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APPENDIX A

EXISTING (2009) TRAFFIC VOLUMES & COUNT SHEETS

Project Name :	Temple Baptist Church
Project # :	0
Location	Loudoun County
Data Source:	Gorove/Slade Associates, Inc.

Intersection: Ashburn Village Boulevard at Farmwell Road

Date of Counts: Thursday, May 14, 2009

AM Weather Conditions: Clear

PM Weather Conditions: Clear

AM PEAK

Direction:	Southbound				Westbound				Northbound				Eastbound			
Roadway:	Ashburn Village Blvd.				Farmwell Rd.				Ashburn Village Blvd.				Farmwell Rd.			
Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM to 6:15 AM	5	23	100	0	15	32	3	0	7	5	2	0	19	160	5	
6:15 AM to 6:30 AM	8	28	149	0	9	29	4	0	20	7	4	1	13	226	3	
6:30 AM to 6:45 AM	2	49	131	0	20	61	8	0	34	10	5	0	13	275	5	
6:45 AM to 7:00 AM	35	49	177	0	17	78	9	0	23	15	2	0	17	297	15	
7:00 AM to 7:15 AM	27	64	175	0	35	51	10	0	29	34	5	0	22	284	38	
7:15 AM to 7:30 AM	21	81	138	0	35	69	17	0	26	36	12	0	21	280	33	
7:30 AM to 7:45 AM	58	72	149	0	40	95	18	0	26	41	6	0	30	360	31	
7:45 AM to 8:00 AM	51	90	142	0	35	86	24	0	27	41	7	0	36	295	32	
8:00 AM to 8:15 AM	49	64	147	0	30	75	26	0	28	53	10	1	46	271	34	
8:15 AM to 8:30 AM	50	85	130	0	39	96	17	2	30	45	20	2	34	233	35	
8:30 AM to 8:45 AM	96	72	97	0	48	92	22	0	33	45	16	0	29	249	27	
8:45 AM to 9:00 AM	91	76	109	0	46	92	28	0	28	52	12	0	41	230	38	

PM PEAK

Direction:	Southbound				Westbound				Northbound				Eastbound			
Roadway:	Ashburn Village Blvd.				Farmwell Rd.				Ashburn Village Blvd.				Farmwell Rd.			
Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM to 4:15 PM	39	66	56	0	112	250	45	7	31	107	30	1	59	126	61	
4:15 PM to 4:30 PM	59	52	79	0	140	306	53	0	27	96	19	0	25	132	31	
4:30 PM to 4:45 PM	41	72	79	0	142	325	59	1	30	107	29	0	34	137	46	
4:45 PM to 5:00 PM	31	88	83	0	161	293	68	0	27	118	35	1	48	129	53	
5:00 PM to 5:15 PM	40	83	81	0	184	323	61	0	24	138	41	1	24	129	41	
5:15 PM to 5:30 PM	51	90	64	0	154	319	67	2	38	125	32	0	39	143	38	
5:30 PM to 5:45 PM	57	77	70	0	160	323	42	9	20	130	41	0	46	120	50	
5:45 PM to 6:00 PM	52	85	82	0	183	351	53	1	28	135	44	0	53	142	61	
6:00 PM to 6:15 PM	57	94	81	0	197	334	86	0	19	130	42	1	43	111	50	
6:15 PM to 6:30 PM	35	81	62	0	206	308	50	1	16	116	46	0	31	127	62	
6:30 PM to 6:45 PM	42	82	88	0	160	304	66	2	14	130	40	0	31	113	38	
6:45 PM to 7:00 PM	31	65	85	0	154	298	56	2	32	93	22	1	24	109	29	

PEAK HOURS

Direction:	Southbound				Westbound				Northbound				Eastbound			
Roadway:	Ashburn Village Blvd.				Farmwell Rd.				Ashburn Village Blvd.				Farmwell Rd.			
Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR																
7:30 AM to 8:30 AM	208	311	568	0	144	352	85	2	111	180	43	3	146	1159	132	0
PM INTERSECTION PEAK HOUR																
5:15 PM to 6:15 PM	217	346	297	0	694	1327	248	12	105	520	159	1	181	516	199	0
AM SYSTEM PEAK HOUR																
7:45 AM to 8:45 AM	246	311	516	0	152	349	89	2	118	184	53	3	145	1048	128	0
PM SYSTEM PEAK HOUR																
5:30 PM to 6:30 PM	201	337	295	0	746	1316	231	11	83	511	173	1	173	500	223	0

PEAK HOUR FACOTRS

	Southbound				Westbound				Northbound				Eastbound			
	Ashburn Village Blvd.				Farmwell Rd.				Ashburn Village Blvd.				Farmwell Rd.			
	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM PEAK HOUR	0.64	0.86	0.88	**0.95**	0.79	0.91	0.86	**0.91**	0.89	0.87	0.66	**0.93**	0.79	0.89	0.91	**0.91**
	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
PM PEAK HOUR	0.88	0.90	0.90	**0.90**	0.91	0.94	0.67	**0.93**	0.74	0.95	0.94	**0.93**	0.82	0.88	0.90	**0.88**

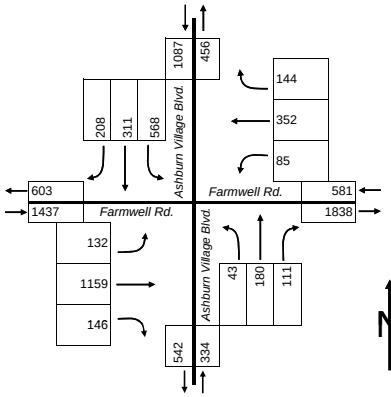
Overall AM PEAK HOUR FACTOR = **0.96**

Overall PM PEAK HOUR FACTOR = **0.94**

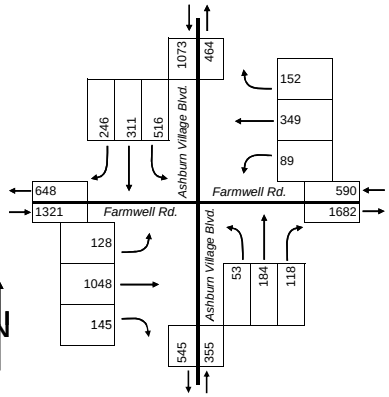
AM Period Intersection Volume: 8874

PM Period Intersection Volume: 13460

AM INTERSECTION PEAK VOLUMES

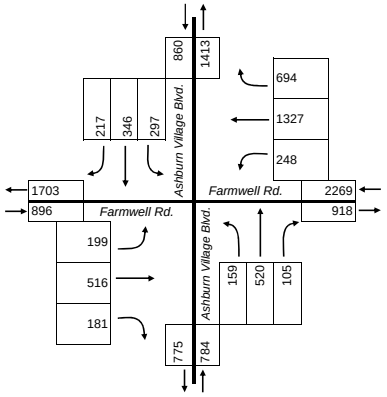


AM SYSTEM PEAK VOLUMES

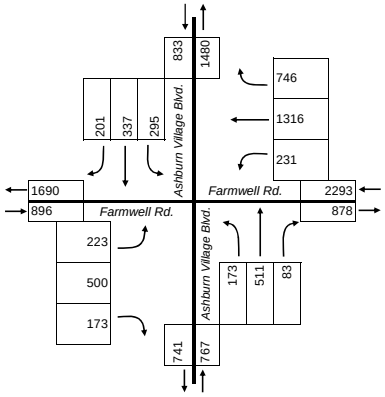


N

PM INTERSECTION PEAK VOLUMES



PM SYSTEM PEAK VOLUMES



Project Name :	Temple Baptist Church
Project # :	0
Location	Loudoun County
Data Source:	Gorove/Slade Associates, Inc.

Intersection: Michener Avenue at Ashburn Village Boulevard

Date of Counts: Thursday, May 14, 2009
AM Weather Conditions: Clear
PM Weather Conditions: Clear

AM PEAK

			Southbound				Westbound				Northbound				Eastbound			
		Roadway:	**Ashburn Village Blvd.**				**Plaza Access**				**Ashburn Village Blvd.**				**Michener Ave.**			
		Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to	6:15 AM	3	17	27	0	9	1	4	0	8	6	6	1	0	3	2	0
6:15 AM	to	6:30 AM	1	25	24	0	4	3	4	0	9	14	2	0	0	2	6	0
6:30 AM	to	6:45 AM	3	39	23	0	5	0	8	2	3	11	1	1	1	5	11	0
6:45 AM	to	7:00 AM	0	47	22	0	7	3	4	0	6	18	6	0	2	13	15	0
7:00 AM	to	7:15 AM	3	38	38	0	9	2	7	0	6	29	7	0	7	3	12	0
7:15 AM	to	7:30 AM	7	64	24	0	10	1	2	0	9	29	11	0	1	5	13	0
7:30 AM	to	7:45 AM	9	77	29	0	10	5	3	0	8	34	15	0	1	5	15	0
7:45 AM	to	8:00 AM	5	83	35	0	10	4	10	0	14	35	23	0	5	16	12	0
8:00 AM	to	8:15 AM	11	66	36	0	13	9	21	0	11	50	20	0	11	3	18	0
8:15 AM	to	8:30 AM	10	91	33	2	10	7	22	0	12	27	34	1	23	12	57	0
8:30 AM	to	8:45 AM	7	81	22	0	8	3	15	1	7	34	11	0	12	4	27	0
8:45 AM	to	9:00 AM	5	88	26	1	12	6	13	0	5	33	7	0	9	12	28	0

PM PEAK

			Southbound				Westbound				Northbound				Eastbound			
		Roadway:	**Ashburn Village Blvd.**				**Plaza Access**				**Ashburn Village Blvd.**				**Michener Ave.**			
		Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM	to	4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:15 PM	to	4:30 PM	12	60	30	0	14	10	13	0	4	44	11	1	7	1	15	0
4:30 PM	to	4:45 PM	17	75	69	0	18	12	14	0	4	75	19	1	16	8	29	0
4:45 PM	to	5:00 PM	28	91	69	0	20	21	21	0	5	73	24	0	18	7	45	0
5:00 PM	to	5:15 PM	8	31	39	0	30	25	18	0	3	38	25	0	15	3	26	0
5:15 PM	to	5:30 PM	12	98	60	0	36	29	13	0	7	98	22	0	19	8	37	0
5:30 PM	to	5:45 PM	9	99	59	0	24	40	20	1	6	131	33	0	18	8	35	0
5:45 PM	to	6:00 PM	11	83	89	0	21	30	27	0	6	114	24	0	16	5	34	0
6:00 PM	to	6:15 PM	17	94	57	0	17	17	21	0	1	127	13	0	13	8	29	0
6:15 PM	to	6:30 PM	16	85	57	0	29	32	14	0	13	93	22	0	17	7	40	0
6:30 PM	to	6:45 PM	16	69	47	0	31	20	13	0	2	76	25	0	11	6	37	0
6:45 PM	to	7:00 PM	12	71	50	0	18	8	21	0	4	97	9	0	4	0	31	0

