Volume to Capacity	0.26	0.05	0.03	0.01	0.07	0.01	0.11	0.03
Queue Length 95th (ft)	26	4	2	1	0	1	0	0
Control Delay (s)	13.9	9.4	10.3	7.8	0.0	7.5	0.0	0.0
Lane LOS	B	A	B	A		A		
Approach Delay (s)	12.9		10.3	1.0		0.6		
Approach LOS	B		B					

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	28.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix G

Capacity Analysis Worksheets - Build

HCM Unsignalized Intersection Capacity Analysis
9: Rte 35 & Rte 58 WB Off & Rte 58 WB On

7/5/2014

Movement	NBL2	NBL	NBR	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	112	0	10	0	0	14	232	0	0	264	38
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.76	0.76	0.76	0.93	0.93	0.93
Hourly flow rate (vph)	123	0	11	0	0	18	305	0	0	284	41
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	646	667	305	657	646	325			305		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	646	667	305	657	646	325			305		
tC, single (s)	7.3	6.7	6.4	7.1	6.5	4.2			4.2		
tC, 2 stage (s)											
tF (s)	3.7	4.2	3.5	3.5	4.0	2.3			2.3		
p0 queue free %	65	100	98	100	100	98			100		
cM capacity (veh/h)	352	349	688	367	384	1191			1217		

Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1
Volume Total	123	11	18	305	325
Volume Left	123	0	18	0	0
Volume Right	0	11	0	0	41
cSH	352	688	1191	1700	1700
Volume to Capacity	0.35	0.02	0.02	0.18	0.19
Queue Length 95th (ft)	38	1	1	0	0
Control Delay (s)	20.6	10.3	8.1	0.0	0.0
Lane LOS	C	B	A		
Approach Delay (s)	19.8		0.5		0.0
Approach LOS	C				

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Rte 35 & Rte 58 EB On & Rte 58 EB Off

7/5/2014

Movement	SBL2	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	50	0	30	0	0	0	187	160	20	338	0
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.92	0.92	0.84	0.84	0.84	0.67	0.67	0.67
Hourly flow rate (vph)	67	0	40	0	0	0	223	190	30	504	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	882	977	504	922	882	504			413		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	882	977	504	922	882	504			413		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	4.2			4.2		
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	3.5	4.0	2.3			2.3		
p0 queue free %	74	100	93	100	100	100			97		
cM capacity (veh/h)	258	241	562	228	277	1020			1089		

Direction, Lane #	SB 1	SB 2	NE 1	SW 1	SW 2
Volume Total	67	40	413	30	504
Volume Left	67	0	0	30	0
Volume Right	0	40	190	0	0
cSH	258	562	1700	1089	1700
Volume to Capacity	0.26	0.07	0.24	0.03	0.30
Queue Length 95th (ft)	25	6	0	2	0
Control Delay (s)	23.7	11.9	0.0	8.4	0.0
Lane LOS	C	B		A	
Approach Delay (s)	19.3		0.0	0.5	
Approach LOS	C				

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Rte 35 & Ridley/School

7/5/2014

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	109	14	15	56	20	66	40	153	4	91	39	238
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.59	0.59	0.59	0.64	0.64	0.64	0.89	0.89	0.89	0.65	0.65	0.65
Hourly flow rate (vph)	185	24	25	88	31	103	45	172	4	140	60	366
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	721	606	60	641	970	174	426			176		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	721	606	60	641	970	174	426			176		
tC, single (s)	7.3	6.7	6.4	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	17	93	97	72	85	88	96			90		
cM capacity (veh/h)	222	330	949	314	214	859	1102			1347		

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	208	25	222	45	176	140	60	366
Volume Left	185	0	88	45	0	140	0	0
Volume Right	0	25	103	0	4	0	0	366
cSH	230	949	407	1102	1700	1347	1700	1700
Volume to Capacity	0.90	0.03	0.54	0.04	0.10	0.10	0.04	0.22
Queue Length 95th (ft)	189	2	79	3	0	9	0	0
Control Delay (s)	81.8	8.9	23.9	8.4	0.0	8.0	0.0	0.0
Lane LOS	F	A	C	A		A		
Approach Delay (s)	73.9		23.9	1.7		2.0		
Approach LOS	F		C					

Intersection Summary			
Average Delay	19.4		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
9: Rte 35 & Rte 58 WB Off & Rte 58 WB On

7/5/2014

Movement	NBL2	NBL	NBR	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	96	0	13	0	0	38	133	0	0	154	47
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.92	0.92	0.90	0.90	0.90	0.86	0.86	0.86
Hourly flow rate (vph)	128	0	17	0	0	42	148	0	0	179	55
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	439	466	148	456	439	234			148		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	439	466	148	456	439	234			148		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	4.1			4.1		
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	3.5	4.0	2.2			2.2		
p0 queue free %	75	100	98	100	100	97			100		
cM capacity (veh/h)	514	477	896	492	496	1316			1422		

Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1
Volume Total	128	17	42	148	234
Volume Left	128	0	42	0	0
Volume Right	0	17	0	0	55
cSH	514	896	1316	1700	1700
Volume to Capacity	0.25	0.02	0.03	0.09	0.14
Queue Length 95th (ft)	24	1	2	0	0
Control Delay (s)	14.3	9.1	7.8	0.0	0.0
Lane LOS	B	A	A		
Approach Delay (s)	13.7		1.7		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	30.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Rte 35 & Rte 58 EB On & Rte 58 EB Off