PEAK HOURS

			Southbound				Westbound				Northbound				Eastbound			
		Roadway:	**Ashburn Village Blvd.**				**Plaza Access**				**Ashburn Village Blvd.**				**Michener Ave.**			
		Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR																		
7:45 AM	to	8:45 AM	33	321	126	2	41	23	68	1	44	146	88	1	51	35	114	0
PM INTERSECTION PEAK HOUR																		
5:15 PM	to	6:15 PM	49	374	265	0	98	116	81	1	20	470	92	0	66	29	135	0
AM SYSTEM PEAK HOUR																		
7:45 AM	to	8:45 AM	33	321	126	2	41	23	68	1	44	146	88	1	51	35	114	0
PM SYSTEM PEAK HOUR																		
5:30 PM	to	6:30 PM	53	361	262	0	91	119	82	1	26	465	92	0	64	28	138	0

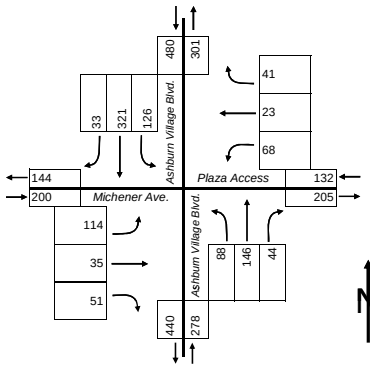
PEAK HOUR FACOTRS

	Southbound				Westbound				Northbound				Eastbound			
	Ashburn Village Blvd.				**Plaza Access**				**Ashburn Village Blvd.**				**Michener Ave.**			
AM Peak Hour	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM PEAK HOUR	0.75	0.88	0.88	**0.90**	0.79	0.64	0.77	**0.77**	0.79	0.73	0.65	**0.86**	0.55	0.55	0.50	**0.54**
	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
PM PEAK HOUR	0.78	0.91	0.74	**0.92**	0.78	0.74	0.76	**0.87**	0.50	0.89	0.70	**0.86**	0.89	0.88	0.86	**0.90**

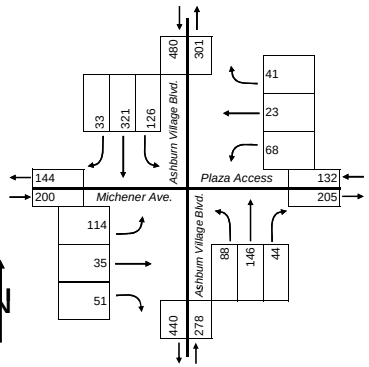
Overall AM PEAK HOUR FACTOR = **0.81**
Overall PM PEAK HOUR FACTOR = **0.92**

AM Period Intersection Volume: 2315
PM Period Intersection Volume: 4158

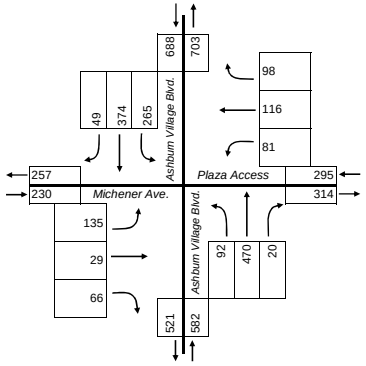
AM INTERSECTION PEAK VOLUMES



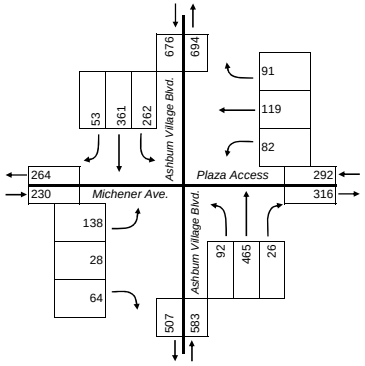
AM SYSTEM PEAK VOLUMES



PM INTERSECTION PEAK VOLUMES



PM SYSTEM PEAK VOLUMES



Note: Use northbound throughs and westbound rights from Red Rum Drive for these volumes

Project Name :	Temple Baptist Church
Project # :	0
Location	Loudoun County
Data Source:	Gorove/Slade Associates, Inc.

Intersection: Red Rum Drive at Ashburn Village Boulevard

AM PEAK																			
			Direction:	Southbound				Westbound				Northbound				Eastbound			
			Roadway:	**Ashburn Village Blvd.**				**Red Rum Dr.**				**Ashburn Village Blvd.**				**No Approach**			
			Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to	6:15 AM		0	18	1	0	3	2	0	0	0	17	0	0	0	0	0	0
6:15 AM	to	6:30 AM		0	27	2	0	0	0	1	0	1	25	0	0	0	0	0	0
6:30 AM	to	6:45 AM		0	41	1	0	2	0	0	0	1	21	0	0	0	0	0	0
6:45 AM	to	7:00 AM		0	41	7	0	0	0	2	0	0	19	0	0	0	0	0	0
7:00 AM	to	7:15 AM		0	58	4	0	0	0	0	0	2	41	0	0	0	0	0	0
7:15 AM	to	7:30 AM		0	63	4	0	0	0	1	0	4	39	0	0	0	0	0	0
7:30 AM	to	7:45 AM		0	74	8	0	2	0	0	0	1	47	0	0	0	0	0	0
7:45 AM	to	8:00 AM		0	79	11	0	6	0	3	0	3	54	0	0	0	0	0	0
8:00 AM	to	8:15 AM		0	87	15	0	3	0	2	0	2	70	0	0	0	0	0	0
8:15 AM	to	8:30 AM		0	111	14	0	5	0	2	0	2	84	0	0	0	0	0	0
8:30 AM	to	8:45 AM		0	75	11	0	5	0	2	0	4	60	3	0	0	0	0	0
8:45 AM	to	9:00 AM		0	89	13	0	8	0	0	0	1	62	1	0	0	0	0	0
PM PEAK																			
			Direction:	Southbound				Westbound				Northbound				Eastbound			
			Roadway:	**Ashburn Village Blvd.**				**Red Rum Dr.**				**Ashburn Village Blvd.**				**No Approach**			
			Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM	to	4:15 PM		0	88	9	0	14	2	5	0	3	68	0	0	0	2	0	0
4:15 PM	to	4:30 PM		0	70	6	0	4	0	4	0	6	81	0	0	0	0	0	0
4:30 PM	to	4:45 PM		0	82	6	0	11	0	6	0	3	85	0	0	0	0	0	0
4:45 PM	to	5:00 PM		0	90	14	0	8	0	11	0	15	95	0	0	0	0	0	0
5:00 PM	to	5:15 PM		0	110	11	0	27	0	10	0	4	93	0	0	0	0	0	0
5:15 PM	to	5:30 PM		0	101	7	0	11	0	4	0	6	87	0	0	0	0	0	0
5:30 PM	to	5:45 PM		0	87	13	0	28	0	9	0	6	103	0	0	0	0	0	0
5:45 PM	to	6:00 PM		0	86	11	0	10	0	6	0	6	104	0	0	0	0	0	0
6:00 PM	to	6:15 PM		0	116	11	0	19	0	9	0	4	108	0	0	0	0	0	0
6:15 PM	to	6:30 PM		0	99	6	0	19	0	12	0	6	93	0	0	0	0	0	0
6:30 PM	to	6:45 PM		0	96	1	0	8	0	7	0	1	93	0	0	0	0	0	0
6:45 PM	to	7:00 PM		0	97	5	0	2	0	0	0	4	88	0	0	0	0	0	0
PEAK HOURS																			
			Direction:	Southbound				Westbound				Northbound				Eastbound			
			Roadway:	**Ashburn Village Blvd.**				**Red Rum Dr.**				**Ashburn Village Blvd.**				**No Approach**			
			Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR																			
8:00 AM	to	9:00 AM		0	362	53	0	21	0	6	0	9	276	4	0	0	0	0	0
PM INTERSECTION PEAK HOUR																			
5:30 PM	to	6:30 PM		0	388	41	0	76	0	36	0	22	408	0	0	0	0	0	0
AM SYSTEM PEAK HOUR																			
7:45 AM	to	8:45 AM		0	352	51	0	19	0	9	0	11	268	3	0	0	0	0	0
PM SYSTEM PEAK HOUR																			
5:30 PM	to	6:30 PM		0	388	41	0	76	0	36	0	22	408	0	0	0	0	0	0

PEAK HOUR FACOTRS															
	Southbound				Westbound				Northbound				Eastbound			
	Ashburn Village Blvd.				**Red Rum Dr.**				**Ashburn Village Blvd.**				**No Approach**			
AM Peak Hour	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM PEAK HOUR	0.00	0.79	0.85	**0.81**	0.79	0.00	0.75	**0.78**	0.69	0.80	0.25	**0.82**	0.00	0.00	0.00	**#DIV/0!**
	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
PM PEAK HOUR	0.00	0.84	0.79	**0.84**	0.68	0.00	0.75	**0.76**	0.92	0.94	0.00	**0.96**	0.00	0.00	0.00	**#DIV/0!**

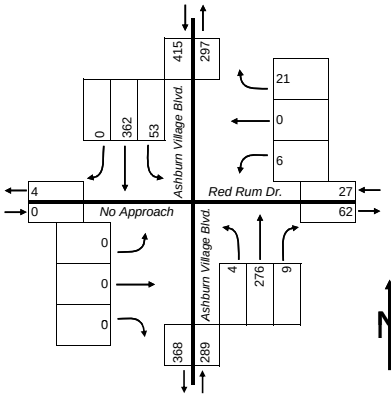
Overall AM PEAK HOUR FACTOR = **0.82** **Overall PM PEAK HOUR FACTOR** = **0.91**

AM Period Intersection Volume: 1467 **PM Period Intersection Volume:** 2632

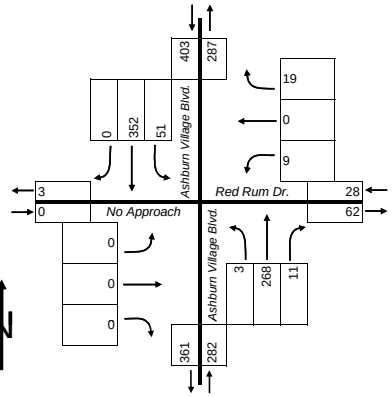
Date of Counts: Thursday, May 14, 2009

AM Weather Conditions: Clear **PM Weather Conditions:** Clear

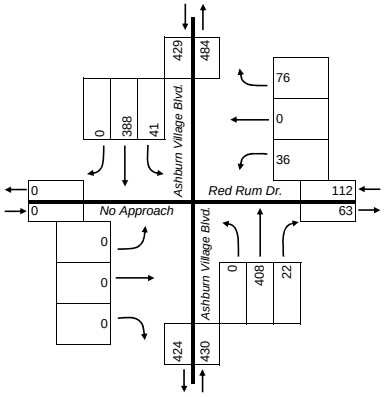
AM INTERSECTION PEAK VOLUMES



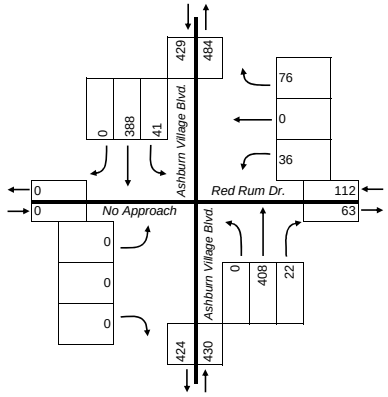
AM SYSTEM PEAK VOLUMES



PM INTERSECTION PEAK VOLUMES



PM SYSTEM PEAK VOLUMES



Project Name :	Temple Baptist Church
Project # :	0
Location	Loudoun County
Data Source:	Gorove/Slade Associates, Inc.

Intersection: Ashburn Village Boulevard at Waxpool Road

	Direction:	Southbound				Westbound				Northbound				Eastbound			
	Roadway:	Ashburn Village Blvd.				Waxpool Rd.				Ashburn Village Blvd.				Waxpool Rd.			
AM PEAK	Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM to 6:15 AM		0	20	1	0	0	7	3	0	11	5	0	0	1	47	10	0
6:15 AM to 6:30 AM		2	18	0	0	0	3	8	0	17	14	0	0	2	62	10	0
6:30 AM to 6:45 AM		3	35	2	0	0	6	2	1	21	10	2	0	1	81	6	0
6:45 AM to 7:00 AM		4	46	0	0	4	13	7	0	18	14	1	0	1	80	7	0
7:00 AM to 7:15 AM		4	50	4	0	4	12	6	0	24	30	2	0	6	69	4	0
7:15 AM to 7:30 AM		8	53	5	0	1	17	8	0	23	35	2	0	9	98	13	0
7:30 AM to 7:45 AM		6	59	3	0	0	22	6	0	24	39	4	0	11	90	10	0
7:45 AM to 8:00 AM		8	82	4	0	3	25	14	0	44	43	2	0	15	99	16	0
8:00 AM to 8:15 AM		7	80	6	0	4	27	7	0	37	62	1	0	14	93	15	0
8:15 AM to 8:30 AM		16	76	15	0	3	31	16	0	44	58	5	0	10	88	16	0
8:30 AM to 8:45 AM		13	74	13	0	2	29	14	0	35	44	2	0	6	92	13	0
8:45 AM to 9:00 AM		12	69	8	0	3	34	17	0	34	42	1	0	6	80	10	0
PM PEAK	Direction:	Southbound				Westbound				Northbound				Eastbound			
	Roadway:	Ashburn Village Blvd.				Waxpool Rd.				Ashburn Village Blvd.				Waxpool Rd.			
	Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM to 4:15 PM		12	69	13	0	6	63	40	0	18	48	6	0	1	46	14	0
4:15 PM to 4:30 PM		28	56	4	0	11	70	34	0	19	68	5	1	5	49	16	0
4:30 PM to 4:45 PM		32	60	5	0	7	73	37	0	21	67	4	0	7	38	19	0
4:45 PM to 5:00 PM		37	69	6	0	6	75	48	0	5	89	11	0	2	54	17	0
5:00 PM to 5:15 PM		47	76	4	0	16	92	51	0	16	80	10	0	3	48	13	0
5:15 PM to 5:30 PM		36	61	4	0	9	73	46	0	11	75	9	0	5	55	20	0
5:30 PM to 5:45 PM		47	72	2	0	11	68	46	0	8	78	25	0	7	40	31	1
5:45 PM to 6:00 PM		29	66	8	0	5	84	43	1	7	80	26	0	10	57	28	1
6:00 PM to 6:15 PM		64	69	3	0	8	85	41	0	7	83	32	0	6	51	16	0
6:15 PM to 6:30 PM		40	70	13	0	10	73	58	0	15	62	24	0	4	44	28	0
6:30 PM to 6:45 PM		54	78	6	0	5	86	59	0	11	59	10	0	4	44	18	0
6:45 PM to 7:00 PM		32	70	0	0	6	83	43	0	23	74	4	0	2	49	16	0
PEAK HOURS	Direction:	Southbound				Westbound				Northbound				Eastbound			
	Roadway:	Ashburn Village Blvd.				Waxpool Rd.				Ashburn Village Blvd.				Waxpool Rd.			
	Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR																	
7:45 AM to 8:45 AM		44	312	38	0	12	112	51	0	160	207	10	0	45	372	60	0
PM INTERSECTION PEAK HOUR																	
5:30 PM to 6:30 PM		180	277	26	0	34	310	188	1	37	303	107	0	27	192	103	2
AM SYSTEM PEAK HOUR																	
7:45 AM to 8:45 AM		44	312	38	0	12	112	51	0	160	207	10	0	45	372	60	0
PM SYSTEM PEAK HOUR																	
5:30 PM to 6:30 PM		180	277	26	0	34	310	188	1	37	303	107	0	27	192	103	2

PEAK HOUR FACOTRS	Southbound				Westbound				Northbound				Eastbound			
	Ashburn Village Blvd.				Waxpool Rd.				Ashburn Village Blvd.				Waxpool Rd.			
AM Peak Hour	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM PEAK HOUR	0.69	0.95	0.63	**0.92**	0.75	0.90	0.80	**0.88**	0.91	0.83	0.50	**0.88**	0.75	0.94	0.94	**0.92**
	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
PM PEAK HOUR	0.70	0.96	0.50	**0.89**	0.77	0.91	0.81	**0.94**	0.62	0.91	0.84	**0.92**	0.68	0.84	0.83	**0.85**

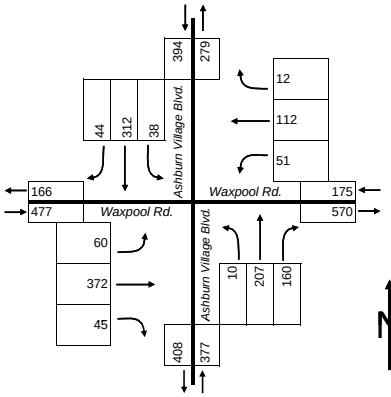
Overall AM PEAK HOUR FACTOR = **0.94** **Overall PM PEAK HOUR FACTOR** = **0.96**

AM Period Intersection Volume: 3105 **PM Period Intersection Volume:** 4970

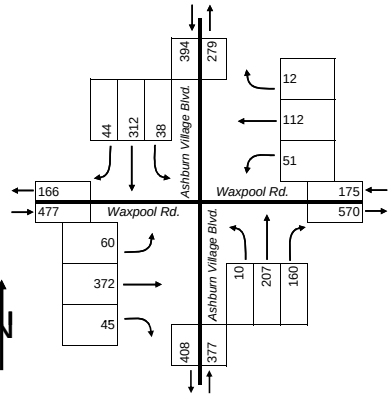
Date of Counts: Thursday, May 14, 2009

AM Weather Conditions: Clear **PM Weather Conditions:** Clear

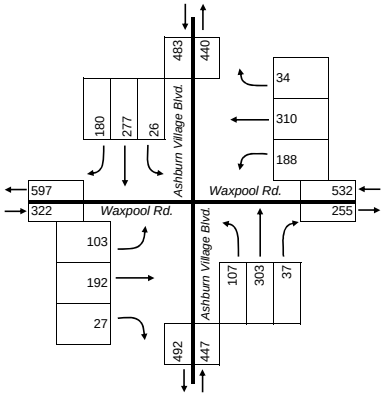
AM INTERSECTION PEAK VOLUMES



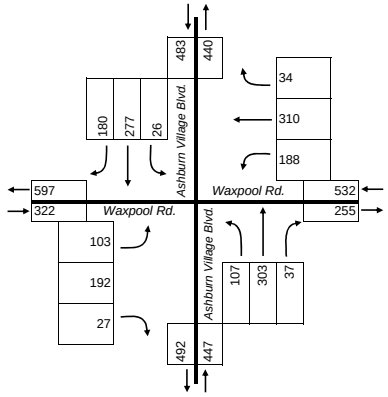
AM SYSTEM PEAK VOLUMES



PM INTERSECTION PEAK VOLUMES



PM SYSTEM PEAK VOLUMES



Project Name :	Temple Baptist Church
Project # :	0
Location	Loudoun County
Data Source:	Gorove/Slade Associates, Inc.

Intersection: Faulkner Parkway at Waxpool Road

AM PEAK																
Direction:		Southbound				Westbound				Northbound				Eastbound			
Roadway:		No Approach				Waxpool Road				Waxpool Road				Faulkner Pky.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to 6:15 AM																
6:15 AM	to 6:30 AM																
6:30 AM	to 6:45 AM																
6:45 AM	to 7:00 AM																
7:00 AM	to 7:15 AM																
7:15 AM	to 7:30 AM	0	0	0	0	0	6	18	0	73	0	5	0	7	43	0	0
7:30 AM	to 7:45 AM	0	0	0	0	0	5	21	0	108	0	3	1	12	45	0	0
7:45 AM	to 8:00 AM	0	0	0	1	0	12	34	0	72	0	4	0	17	45	0	0
8:00 AM	to 8:15 AM	0	0	0	0	0	15	21	0	102	0	8	0	12	29	0	0
8:15 AM	to 8:30 AM	0	0	0	0	0	7	29	0	81	0	6	0	12	36	0	0
8:30 AM	to 8:45 AM	0	0	0	0	0	19	18	0	92	0	9	0	11	35	0	0
8:45 AM	to 9:00 AM	0	0	0	0	0	20	32	0	78	0	12	0	10	25	0	0
PM PEAK																	
Direction:		Southbound				Westbound				Northbound				Eastbound			
Roadway:		No Approach				Waxpool Road				Waxpool Road				Faulkner Pky.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00 PM	to 4:15 PM																
4:15 PM	to 4:30 PM																
4:30 PM	to 4:45 PM																
4:45 PM	to 5:00 PM																
5:00 PM	to 5:15 PM	0	0	0	0	0	30	102	0	53	0	8	0	9	22	0	0
5:15 PM	to 5:30 PM	0	0	0	0	0	63	81	0	47	0	19	0	7	11	0	0
5:30 PM	to 5:45 PM	0	0	0	0	0	49	70	0	58	0	20	0	6	27	0	0
5:45 PM	to 6:00 PM	0	0	0	0	0	32	110	0	61	0	14	0	16	23	0	0
6:00 PM	to 6:15 PM	0	0	0	0	0	38	86	0	50	0	28	0	19	19	0	0
6:15 PM	to 6:30 PM	0	0	0	0	0	40	78	0	61	0	14	1	6	17	0	0
6:30 PM	to 6:45 PM	0	0	0	0	0	41	85	0	64	0	8	0	6	16	0	0
6:45 PM	to 7:00 PM	0	0	0	0	0	38	88	0	60	0	11	0	6	23	0	0
PEAK HOURS																	
Direction:		Southbound				Westbound				Northbound				Eastbound			
Roadway:		No Approach				Waxpool Road				Waxpool Road				Faulkner Pky.			
Movement:		Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR																	
7:30 AM	to 8:30 AM	0	0	0	1	0	39	105	0	363	0	21	1	53	155	0	0
PM INTERSECTION PEAK HOUR																	
5:15 PM	to 6:15 PM	0	0	0	0	0	182	347	0	216	0	81	0	48	80	0	0
AM SYSTEM PEAK HOUR																	
7:45 AM	to 8:45 AM	0	0	0	1	0	53	102	0	347	0	27	0	52	145	0	0
PM SYSTEM PEAK HOUR																	
5:30 PM	to 6:30 PM	0	0	0	0	0	159	344	0	230	0	76	1	47	86	0	0