7/5/2014

Movement	SBL2	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	52	0	20	0	0	0	138	106	9	258	0
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.78	0.78	0.78	0.92	0.92	0.68	0.68	0.68	0.82	0.82	0.82
Hourly flow rate (vph)	67	0	26	0	0	0	203	156	11	315	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	617	695	315	643	617	315			359		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	617	695	315	643	617	315			359		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	4.2			4.1		
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	3.5	4.0	2.3			2.2		
p0 queue free %	83	100	96	100	100	100			99		
cM capacity (veh/h)	395	359	719	370	402	1202			1194		

Direction, Lane #	SB 1	SB 2	NE 1	SW 1	SW 2
Volume Total	67	26	359	11	315
Volume Left	67	0	0	11	0
Volume Right	0	26	156	0	0
cSH	395	719	1700	1194	1700
Volume to Capacity	0.17	0.04	0.21	0.01	0.19
Queue Length 95th (ft)	15	3	0	1	0
Control Delay (s)	16.0	10.2	0.0	8.0	0.0
Lane LOS	C	B		A	
Approach Delay (s)	14.4		0.0	0.3	
Approach LOS	B				

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	30.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Rte 35 & Ridley/School

7/5/2014

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	49	16	16	66	16	59	13	62	1	120	119	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.42	0.42	0.42	0.65	0.65	0.65	0.80	0.80	0.80	0.88	0.88	0.88
Hourly flow rate (vph)	117	38	38	102	25	91	16	78	1	136	135	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	621	519	135	576	563	78	180			79		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	621	519	135	576	563	78	180			79		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	64	91	96	71	94	91	99			91		
cM capacity (veh/h)	321	417	919	355	393	988	1378			1494		

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	155	38	217	16	79	136	135	44
Volume Left	117	0	102	16	0	136	0	0
Volume Right	0	38	91	0	1	0	0	44
cSH	340	919	493	1378	1700	1494	1700	1700
Volume to Capacity	0.45	0.04	0.44	0.01	0.05	0.09	0.08	0.03
Queue Length 95th (ft)	57	3	55	1	0	8	0	0
Control Delay (s)	24.1	9.1	17.9	7.6	0.0	7.7	0.0	0.0
Lane LOS	C	A	C	A		A		
Approach Delay (s)	21.1		17.9	1.3		3.3		
Approach LOS	C		C					

Intersection Summary			
Average Delay	11.1		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
9: Rte 35 & Rte 58 WB Off & Rte 58 WB On

7/5/2014

Movement	NBL2	NBL	NBR	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	126	0	11	0	0	14	244	0	0	278	40
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.76	0.76	0.76	0.93	0.93	0.93
Hourly flow rate (vph)	138	0	12	0	0	18	321	0	0	299	43
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	678	700	321	690	678	342			321		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	678	700	321	690	678	342			321		
tC, single (s)	7.3	6.7	6.4	7.1	6.5	4.2			4.2		
tC, 2 stage (s)											
tF (s)	3.7	4.2	3.5	3.5	4.0	2.3			2.3		
p0 queue free %	59	100	98	100	100	98			100		
cM capacity (veh/h)	335	333	674	348	368	1174			1200		

Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1
Volume Total	138	12	18	321	342
Volume Left	138	0	18	0	0
Volume Right	0	12	0	0	43
cSH	335	674	1174	1700	1700
Volume to Capacity	0.41	0.02	0.02	0.19	0.20
Queue Length 95th (ft)	49	1	1	0	0
Control Delay (s)	23.1	10.4	8.1	0.0	0.0
Lane LOS	C	B	A		
Approach Delay (s)	22.1		0.4		0.0
Approach LOS	C				

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Rte 35 & Rte 58 EB On & Rte 58 EB Off

7/5/2014

Movement	SBL2	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	53	0	31	0	0	0	195	167	22	355	0
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.92	0.92	0.84	0.84	0.84	0.67	0.67	0.67
Hourly flow rate (vph)	71	0	41	0	0	0	232	199	33	530	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	927	1026	530	968	927	530			431		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	927	1026	530	968	927	530			431		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	4.2			4.2		
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	3.5	4.0	2.3			2.3		
p0 queue free %	71	100	92	100	100	100			97		
cM capacity (veh/h)	240	225	543	210	260	998			1072		

Direction, Lane #	SB 1	SB 2	NE 1	SW 1	SW 2
Volume Total	71	41	431	33	530
Volume Left	71	0	0	33	0
Volume Right	0	41	199	0	0
cSH	240	543	1700	1072	1700
Volume to Capacity	0.29	0.08	0.25	0.03	0.31
Queue Length 95th (ft)	30	6	0	2	0
Control Delay (s)	26.2	12.2	0.0	8.5	0.0
Lane LOS	D	B		A	
Approach Delay (s)	21.0		0.0	0.5	
Approach LOS	C				

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Rte 35 & Ridley/School

7/5/2014

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	116	15	16	56	21	67	42	161	4	91	43	252
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.59	0.59	0.59	0.64	0.64	0.64	0.89	0.89	0.89	0.65	0.65	0.65
Hourly flow rate (vph)	197	25	27	88	33	105	47	181	4	140	66	388
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	743	626	66	664	1011	183	454			185		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	743	626	66	664	1011	183	454			185		
tC, single (s)	7.3	6.7	6.4	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	6	92	97	71	84	88	96			90		
cM capacity (veh/h)	210	320	942	300	202	849	1076			1337		