PEAK HOUR FACOTRS	Southbound				Westbound				Northbound				Eastbound			
	No Approach				Waxpool Road				Waxpool Road				Faulkner Pky.			
AM Peak Hour	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
AM PEAK HOUR	0.00	0.00	0.00	**#DIV/0!**	0.00	0.70	0.75	**0.84**	0.85	0.00	0.75	**0.85**	0.76	0.81	0.00	**0.79**
	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
PM PEAK HOUR	0.00	0.00	0.00	**#DIV/0!**	0.00	0.81	0.78	**0.89**	0.94	0.00	0.68	**0.98**	0.62	0.80	0.00	**0.85**

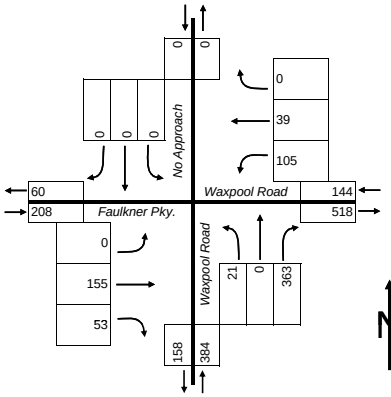
Overall AM PEAK HOUR FACTOR = **0.97** **Overall PM PEAK HOUR FACTOR** = **0.92**

AM Period Intersection Volume: 1249 **PM Period Intersection Volume:** 1840

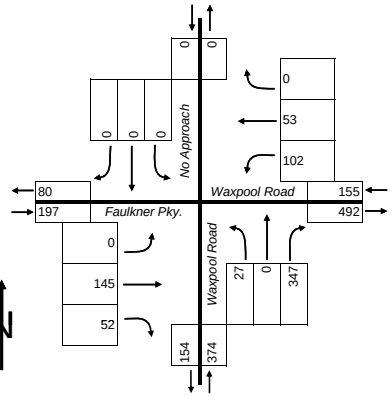
Date of Counts: Tuesday, June 02, 2009

AM Weather Conditions: Cloudy **PM Weather Conditions:** Cloudy

AM INTERSECTION PEAK VOLUMES

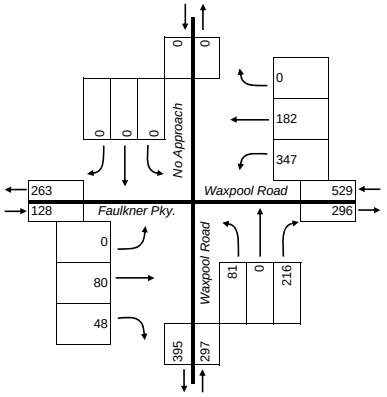


AM SYSTEM PEAK VOLUMES

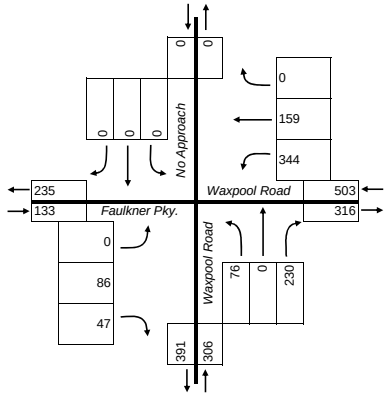


N

PM INTERSECTION PEAK VOLUMES



PM SYSTEM PEAK VOLUMES



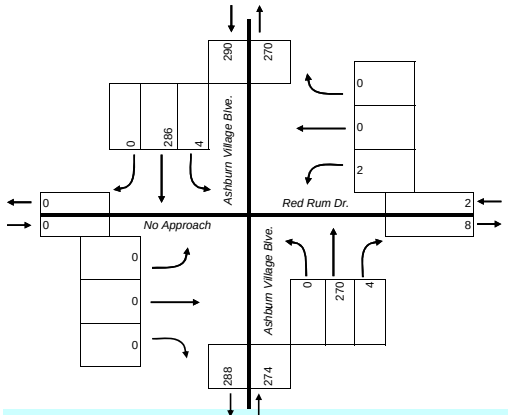
Turning Movement Count Summary

DATE:

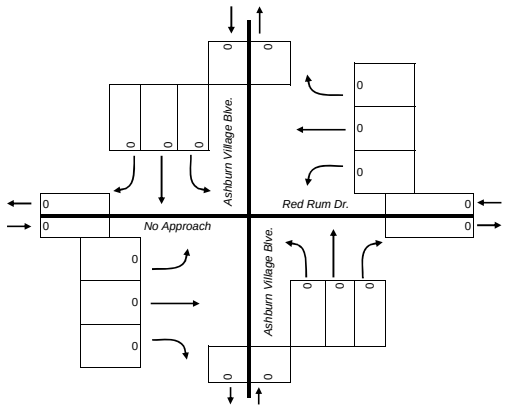
Intersection:	Red Rum Drive at Ashburn Village Boulevard																	
AM PEAK																		
Direction:	Southbound				Westbound				Northbound				Eastbound					
Roadway:	**Ashburn Village Blve.**				**Red Rum Dr.**				**Ashburn Village Blve.**				**No Approach**					
Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	15 Min	Hourly
8:00 AM to 8:15 AM	0	32	1	0	4	0	2	0	0	23	0	0	0	0	0	0	62	256
8:15 AM to 8:30 AM	0	27	2	0	3	0	1	0	2	30	0	0	0	0	0	0	65	261
8:30 AM to 8:45 AM	0	35	0	0	1	0	0	0	2	25	0	0	0	0	0	0	63	282
8:45 AM to 9:00 AM	0	29	0	0	0	0	0	0	0	37	0	0	0	0	0	0	66	303
9:00 AM to 9:15 AM	0	38	0	0	0	0	1	0	0	28	0	0	0	0	0	0	67	364
9:15 AM to 9:30 AM	0	45	2	0	0	0	0	0	0	39	0	0	0	0	0	0	86	401
9:30 AM to 9:45 AM	0	46	1	0	0	0	0	0	0	37	0	0	0	0	0	0	84	445
9:45 AM to 10:00 AM	0	64	0	0	0	0	0	0	0	63	0	0	0	0	0	0	127	515
10:00 AM to 10:15 AM	0	54	0	1	0	0	0	0	1	48	0	0	0	0	0	0	104	547
10:15 AM to 10:30 AM	0	64	0	0	2	0	1	0	2	61	0	0	0	0	0	0	130	572
10:30 AM to 10:45 AM	0	84	0	0	0	0	1	0	0	69	0	0	0	0	0	0	154	583
10:45 AM to 11:00 AM	0	70	2	0	3	0	0	0	1	83	0	0	0	0	0	0	159	590
11:00 AM to 11:15 AM	0	68	2	0	1	0	0	0	1	57	0	0	0	0	0	0	129	612
11:15 AM to 11:30 AM	0	83	0	0	0	0	4	0	0	54	0	0	0	0	0	0	141	
11:30 AM to 11:45 AM	0	79	0	0	0	0	0	0	0	82	0	0	0	0	0	0	161	
11:45 AM to 12:00 PM	0	98	1	0	3	0	0	0	0	79	0	0	0	0	0	0	181	
PM PEAK																		
Direction:	Southbound				Westbound				Northbound				Eastbound					
Roadway:	**Ashburn Village Blve.**				**Red Rum Dr.**				**Ashburn Village Blve.**				**No Approach**					
Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	15 Min	Hourly
3:00 PM to 3:15 PM																	0	0
3:15 PM to 3:30 PM																	0	0
3:30 PM to 3:45 PM																	0	0
3:45 PM to 4:00 PM																	0	0
4:00 PM to 4:15 PM																	0	0
4:15 PM to 4:30 PM																	0	0
4:30 PM to 4:45 PM																	0	0
4:45 PM to 5:00 PM																	0	0
5:00 PM to 5:15 PM																	0	0
5:15 PM to 5:30 PM																	0	0
5:30 PM to 5:45 PM																	0	0
5:45 PM to 6:00 PM																	0	0
6:00 PM to 6:15 PM																	0	0
6:15 PM to 6:30 PM																	0	
6:30 PM to 6:45 PM																	0	
6:45 PM to 7:00 PM																	0	

SYSTEM PEAK	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
7:15 - 8:15 AM AM	**0**	**286**	**4**	**0**	**6**	**0**	**2**	**0**	**4**	**270**	**0**	**0**	**0**	**0**	**0**	**0**
4:00 - 5:00 PM PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

AM SYSTEM PEAK



PM SYSTEM PEAK



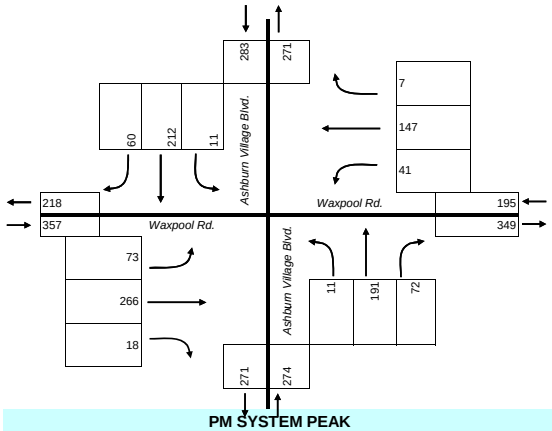
Turning Movement Count Summary

DATE:

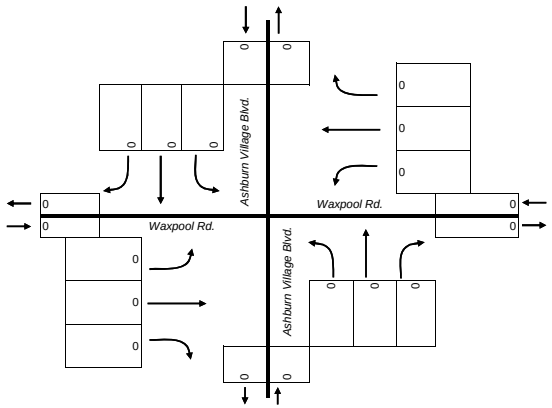
Intersection:	Ashburn Villaage Boulevard at Waxpool Road																	
AM PEAK																		
Direction:	Southbound				Westbound				Northbound				Eastbound					
Roadway:	**Ashburn Village Blvd.**				**Waxpool Rd.**				**Ashburn Village Blvd.**				**Waxpool Rd.**					
Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	15 Min	Hourly
8:00 AM to 8:15 AM	5	31	2	0	1	13	3	0	2	12	1	0	1	27	10	0	108	470
8:15 AM to 8:30 AM	7	17	0	0	0	8	0	0	2	17	0	0	2	28	14	0	95	504
8:30 AM to 8:45 AM	11	23	2	0	2	13	2	0	10	13	0	0	3	34	6	0	119	583
8:45 AM to 9:00 AM	9	19	1	0	2	21	8	0	14	30	3	0	0	30	11	0	148	634
9:00 AM to 9:15 AM	12	26	0	0	0	18	5	0	4	24	2	0	1	40	10	0	142	722
9:15 AM to 9:30 AM	6	40	1	0	1	28	4	0	10	28	0	0	1	47	8	0	174	841
9:30 AM to 9:45 AM	7	39	1	0	1	18	7	1	13	27	1	1	1	47	6	0	170	928
9:45 AM to 10:00 AM	9	52	1	0	1	25	11	0	15	39	4	0	2	64	13	0	236	1047
10:00 AM to 10:15 AM	13	38	1	0	4	34	9	0	17	44	2	0	6	78	15	0	261	1110
10:15 AM to 10:30 AM	20	44	3	0	2	41	7	0	12	42	3	0	5	72	10	0	261	1141
10:30 AM to 10:45 AM	14	60	3	0	4	47	10	0	16	48	2	0	6	60	19	0	289	1189
10:45 AM to 11:00 AM	12	60	2	0	2	32	15	0	22	50	4	0	4	69	27	0	299	1206
11:00 AM to 11:15 AM	14	48	3	0	2	56	9	0	22	51	2	0	3	65	17	0	292	1253
11:15 AM to 11:30 AM	19	65	1	0	2	48	9	0	21	40	0	0	6	82	16	0	309	
11:30 AM to 11:45 AM	17	66	2	0	2	45	10	0	19	55	6	0	2	60	22	0	306	
11:45 AM to 12:00 PM	14	64	1	0	8	53	13	0	22	60	3	0	11	77	20	0	346	
PM PEAK																		
Direction:	Southbound				Westbound				Northbound				Eastbound					
Roadway:	**Ashburn Village Blvd.**				**Waxpool Rd.**				**Ashburn Village Blvd.**				**Waxpool Rd.**					
Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	15 Min	Hourly
3:00 PM to 3:15 PM																	0	0
3:15 PM to 3:30 PM																	0	0
3:30 PM to 3:45 PM																	0	0
3:45 PM to 4:00 PM																	0	0
4:00 PM to 4:15 PM																	0	0
4:15 PM to 4:30 PM																	0	0
4:30 PM to 4:45 PM																	0	0
4:45 PM to 5:00 PM																	0	0
5:00 PM to 5:15 PM																	0	0
5:15 PM to 5:30 PM																	0	0
5:30 PM to 5:45 PM																	0	0
5:45 PM to 6:00 PM																	0	0
6:00 PM to 6:15 PM																	0	0
6:15 PM to 6:30 PM																	0	
6:30 PM to 6:45 PM																	0	
6:45 PM to 7:00 PM																	0	

SYSTEM PEAK	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
7:15 - 8:15 AM AM	**60**	**212**	**11**	**0**	**10**	**176**	**41**	**0**	**72**	**191**	**11**	**0**	**18**	**266**	**73**	**0**
4:00 - 5:00 PM PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

AM SYSTEM PEAK



PM SYSTEM PEAK



APPENDIX B

LEVEL OF SERVICE DEFINITIONS

APPENDIX B: LEVEL OF SERVICE DEFINITIONS

All capacity analyses are based on the procedures specified by the Transportation Research Board, Special Report 209: Highway Capacity Manual (HCM), 2000. Levels of service (LOS) range from A to F. A brief description of each level of service for signalized and unsignalized intersections is provided below.

Signalized Intersections: Level of service is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay associated with each directional movement. The levels of service for signalized intersections are defined below:

- **Level of Service A** describes operations with very low average delay per vehicle, i.e., less than 10.0 seconds. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop. Short signal cycle lengths may also contribute to low delay.
- **Level of Service B** describes operations with average delay in the range of 10.1 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
- **Level of Service C** describes operations with delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level although many still pass through the intersection without stopping. This is generally considered the lower end of the range of the acceptable level of service in rural areas.
- **Level of Service D** describes operations with delay in the range of 35.1 to 55.0 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and/or high traffic volumes as compared to the roadway capacity. Many vehicles are required to stop and the number of vehicles that do not have to stop declines. Individual signal cycle failures, where all waiting vehicles do not clear the intersection during a single green time, are noticeable. This is generally considered the lower end of the range of the acceptable level of service in urban areas.
- **Level of Service E** describes operations with delay in the range of 55.1 to 80.0 seconds per vehicle. These higher delay values generally indicate poor progression, long cycle lengths, and high traffic volumes. Individual cycle failures are frequent occurrences. LOS E has been set as the limit of acceptable conditions.
- **Level of Service F** describes operations with average delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation, i.e., when traffic arrives at a flow rate that exceeds the capacity of the

intersection. It may also occur at high volumes with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such delays.

Unsignalized Intersections: At an unsignalized intersection, the major street through traffic and right turns are assumed to operate unimpeded and therefore receive no level of service rating. The level of service for the minor street and the major street left turn traffic is dependent on the volume and capacity of the available lanes, and, the number and frequency of acceptable gaps in the major street traffic to make a conflicting turn. The level of service grade is provided for each conflicting movement at an unsignalized intersection and is based on the total average delay experienced by each vehicle. The delay includes the time it takes a vehicle to move from the back of a queue through the intersection.

The unsignalized intersection level of service analysis does not account for variations in driver behavior or the effects of nearby traffic signals. Therefore, the results from this analysis usually indicates worse levels of service than may be experienced in the field. The unsignalized intersection level of service descriptions are provided below:

- **Level of Service A.** Describes operations where there is very little to no conflicting traffic for a minor side street movement, i.e., an average total delay of less than 10.0 seconds per vehicle.
- **Level of Service B.** Describes operations with average total delay in the range of 10.1 to 15.0 seconds per vehicle.
- **Level of Service C.** Describes operations with average total delay in the range of 15.1 to 25.0 second per vehicle.
- **Level of Service D.** Describes operations with average total delay in the range of 25.1 to 35.0 seconds per vehicle.
- **Level of Service E.** Describes operations with average total delay in the range of 35.1 to 50.0 seconds per vehicle.
- **Level of Service F.** Describes operations with average total delay of 50 seconds per vehicle. LOS F exists when there are insufficient gaps of suitable size to allow a side street demand to cross safely through or enter a major street traffic stream. This level of service is generally evident from extremely long total delays experienced by side street traffic and by queuing on the minor approaches. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal driver behavior.

APPENDIX C

TRAFFIC IMPACT ANALYSIS SCOPING LETTER

PRE-SCOPE OF WORK MEETING FORM

Information on the Project
Traffic Impact Analysis Base Assumptions

The applicant is responsible for entering the relevant information and submitting the form to VDOT and the locality no less than three (3) business days prior to the meeting. If a form is not received by this deadline, the scope of work meeting may be postponed.

Contact Information	
Consultant Name: Tele: E-mail:	Chris Tacinelli, Gorove/Slade Associates, Inc. 703-787-9595 chris.tacinelli @goroveslade.com
Developer/Owner Name: Tele: E-mail:	Dr. David L. Pittman/Larry Wright Temple Baptist Church

Project Information				
Project Name:	Temple Baptist Church		Locality/County:	Loudoun County, VA
Project Location: (Attach regional and site specific location map)	The project is located on the west side of Ashburn Village Boulevard, just north of Waxpool Road.			
Submission Type	Comp Plan ☐	Rezoning ★	Site Plan ☐	Subd Plat ☐
Project Description: (Including details on the land use, acreage, phasing, access location, etc. Attach additional sheet if necessary)	The project is a rezoning application to develop a currently undeveloped parcel into a church site of approximately 30,000 SF (1300 seats), consisting of a 500 student (K-12) private school. The property is currently zoned PD-CC (CC). Access points serving the proposed development will be along Ashburn Village Boulevard and Waxpool Road.			
Proposed Use: (Check all that apply; attach additional pages as necessary)	Residential ☐	Commercial ☐	Mixed Use ☐	Other ★
	Office Use(s): SF ITE Code: **Services Use(s)**: SF ITE Code:		**Retail Use(s)**: SF ITE Code: **Other Use(s)**: *Church* 29,700 SF, 1300 Seats ITE Code: 560 *Private School (K-12)* 500 Students ITE Code: 536	
Total Peak Hour Trip Projection:	Less than 100 ☐	100-499 ☐	500-999 ★	1,000 or more ☐

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Traffic Impact Analysis Assumptions			
Study Period	Existing Year: 2009	Build-out Year: 2012	Design Year: N/A
Study Area Boundaries (Attach map)	North: Farmwell Road	South: Waxpool Road	
	East: Red Rum Drive	West:	
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	• Proposed traffic signal: Ashburn Village Blvd and Waxpool Rd • Waxpool Rd improvements: 4-lane divided road – from Faulkner Parkway to Ashburn Village Blvd.		
Consistency With Comprehensive Plan (Land use, transportation plan)	Yes		
Available Traffic Data (Historical, forecasts)	VDOT AADT Data, Existing Traffic Counts (2009), Historical counts		
Trip Distribution (%) (Attach sketch)	Road Name: Ashburn Village Blvd (N) 25%	Road Name: Waxpool Rd (E) 10% Road Name: Farmwell Rd (E) 5%	
	Road Name: Ashburn Village Blvd (S) 15% ***Inbound/Outbound breakdown will be shown in the traffic study**	Road Name: Waxpool Rd (W) 20% Road Name: Michener Dr (W) 10% Road Name: Faulkner Pkwy (W) 10% Road Name: Farmwell Rd (W) 5%	
Annual Vehicle Trip Growth Rate:	2%	Peak Period for Study (check all that apply)	★AM ★PM ★Sunday
		Peak Hour of Generator	Varies depending on land use
Study Intersections and/or Road Segments (Attach additional sheets as necessary) **PLEASE REFER TO ATTACHED FIGURE 2**	1. Ashburn Village Blvd and Farmwell Rd (AM/PM)	6. Future site driveways (AM/PM/Sun)	
	2. Ashburn Village Blvd and Michener Dr/Pipeline Plaza (AM/PM)	7.	
	3. Ashburn Village Blvd and Red Rum Dr (AM/PM/Sun)	8.	
	4. Ashburn Village Blvd and Waxpool Rd (AM/PM/Sun)	9.	
	5. Ashburn Village Blvd Faulkner Pkwy (AM/PM)	10.	
Trip Adjustment Factors	Internal allowance: ☐ Yes ★ No Reduction:	Pass-by allowance: ☐ Yes ★ No Reduction:	
	TDM Reduction: ☐ Yes ★ No		
Software Methodology	★ Synchro 7.0 ☐ HCS (v.2000/+) ☐ aaSIDRA ☐ CORSIM ☐ Other		

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length)	1. Proposed traffic signal: Ashburn Village Blvd and Waxpool Rd 2. Existing traffic signal: Ashburn Village Blvd and Farmwell Rd 3. Existing traffic signal: Ashburn Village Blvd and Michener Dr/Pipeline Plaza
Improvement(s) Assumed or to be Considered	1. Proposed traffic signal: Ashburn Village Blvd and Waxpool Rd 2. Waxpool Rd improvements: 4-lane divided road – from Faulkner Parkway to Ashburn Village Blvd.
Background Traffic Studies Considered	- Kincora - Commonwealth Center - Loudoun Station - Morley Corner
Plan Submission	☐ Master Development Plan (MDP) ☐ Generalized Development Plan (GDP) ☐ Preliminary/Sketch Plan ★ Other Plan type (Final Site, Subd. Plan)
Additional Issues to be addressed	☐ Queuing analysis ☐ Actuation/Coordination ☐ Weaving analysis ☐ Merge Analysis ☐ Bike/Ped Accommodations ★ Intersection(s) ☐ TDM Measures ☐ Other _____

NOTES on ASSUMPTIONS:

1. Synchro files will be obtained from VDOT
2. Existing factors, such as peak hour factors, will be used for existing scenarios. The default peak hour factor of 0.92 will be used for all future scenarios.
3. Check Access Management guidelines
4. Provide info on hazardous locations
5. Provide summary of proffered improvements