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	222	27	225	47	185	140	66	388
Volume Left	197	0	88	47	0	140	0	0
Volume Right	0	27	105	0	4	0	0	388
cSH	218	942	389	1076	1700	1337	1700	1700
Volume to Capacity	1.02	0.03	0.58	0.04	0.11	0.10	0.04	0.23
Queue Length 95th (ft)	234	2	88	3	0	9	0	0
Control Delay (s)	112.2	8.9	26.2	8.5	0.0	8.0	0.0	0.0
Lane LOS	F	A	D	A		A		
Approach Delay (s)	100.9		26.2	1.7		1.9		
Approach LOS	F		D					

Intersection Summary			
Average Delay	25.0		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
9: Rte 35 & Rte 58 WB Off & Rte 58 WB On

7/5/2014

Movement	NBL2	NBL	NBR	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	101	0	14	0	0	40	139	0	0	161	50
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.92	0.92	0.90	0.90	0.90	0.86	0.86	0.86
Hourly flow rate (vph)	135	0	19	0	0	44	154	0	0	187	58
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	460	489	154	478	460	245			154		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	460	489	154	478	460	245			154		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	4.1			4.1		
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	3.5	4.0	2.2			2.2		
p0 queue free %	73	100	98	100	100	97			100		
cM capacity (veh/h)	497	462	889	474	481	1303			1414		

Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1
Volume Total	135	19	44	154	245
Volume Left	135	0	44	0	0
Volume Right	0	19	0	0	58
cSH	497	889	1303	1700	1700
Volume to Capacity	0.27	0.02	0.03	0.09	0.14
Queue Length 95th (ft)	27	2	3	0	0
Control Delay (s)	14.9	9.1	7.9	0.0	0.0
Lane LOS	B	A	A		
Approach Delay (s)	14.2		1.8		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Rte 35 & Rte 58 EB On & Rte 58 EB Off

7/5/2014

Movement	SBL2	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (veh/h)	55	0	21	0	0	0	143	109	10	269	0
Sign Control		Stop		Stop			Free			Free	
Grade		0%		0%			0%			0%	
Peak Hour Factor	0.78	0.78	0.78	0.92	0.92	0.68	0.68	0.68	0.82	0.82	0.82
Hourly flow rate (vph)	71	0	27	0	0	0	210	160	12	328	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type							None			None	
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	643	723	328	670	643	328			371		
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	643	723	328	670	643	328			371		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	4.2			4.1		
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	3.5	4.0	2.3			2.2		
p0 queue free %	81	100	96	100	100	100			99		
cM capacity (veh/h)	379	345	706	354	388	1188			1182		

Direction, Lane #	SB 1	SB 2	NE 1	SW 1	SW 2
Volume Total	71	27	371	12	328
Volume Left	71	0	0	12	0
Volume Right	0	27	160	0	0
cSH	379	706	1700	1182	1700
Volume to Capacity	0.19	0.04	0.22	0.01	0.19
Queue Length 95th (ft)	17	3	0	1	0
Control Delay (s)	16.6	10.3	0.0	8.1	0.0
Lane LOS	C	B		A	
Approach Delay (s)	14.9		0.0	0.3	
Approach LOS	B				

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Rte 35 & Ridley/School

7/5/2014

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	52	17	17	66	16	60	14	68	1	121	128	41
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.42	0.42	0.42	0.65	0.65	0.65	0.80	0.80	0.80	0.88	0.88	0.88
Hourly flow rate (vph)	124	40	40	102	25	92	18	85	1	138	145	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	645	542	145	602	588	86	192			86		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	645	542	145	602	588	86	192			86		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	60	90	96	70	94	91	99			91		
cM capacity (veh/h)	308	403	907	337	380	979	1364			1485		

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	164	40	218	18	86	138	145	47
Volume Left	124	0	102	18	0	138	0	0
Volume Right	0	40	92	0	1	0	0	47
cSH	327	907	474	1364	1700	1485	1700	1700
Volume to Capacity	0.50	0.04	0.46	0.01	0.05	0.09	0.09	0.03
Queue Length 95th (ft)	67	3	60	1	0	8	0	0
Control Delay (s)	26.7	9.2	18.9	7.7	0.0	7.7	0.0	0.0
Lane LOS	D	A	C	A		A		
Approach Delay (s)	23.2		18.9	1.3		3.2		
Approach LOS	C		C					

Intersection Summary			
Average Delay	11.8		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix H

Capacity Analysis Worksheets – Ridley Mitigation Testing

HCM Unsignalized Intersection Capacity Analysis
3: Rte 35 & Ridley/School

7/5/2014

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Right Turn Channelized												
Volume (veh/h)	116	15	16	56	21	67	42	161	4	91	43	252
Peak Hour Factor	0.59	0.59	0.59	0.64	0.64	0.64	0.89	0.89	0.89	0.65	0.65	0.65
Hourly flow rate (vph)	197	25	27	88	33	105	47	181	4	140	66	388
Approach Volume (veh/h)		249			225			233			594	
Crossing Volume (veh/h)		294			425			362			168	
High Capacity (veh/h)		1100			991			1042			1215	
High v/c (veh/h)		0.23			0.23			0.22			0.49	
Low Capacity (veh/h)		903			806			851			1007	
Low v/c (veh/h)		0.28			0.28			0.27			0.59	

Intersection Summary			
Maximum v/c High	0.49		
Maximum v/c Low	0.59		
Intersection Capacity Utilization	53.7%	ICU Level of Service	A

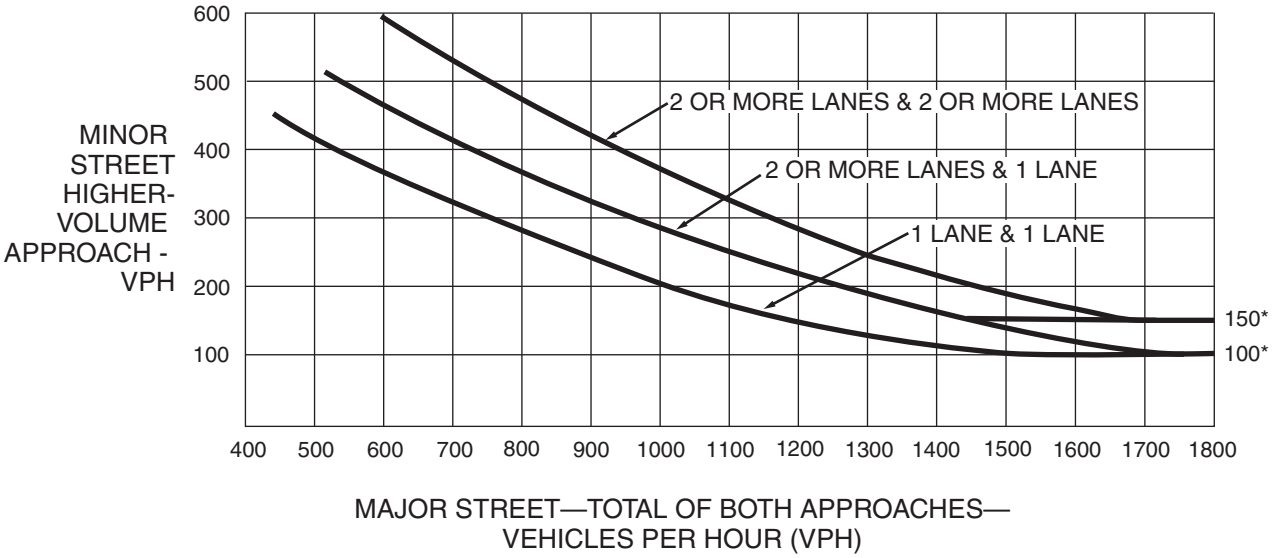
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	116	15	16	56	21	67	42	161	4	91	43	252
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	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 Sat Flow veh/h/ln	190.0	154.5	154.5	190.0	179.2	190.0	175.9	175.9	190.0	171.2	171.2	171.2
Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Cap, veh/h	371	47	372	179	67	214	396	277	6	405	365	310
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.04	0.16	0.16	0.09	0.21	0.21
Sat Flow, veh/h	1313	167	1313	634	238	756	1675	1715	38	1630	1712	1455
Grp Volume(v), veh/h	222	0	27	226	0	0	47	0	185	140	66	388
Grp Sat Flow(s),veh/h/ln	1479	0	1313	1627	0	0	1675	0	1753	1630	1712	1455
Q Serve(g_s), s	4.9	0.0	0.6	4.5	0.0	0.0	0.9	0.0	3.8	2.5	1.2	8.3
Cycle Q Clear(g_c), s	4.9	0.0	0.6	4.5	0.0	0.0	0.9	0.0	3.8	2.5	1.2	8.3
Prop In Lane	0.89		1.00	0.39		0.46	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	419	0	372	461	0	0	396	0	283	405	365	310
V/C Ratio(X)	0.53	0.00	0.07	0.49	0.00	0.00	0.12	0.00	0.65	0.35	0.18	1.25
Avail Cap(c_a), veh/h	419	0	372	461	0	0	716	0	451	547	365	310
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.8	0.0	10.2	11.6	0.0	0.0	12.7	0.0	15.3	10.8	12.5	15.3
Incr Delay (d2), s/veh	4.8	0.0	0.4	3.7	0.0	0.0	0.1	0.0	2.5	0.5	0.2	137.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	2.0	0.0	0.2	2.0	0.0	0.0	0.3	0.0	1.7	0.7	0.4	14.0
Lane Grp Delay (d), s/veh	16.5	0.0	10.6	15.3	0.0	0.0	12.9	0.0	17.8	11.3	12.8	152.6
Lane Grp LOS	B		B	B			B		B	B	B	F
Approach Vol, veh/h		249			226			232			594	
Approach Delay, s/veh		15.9			15.3			16.8			103.7	
Approach LOS		B			B			B			F	

Timer								
Assigned Phs		6			2		7	4		3	8	
Phs Duration (G+Y+Rc), s		17.0			17.0		7.6	12.3		9.6	14.3	
Change Period (Y+Rc), s		6.0			6.0		6.0	6.0		6.0	6.0	
Max Green Setting (Gmax), s		11.0			8.0		9.0	10.0		7.0	8.0	
Max Q Clear Time (g_c+I1), s		6.9			6.5		2.9	5.8		4.5	10.3	
Green Ext Time (p_c), s		1.1			0.5		0.0	0.4		0.1	0.0	