AGREED: _____ DATE: 05/27/2009
Applicant or Consultant

PRINT NAME: Chris Tacinelli, Gorove/Slade Associates, Inc.
Applicant or Consultant

SIGNED: _____ DATE: 05/29/2009
VDOT Representative

PRINT NAME: Alex Faghri
VDOT Representative

SIGNED: _____ DATE: _____
Local Government Representative

PRINT NAME: _____
Local Government Representative

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Inherent Growth Rate (obtained from VDOT traffic data)

Roadway Segment	From	To	ADT			Comparison		
			2005	2006	2007	2005-2006	2006-2007	2003-2007
Waxpool Rd	Shellhorn Road	Farmwell Road	9,100	9,000	10,000	-1%	11%	5%
Farmwell Road	Ashburn Road	Ashburn Village Blvd	25,000	24,000	28,000	-4%	17%	6%

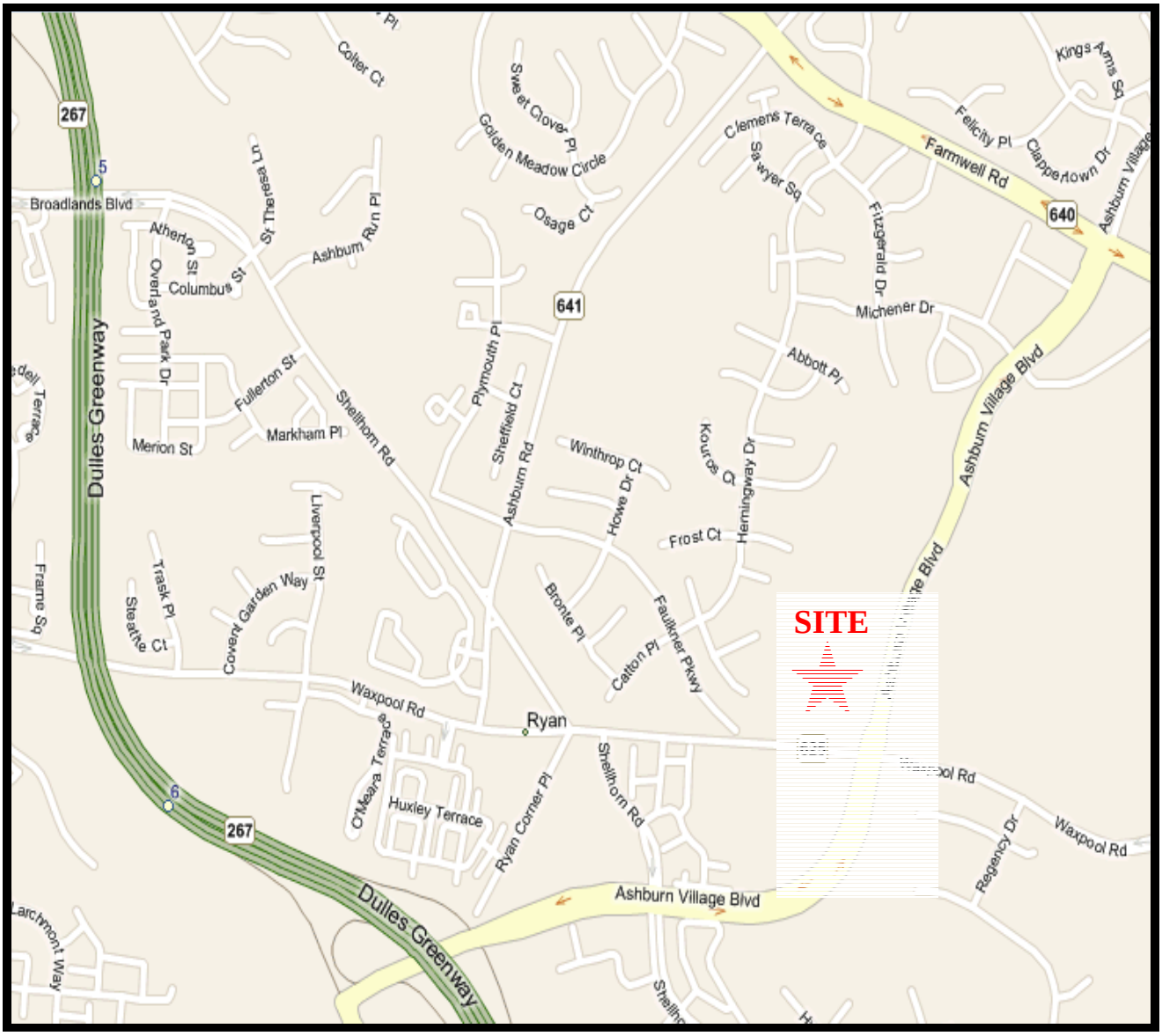
Trip Generation: Peak Hour of Generator

Land Use	ITE Code	Size		------ Weekday ------							Sunday			
				AM Peak Hour			PM Peak Hour			Daily	Midday Peak Hour			Daily
				In	Out	Total	In	Out	Total	Total	In	Out	Total	Total
Church	560	29.7	kSF	15	11	26	16	12	28	271				
Church (Sunday)		1,300	Seats								405	388	793	2,405
Private School (K-12)	536	500	Students	248	157	405	124	171	295	1,240				
Total				**263**	**168**	**431**	**140**	**183**	**323**	**1,511**	**405**	**388**	**793**	**2,405**

Trip Generation: Adjacent Street Traffic

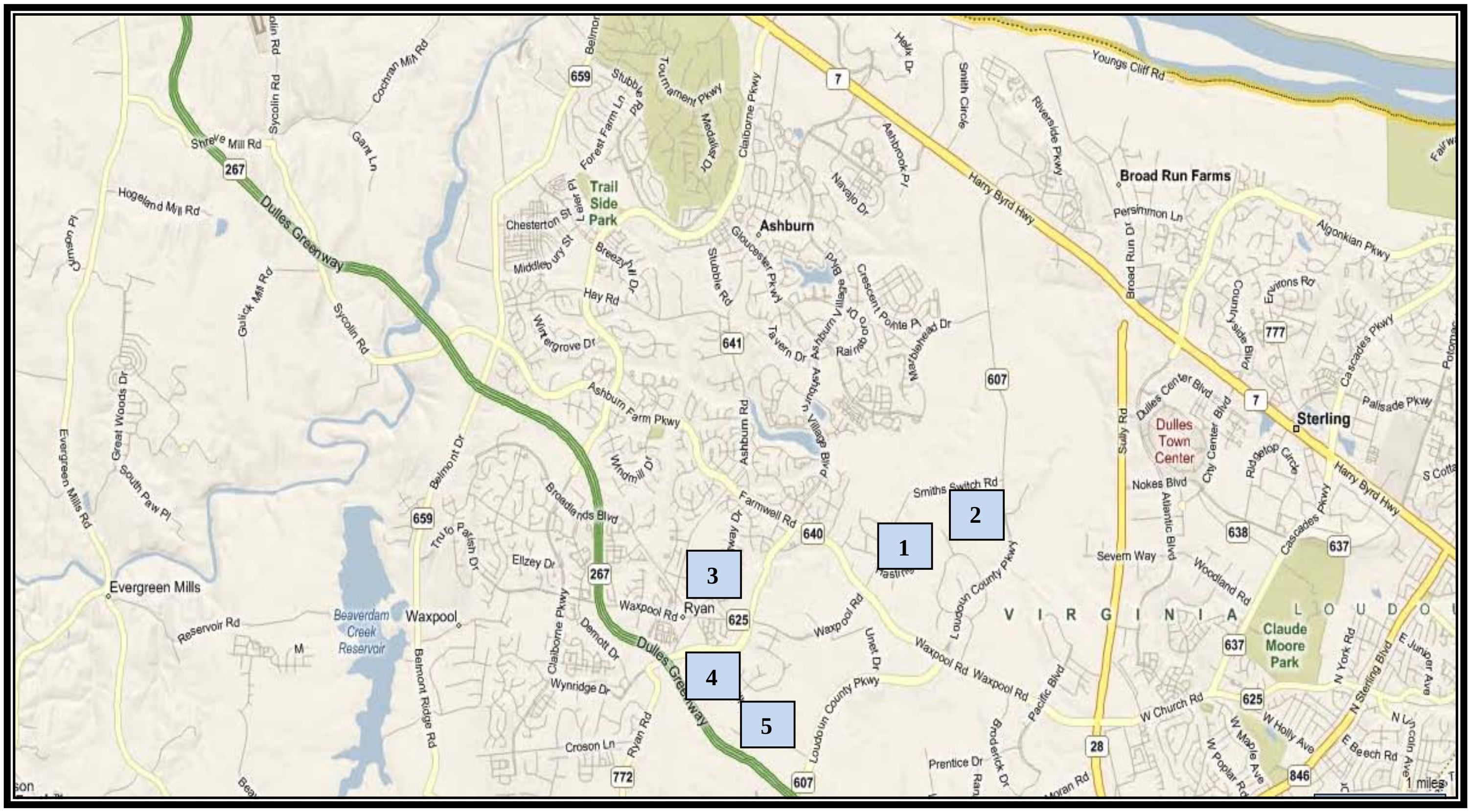
Land Use	ITE Code	Size		------ Weekday ------							Sunday			
				AM Peak Hour			PM Peak Hour			Daily	Midday Peak Hour			Daily
				In	Out	Total	In	Out	Total	Total	In	Out	Total	Total
Church	560	29.7	kSF	11	6	17	9	8	17	271				
Church (Sunday)		1,300	Seats								405	388	793	2,405
Private School (K-12)	536	500	Students	248	157	405	37	48	85	1,240				
Total				**259**	**163**	**422**	**46**	**56**	**102**	**1,511**	**405**	**388**	**793**	**2,405**