Intersection Summary	
HCM 2010 Ctrl Delay	56.1
HCM 2010 LOS	E

Notes

Figure 4C-3. Warrant 3, Peak Hour

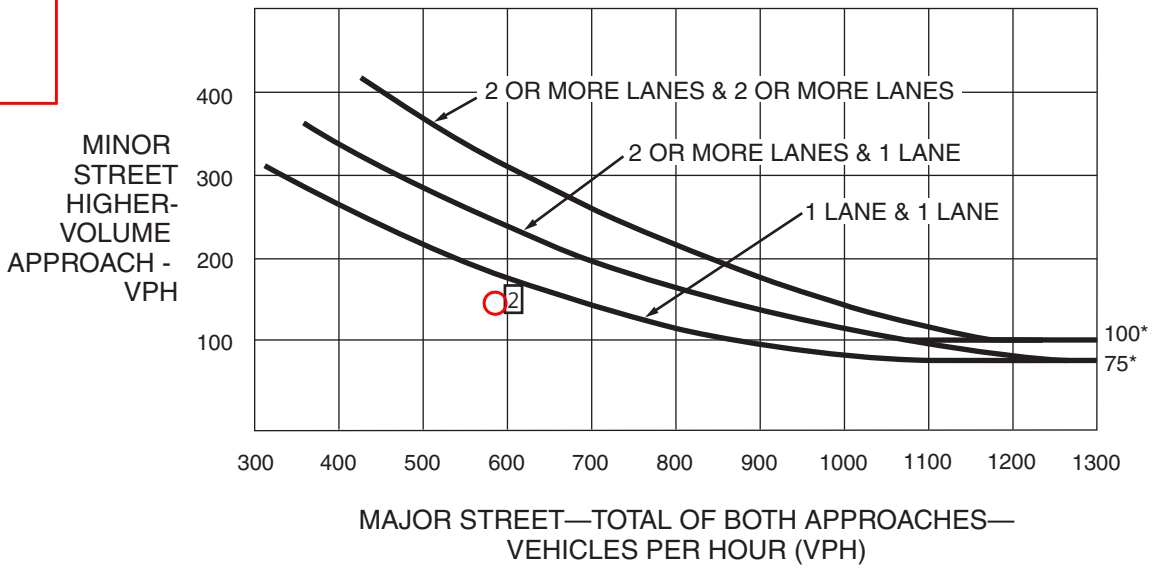


*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Rte 35 and Ridley [1]
Major = 593
Minor = 147
Not Warranted

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

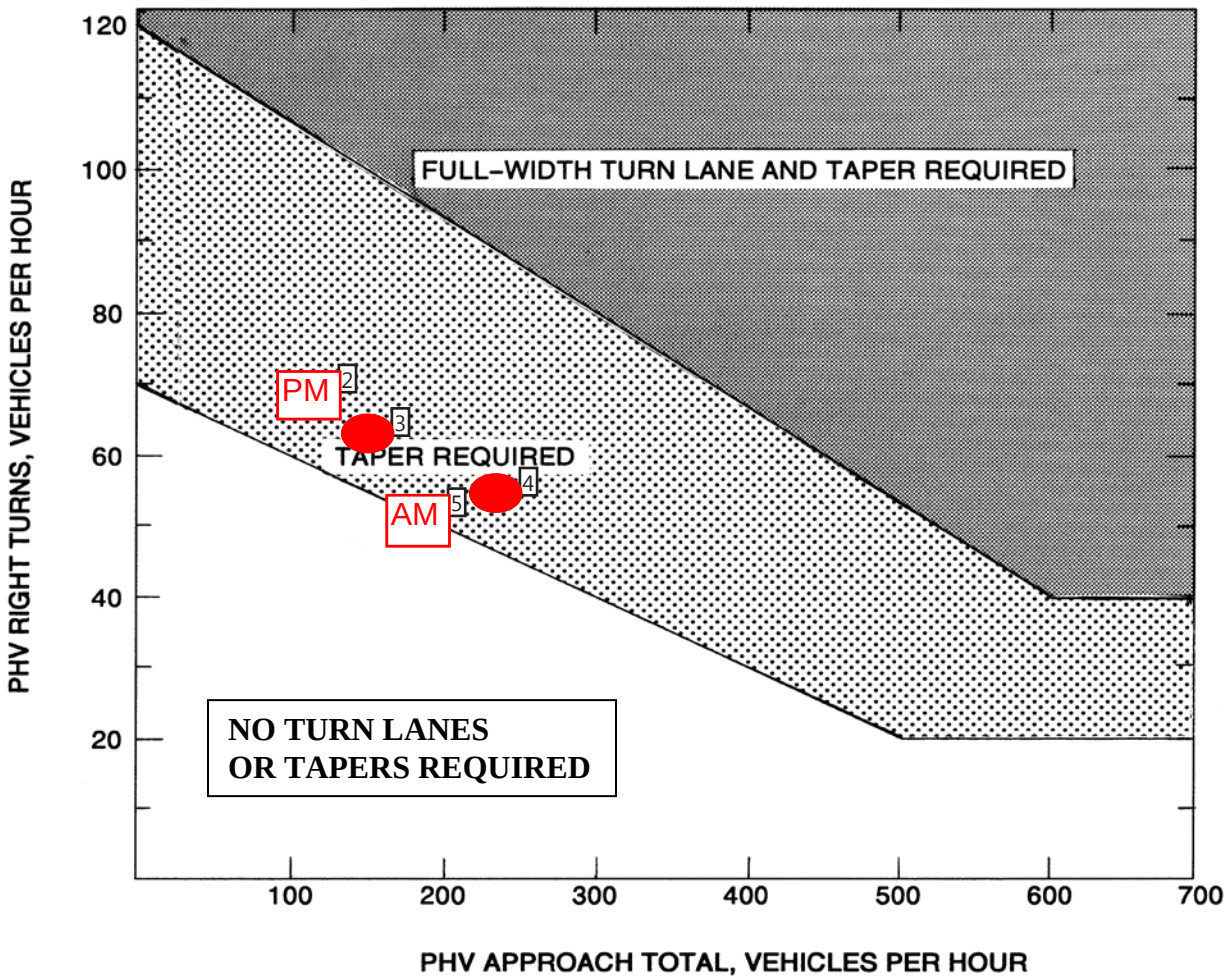
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Appendix I

Turn Lane Worksheets



Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV - Peak Hour Volume (also Design Hourly Volume equivalent)

Adjustment for Right Turns

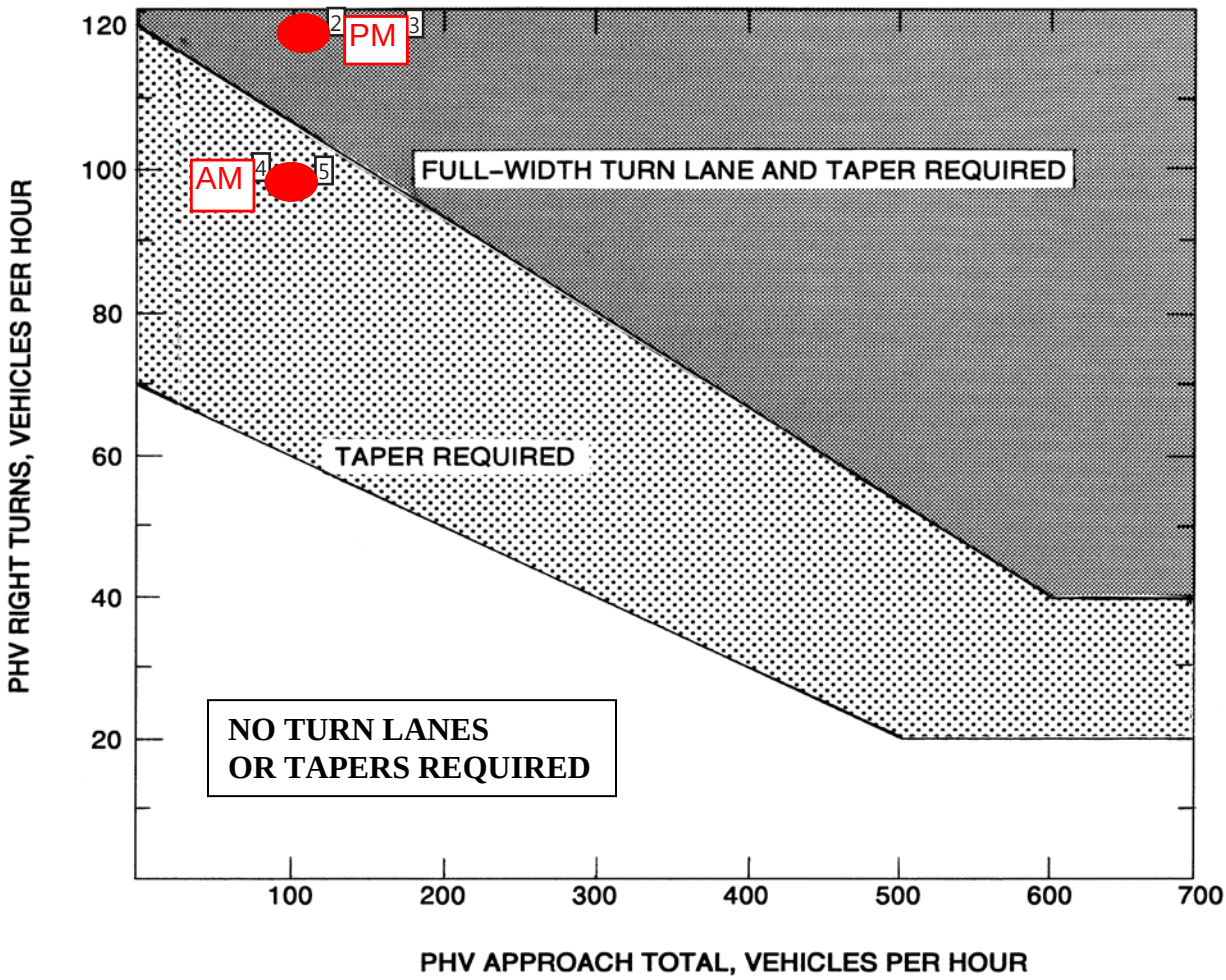
For posted speeds at or under 45 mph, PHV right turns > 40, and PHV total < 300.
Adjusted right turns = PHV Right Turns - 20
If PHV is not known use formula: PHV = ADT x K x D

K = the percent of AADT occurring in the peak hour
D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

FIGURE 3-26 GUIDELINES FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)

Ridley Rd Access
Build 2021



Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV - Peak Hour Volume (also Design Hourly Volume equivalent)

Adjustment for Right Turns

For posted speeds at or under 45 mph, PHV right turns > 40, and PHV total < 300.
Adjusted right turns = PHV Right Turns - 20
If PHV is not known use formula: PHV = ADT x K x D

K = the percent of AADT occurring in the peak hour
D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

FIGURE 3-26 GUIDELINES FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)

Ridley Road Access
Build 2021

1

Warrants for Left Turn Storage Lanes on Two-Lane Highways

Advancing volume and opposing volumes (VPH), speed and percent left turns are used to determine whether a left turn storage lane is warranted on two-lane highways.

The warrants in table below are taken from the 2011 AASHTO "Green Book", Page 9-132, Table 9-23. They were derived from Highway Research Report No. 211, Figures 2 through 19, for required storage length determinations.

The No. 211 study was undertaken to provide consistent volume warrants for left-turn storage lanes at unsignalized intersections.