Figure 1: Area Map



It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

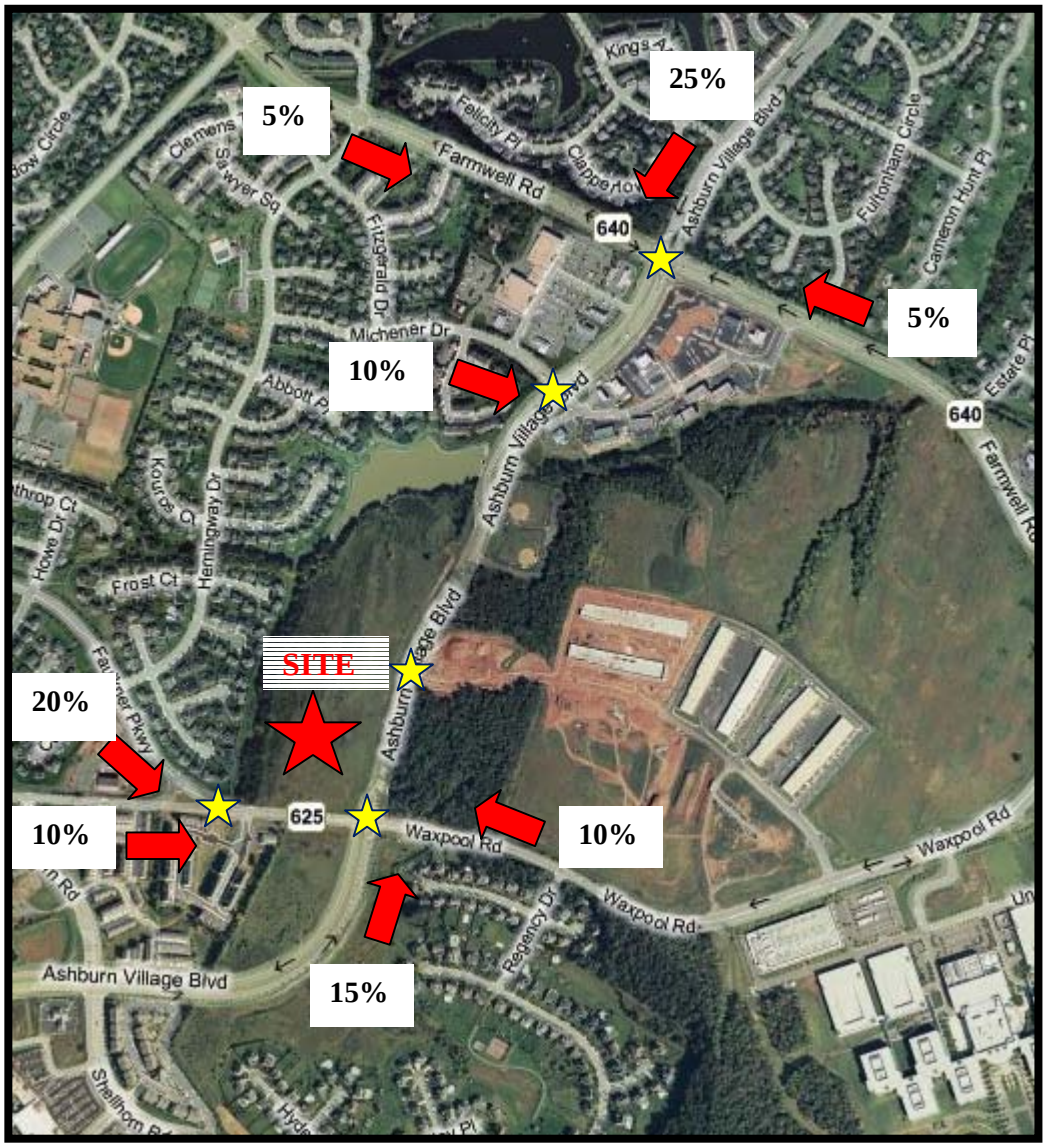
Figure 2: Location of Approved Background Developments



1. Ashburn Corporate Center
2. Beaumeade
3. Morley Corner (residential)
4. Ryan Park Center
5. Loudoun Station

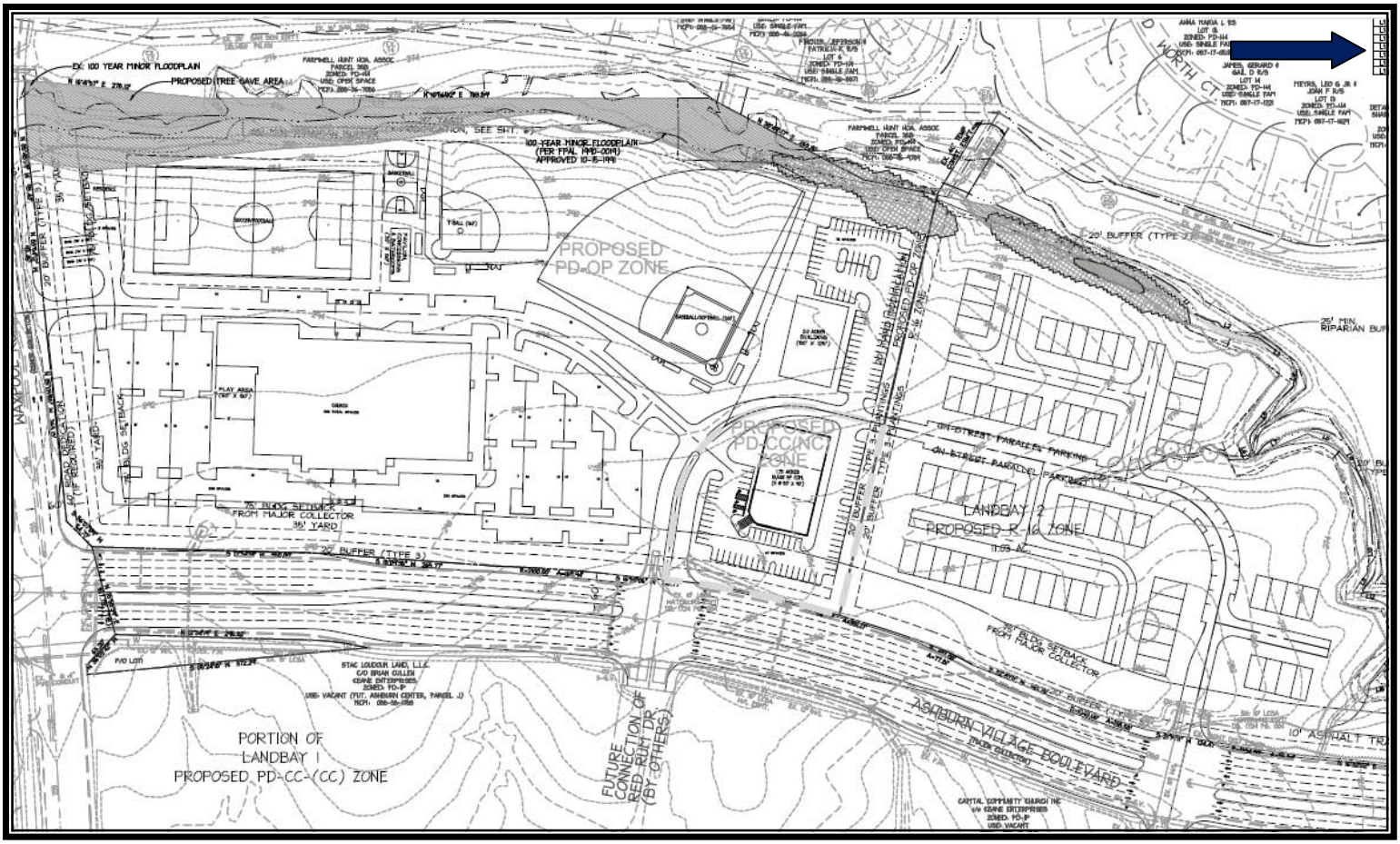
It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Figure 3: Study Intersections and Direction of Approach



It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Figure 3: Preliminary Site Plan



It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

F.S.M. Traffic Study Guidelines (12/07) **Loudoun County Virginia**
Traffic Study Scoping Meeting Notes **Office of Transportation Services**
Page 1 of 4

1,300 Seats / 500 Students K-12

Application Name: Temple Baptist Church **Date:** 5/27/09
Application Type: Rezoning
Attendees: Chris Tacinelli - Gorove Slade, George Phillips Loudoun County
Tushar Amar - Gorove Slade, Alex Faghri, VDOT

(1) **Study Area**: Roadways internal or adjacent to the development site shall be included in the traffic study. The study area should be defined at the scoping meeting and as a guideline should include other external roads to the extent that the project's generated traffic is anticipated to exceed 10 percent of the road's current/existing traffic volumes (at the time of application).

Comments: Will provide Ashburn Area, Ashburn Village Boulevard / Waxpool Road

(2) **Traffic Count Locations**: Traffic counts are required on the adjacent roads, the adjacent intersections beyond the project's frontage on adjacent roads in the study area. The AM/PM peak period traffic counts shall not be more than twelve (12) months old at the time of the application submission. Twenty-four (24) hour weekday traffic counts are also required for roadway segments.

Include turn lane warrants and signal warrants for unsignalized intersections

Comments: Will provide / include all site entrances
1) Ashburn Rd / Waxpool Road
2) Ashburn Village Boulevard / Red Rum Drive
3) Ashburn Village Blvd / Michener Drive / Pipeline Plaza
4) Ashburn Village Blvd / Farmwell Road
5) Faulkner Pkwy / Waxpool Rd
Also, include a Sunday morning peak hour Analysis for site entrance and Ashburn Village Blvd / Waxpool

Peak Hour

(3) **Trip Generation**: As a general guide to vehicle trip generation, the latest edition of the Institute of Transportation Engineer's (I.T.E.). Trip Generation Report shall be used. These rates may be supplemented by additional information provided by the County. If the applicant chooses to use different rates, they shall be documented and agreed to at the scoping meeting prior to their use in the traffic analyses. Primary trip reductions associated with passby trips and methodologies for trip reductions associated with passby trips shall be discussed and agreed upon at the scoping meeting.

Comments: Will provide. Use ITE 8th Edition Rates
Use Church Rates (560)
Private School (Rate 536)
Provide trip generation comparison with existing zoned residential uses as well.

(4) **Traffic Volume Projections**: The traffic study shall include an agreed upon build out year and provide existing and projected traffic volumes, with and without the subject project, for Average Daily Traffic (ADT), as well as AM and PM peak hours. The peak hour of the project/individual land use(s) (as given in the ITE Trip Generation Report) should be added to the corresponding AM/PM existing peak hour of the adjacent roadway traffic volumes (to show the worst case scenario), if the peak hour of the project/individual land use(s) for the generator is greater than the peak hour of the adjacent roadway (per ITE Trip Generation Report). The existing peak hour of traffic on the roads adjacent to the subject project site shall be identified. These traffic volumes shall be provided at roadway intersections and commercial or private accessways/entrances.

Comments: Will provide - See Comment #4
2011 Buildout Year? 2012 would be more realistic
Phasing? Needs to be confirmed
Signal assumed at Waxpool/Ashburn Village Blvd and road improvements with the county project

(5) **LOS Analysis**: Level of Service (LOS) calculations for existing and projected conditions, with and without the subject project, for highway segments, intersection legs, and entrances shall be provided. Calculations shall be in accordance with the Highway Capacity Manual (HCM) and/or the Highway Capacity Software (HCS), or as may be agreed at the scoping meeting. Traffic volumes and LOS information shall be provided for each phase of development, to include conditions at date of project completion. ~~Projections shall also be made for date of completion plus ten (10) years or to an agreed upon forecast year~~

Comments: Will provide. No building/buildout plus 10

(6) **Minimum Roadway/Intersection LOS Standards**: Recommendations for phased improvements to the road network links in order to maintain an acceptable LOS (minimum LOS "D") shall be provided. For each phase up to and including buildout, a minimum approach and overall LOS "D" at intersections shall apply.

Comments: Will provide for any movement below LOS D

(7) **Background Traffic Assumptions**: Assumptions which determine projected background traffic, including through traffic growth rate to be applied on roadway links, shall be confirmed at the scoping meeting. The sources for determining future traffic projections will include one or more of the following:

Include proffer information as background in the report

- The Loudoun County Growth Summary or similar documents from Loudoun County.
- The Loudoun County transportation model which incorporates COG's Cooperative Forecasts for Loudoun County.
- Approved developments in the vicinity of the proposed development.

Specific other approved development names and respective development square footage or residential units in the study shall be provided.