WARRANTS FOR LEFT TURN LANES ON TWO-LANE HIGHWAYS

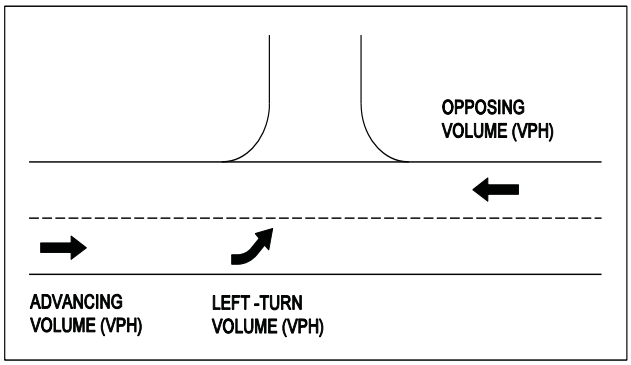
VPH OPPOSING VOLUME	ADVANCING VOLUME			
	5% LEFT TURNS	10% LEFT TURNS	20% LEFT TURNS	30% LEFT TURNS
	40-MPH DESIGN SPEED*			
800	330	240	180	160
600	410	305	225	200
400	510	380	275	245
200	640	470	350	305
100	720	515	390	340
	50-MPH DESIGN SPEED*			
800	280	210	165	135
600	350	280	195	170
400	430	320	240	210
200	550	400	300	270
100	615	445	335	295
	60-MPH DESIGN SPEED*			
800	230	170	125	115
600	290	210	160	140
400	365	270	200	175
200	450	330	250	215
100	505	370	275	240

2

TABLE 3-1*

Source: Adapted from 2011 AASHTO Green Book, Page 9-132, Table 9-23

***** USE DESIGN SPEED IF AVAILABLE, IF NOT USE LEGAL SPEED LIMIT.



Example:

Two-lane highway with 40-MPH operating speed

Opposing Volume (VPH) - 600
Advancing Volume (VPH) - 440
Left-Turn Volume (VPH) - 44 or 10% of Advancing Volume

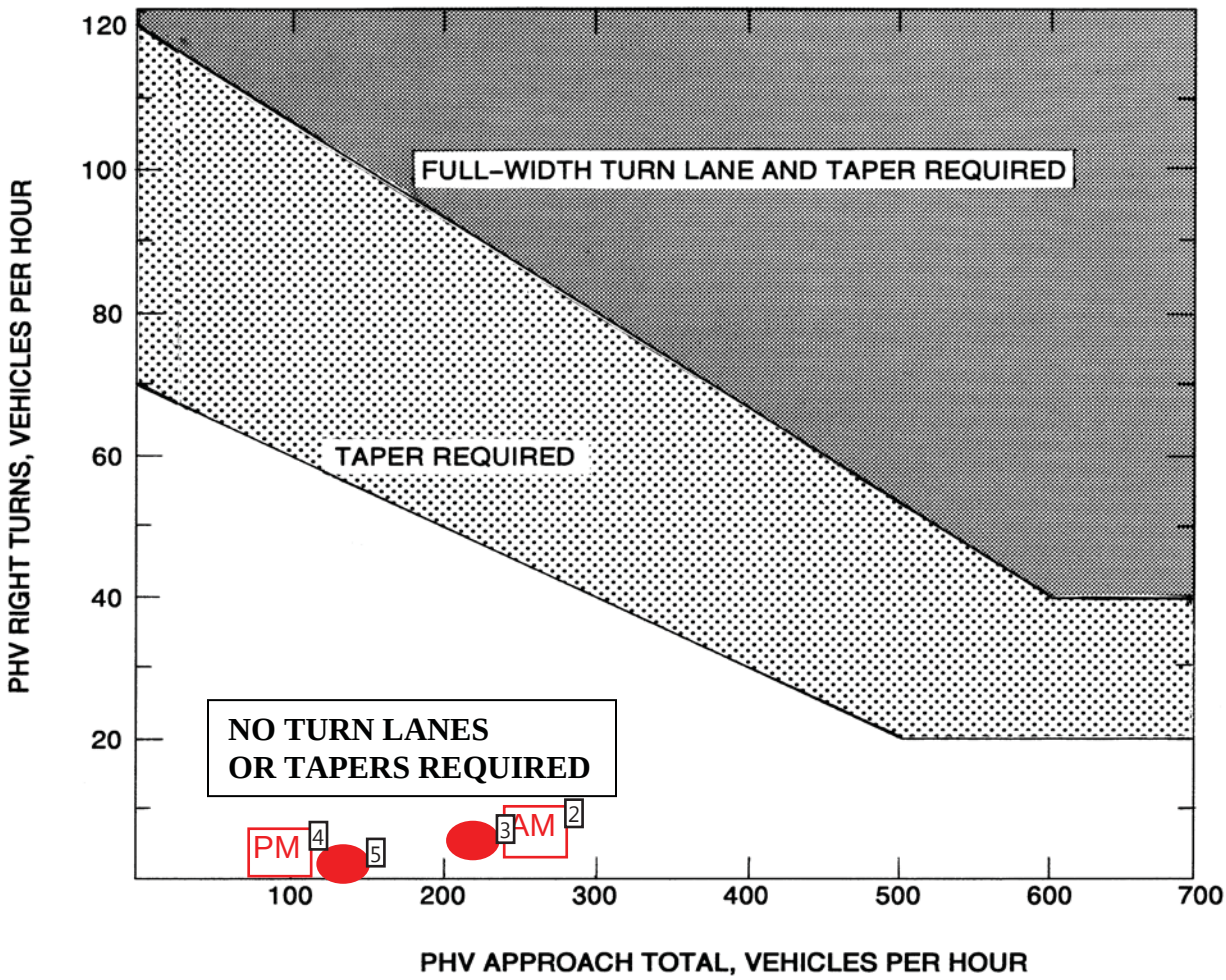
With opposing volume (VPH) of 600 and 10% of advancing volume (VPH) making left turns, and advancing volume (VPH) of 305 or more will warrant a left-turn lane.

When the Average Running Speed on an existing facility is available, the corresponding Design Speed may be obtained from IIM LD- 117.

3

	AM	PM
- Opposing Vol	110	139
-% Left Turns	20	30
-Advancing Vol	44	23
	Not Met	Not Met

* Rev. 1/13



Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV - Peak Hour Volume (also Design Hourly Volume equivalent)

Adjustment for Right Turns

For posted speeds at or under 45 mph, PHV right turns > 40, and PHV total < 300.
Adjusted right turns = PHV Right Turns - 20
If PHV is not known use formula: PHV = ADT x K x D

K = the percent of AADT occurring in the peak hour
D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

FIGURE 3-26 GUIDELINES FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)

Mike Johnson

From: Beth Lewis <blewis@franklinva.com>
Sent: Friday, October 10, 2014 4:10 PM
To: Mike Johnson
Subject: FW: Meherrin and Ridley Road
Attachments: image001.jpg

Mike,
Here is an amended comment regarding traffic around the middle and high schools. Regardless, the TIA assumed all traffic used the Meherrin Road entrance, so if only a car or two uses 58, the traffic on Meherrin is reduced below what the study accounted for.
Thanks,
Beth

Beth Lewis, AICP
Community Development Deputy Director
Franklin Southampton Community Development Department
207 West Second Avenue
Franklin, VA 23851

_____

From: Drewery, Gene H. [drewerygh@shso.org]
Sent: Friday, October 10, 2014 4:03 PM
To: bphillips@southamptoncounty.org
Cc: Beth Lewis
Subject: Meherrin and Ridley Road

Mr. Phillips, I looked back for two years and found only one accident at or near the intersection. Per our phone conversation, I found the following; Students use both the Meherrin Road (Hwy 35) and Southampton Pkwy(Hwy 58) driveways to the schools in the morning and afternoon.
My earlier response had stated different and I stand corrected. The School Resource Officer controls the civilian traffic in the parking lot to ensure a smooth flow for the buses to enter and exit.
The Sheriff's office has voluntarily provided only in the afternoon traffic control for several years for the buses only. The afternoon traffic control was initiated by Capt. J. A. Wyche several years ago on his own and not requested by the School Board.

Major G.H. Drewery
Chief Deputy
PIO/Fire Investigator
Office (757) 653-2100
Fax (757) 653-9452
ORI VA0870000
[fbina]
256th Session

JDW Development of Virginia LLC
c/o David Williams
736 Forest Mills Road
Chesapeake, VA 23322

Wilbert and Mahala Williams
24428 Greenhead Road
Courtland, VA 23837

Wilbert Williams and Eunice Wilson
24428 Greenhead Road
Courtland, VA 23837

Maynard Boykins Jr etals
P.O. Box 412
Courtland, VA 23837

Branch Banking & Trust Co.
P.O. Box 1847
2713 Forest Hills Road
Wilson, NC 27894

Kenneth Barnes
23740 Ridley Road
Courtland, VA 23837

Mary Irby
23768 Ridley Road
Courtland, VA 23837

Teresa Reichert
12 Seaview Avenue
Northport, NY 11768

Meredith and Nancy Turner
24034 Ridley Road
Courtland, VA 23837

Daniel and Annetta Moore
24275 Moore Road
Courtland, VA 23837

Christian and Hazel Moore
24283 Moore Road
Courtland, VA 23837

Dennis Butler
27217 Midway Drive
Courtland, VA 23837

Brenda Tennessee
24141 Ridley Road
Courtland VA 23837

Timothy and Kimberly Nixon
24205 Ridley Road
Courtland, VA 23837

Paul Leathers etals
24220 Ridley Road
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Patricia and Inez Faltz
24232 Ridley Road
Courtland, VA 23837

Kenneth and Shelby Bradshaw
24247 Ridley Road
Courtland, VA 23837

Vera Dawson and Helen Parker
24292 Ridley Road
Courtland, VA 23837

Lillie Murphy
24316 Ridley Road
Courtland, VA 23837

Evelyn Musser etals
24433 Churchill Drive
Courtland, VA 23837

Paul and Marguerite Leathers
24591 Greenhead Road
Courtland, VA 23837

Helen Simmons
406 Hunterdale Road
Franklin, VA 23851

Natalie Coggsdale
LW Crowder
23376 Meherrin Road
Courtland, VA 23837

William Chambliss
19545 Ivor Road
Courtland, VA 23837

Frances Stanton TR
B Keith Stanton
c/o Evelyn Miller
4 Mill Creek Terrace
Hampton, VA 23663

Joseph and Gladys Pettiford TR
1608 N. Howard Street
Alexandria, VA 22304

William Barham etals
c/o Brenda Myers
54 Cheswold Blvd, Apt 516
Newark, DE 19713

Dianne Williams life estate
c/o Cheryl Roberts
23247 Hanging Tree Road
Courtland, VA 23837

Fitzgerald Barnes
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Louisa, VA 23093

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