Comments: Will provide. Apply Loudoun County Growth Summary for this area. Include Ashburn Corporate Center, ~~Broadlands~~, ~~Loudoun Station~~, Ashburn Village, ~~Regional Center~~, ~~Ryan Park~~, ~~Loudoun Station~~, Monroe Commons, Ryan Park Center, Loudoun Station. Plus 220 housing to area roads. Assume signal / improvements to Waxpool as part of the county project

(8) **Traffic/Trip Distribution**: Directional trip distribution information shall be provided for project entrances and collector and arterial intersections within the study area for the phases and categories (e.g., residential, office, retail, industrial and institutional) of development.

Comments: Will provide. Base on existing counts and previous studies

(9) **LOS Calculations Assumptions**: Traffic counts and LOS worksheets and projected traffic volume LOS analyses, using agreed upon analysis techniques, including existing AM/PM peak hour signal timing, shall be included as a part of the traffic study.

Comments: Will provide (Synchro 7). Disc (Provide) Include the report text and trans. Include traffic counts

(10) **Mode Choice**: Modal split information shall be provided for the phases of the analysis, with sources of information identified (e.g., COG model).

Comments: N. A. Chase

(11) **Safety Locations**: Road safety hazards, as identified by the ISTEA set-aside funding criteria and/or as identified by the County at the scoping meeting, within the study area shall be analyzed for all roadway links and intersections in the traffic study.

Comments: Will provide either way for all road segments in the study

(12) **Traffic Mitigation Measures**: If trip reduction factors are used in the study, measures necessary to implement the reduction must be specified, with supporting documentation.

Comments: N.A. (None)

(13) **Bicycle & Pedestrian Accommodations**: When bicycle and pedestrian accommodations are used to reduce anticipated traffic volumes, a description of the physical and functional characteristics of the proposed bicycle and pedestrian accommodations shall be provided. If such separate bicycle accommodations (e.g., striped lanes or multi-purpose trails) are anticipated, they shall also be identified. A description of the functional characteristics shall be provided to identify the transportation options that these accommodations provide (e.g., pedestrian access to retail center, safe bicycle route to elementary school, inter-parcel connections to adjacent neighborhoods, access to W&OD trail, etc.)

Comments: N.A. (None)

Staff Signature: Dennis R Phillips 5/27/09

Traffic Consultant Signature: (TUSHAR ALOAR) 05/27/09

lmm/
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APPENDIX D

INTERSECTION CAPACITY ANALYSIS RESULTS – EXISTING CONDITION

HCM Signalized Intersection Capacity Analysis
1: Farmwell Rd & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	1048	145	89	349	152	53	184	118	516	311	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	3433	1863	1583
Flt Permitted	0.47	1.00	1.00	0.14	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	883	3539	1583	266	3539	1583	1770	3539	1583	3433	1863	1583
Peak-hour factor, PHF	0.91	0.89	0.79	0.86	0.91	0.79	0.66	0.87	0.89	0.88	0.86	0.64
Adj. Flow (vph)	141	1178	184	103	384	192	80	211	133	586	362	384
RTOR Reduction (vph)	0	0	76	0	0	90	0	0	119	0	0	276
Lane Group Flow (vph)	141	1178	108	103	384	102	80	211	14	586	362	108
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8			4
Actuated Green, G (s)	109.9	98.9	98.9	106.5	97.2	97.2	11.5	16.9	16.9	37.4	42.8	42.8
Effective Green, g (s)	117.9	102.9	99.9	114.5	101.2	101.2	15.5	20.4	20.4	41.4	46.3	46.3
Actuated g/C Ratio	0.62	0.54	0.53	0.60	0.53	0.53	0.08	0.11	0.11	0.22	0.24	0.24
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	7.0	6.5	6.5
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	618	1917	832	266	1885	843	144	380	170	748	454	386
v/s Ratio Prot	c0.02	c0.33		c0.03	0.11		0.05	0.06		c0.17	c0.19	
v/s Ratio Perm	0.12		0.07	0.21		0.06			0.01			0.07
v/c Ratio	0.23	0.61	0.13	0.39	0.20	0.12	0.56	0.56	0.08	0.78	0.80	0.28
Uniform Delay, d1	15.2	29.9	22.9	21.7	23.3	22.2	83.9	80.5	76.4	70.1	67.4	58.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	1.5	0.3	0.3	0.2	0.3	2.6	1.0	0.1	5.0	8.8	0.1
Delay (s)	15.2	31.4	23.2	22.0	23.5	22.5	86.6	81.5	76.5	75.0	76.3	58.5
Level of Service	B	C	C	C	C	C	F	F	E	E	E	E
Approach Delay (s)		28.9			23.0			80.9			70.6	
Approach LOS		C			C			F			E	

Intersection Summary				
HCM Average Control Delay	47.6	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.66			
Actuated Cycle Length (s)	190.0	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	67.8%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
2: Michener Road & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	35	51	68	23	41	88	200	44	126	331	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1721	1583	1681	1732	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.97	1.00	0.95	0.98	1.00	0.45	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	1681	1721	1583	1681	1732	1583	845	3539	1583	962	3539	1583
Peak-hour factor, PHF	0.50	0.55	0.55	0.77	0.64	0.79	0.65	0.73	0.79	0.88	0.88	0.75
Adj. Flow (vph)	228	64	93	88	36	52	135	274	56	143	376	44
RTOR Reduction (vph)	0	0	55	0	0	34	0	0	32	0	0	22
Lane Group Flow (vph)	144	148	38	61	63	18	135	274	24	143	376	22
Turn Type	Split		pt+ov	Split		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	3	3	3 1	4	4	5	1	6	4	5	2	3
Permitted Phases						4	6		6	2		2
Actuated Green, G (s)	12.4	12.4	21.8	7.0	7.0	17.1	25.3	15.9	22.9	26.7	16.6	29.0
Effective Green, g (s)	16.4	16.4	29.8	11.0	11.0	25.1	33.3	19.9	30.9	34.7	20.6	37.0
Actuated g/C Ratio	0.22	0.22	0.41	0.15	0.15	0.34	0.45	0.27	0.42	0.47	0.28	0.50
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	376	385	643	252	260	606	552	959	666	610	993	863
v/s Ratio Prot	0.09	c0.09	0.02	0.04	c0.04	0.01	c0.04	0.08	0.01	c0.05	c0.11	0.01
v/s Ratio Perm						0.01	0.07		0.01	0.07		0.01
v/c Ratio	0.38	0.38	0.06	0.24	0.24	0.03	0.24	0.29	0.04	0.23	0.38	0.03
Uniform Delay, d1	24.2	24.2	13.3	27.5	27.5	16.1	11.9	21.1	12.5	11.1	21.2	9.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.6	0.0	0.5	0.5	0.0	0.2	0.2	0.0	0.2	0.2	0.0
Delay (s)	24.9	24.9	13.3	28.0	28.0	16.1	12.2	21.3	12.5	11.3	21.5	9.2
Level of Service	C	C	B	C	C	B	B	C	B	B	C	A
Approach Delay (s)		22.1			24.5			17.6			17.9	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM Average Control Delay	19.6	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.33			
Actuated Cycle Length (s)	73.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	40.2%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis
3: Red Rum Dr & Ashburn Village Boulevard

Temple Baptist Church

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (veh/h)	9	19	3	313	11	51	399
Sign Control	Stop			Free			Free
Grade	0%			0%			0%
Peak Hour Factor	0.75	0.79	0.25	0.80	0.69	0.85	0.79
Hourly flow rate (vph)	12	24	0	391	16	60	505
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			0.00				
vC, conflicting volume	1016	391	0			407	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1016	391	0			407	
tC, single (s)	*4.8	6.2	0.0			4.1	
tC, 2 stage (s)							
tF (s)	3.5	3.3	0.0			2.2	
p0 queue free %	97	96	0			95	
cM capacity (veh/h)	395	657	0			1152	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	12	24	391	16	60	505
Volume Left	12	0	0	0	60	0
Volume Right	0	24	0	16	0	0
cSH	395	657	1700	1700	1152	1700
Volume to Capacity	0.03	0.04	0.23	0.01	0.05	0.30
Queue Length 95th (ft)	2	3	0	0	4	0
Control Delay (s)	14.4	10.7	0.0	0.0	8.3	0.0
Lane LOS	B	B			A	
Approach Delay (s)	11.9		0.0		0.9	
Approach LOS	B					

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
4: Waxpool Rd & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	60	372	45	51	112	12	10	255	160	38	329	44
Peak Hour Factor	0.94	0.94	0.75	0.80	0.90	0.75	0.50	0.83	0.91	0.63	0.95	0.69
Hourly flow rate (vph)	64	396	60	64	124	16	20	307	176	60	346	64

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	460	60	64	140	20	483	407	64
Volume Left (vph)	64	0	64	0	20	0	60	0
Volume Right (vph)	0	60	0	16	0	176	0	64
Hadj (s)	0.10	-0.67	0.53	-0.05	0.53	-0.22	0.06	-0.57
Departure Headway (s)	8.5	7.8	10.1	9.5	9.0	8.2	8.7	3.2
Degree Utilization, x	1.09	0.13	0.18	0.37	0.05	1.11	0.98	0.06
Capacity (veh/h)	431	456	352	375	395	448	407	1121
Control Delay (s)	98.9	10.7	14.0	16.7	11.3	102.1	68.7	6.4
Approach Delay (s)	88.7		15.9		98.5		60.3	
Approach LOS	F		C		F		F	

Intersection Summary			
Delay	75.0		
HCM Level of Service	F		
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: Waxpool Rd & Faulkner Pkwy

Temple Baptist Church

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	27	347	102	64	0	130	52
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.75	0.85	0.75	0.70	1.00	0.81	0.76
Hourly flow rate (vph)	36	408	136	91	0	160	68
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					0.00		
vC, conflicting volume	478	160	229		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	478	160	229		0		
tC, single (s)	6.8	6.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	92	52	90		0		
cM capacity (veh/h)	464	856	1336		0		

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	36	408	136	46	46	160	68	0
Volume Left	36	0	136	0	0	0	0	0
Volume Right	0	408	0	0	0	0	68	0
cSH	464	856	1336	1700	1700	1700	1700	1700
Volume to Capacity	0.08	0.48	0.10	0.03	0.03	0.09	0.04	0.00
Queue Length 95th (ft)	6	65	8	0	0	0	0	0
Control Delay (s)	13.4	13.0	8.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	B	A					
Approach Delay (s)	13.0		4.8			0.0		
Approach LOS	B							

Intersection Summary			
Average Delay		7.6	
Intersection Capacity Utilization		35.0%	ICU Level of Service	A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis
1: Farmwell Rd & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	223	500	173	231	1316	746	173	511	83	295	337	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	3433	1863	1583
Flt Permitted	0.06	1.00	1.00	0.33	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	118	3539	1583	618	3539	1583	1770	3539	1583	3433	1863	1583
Peak-hour factor, PHF	0.90	0.88	0.82	0.67	0.94	0.91	0.94	0.95	0.74	0.90	0.90	0.88
Adj. Flow (vph)	248	568	211	345	1400	820	184	538	112	328	374	228
RTOR Reduction (vph)	0	0	126	0	0	179	0	0	88	0	0	174
Lane Group Flow (vph)	248	568	85	345	1400	641	184	538	24	328	374	54
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8			4
Actuated Green, G (s)	74.8	59.4	59.4	78.0	61.0	61.0	14.0	28.3	28.3	17.8	32.1	32.1
Effective Green, g (s)	82.8	63.4	60.4	86.0	65.0	65.0	18.0	31.8	31.8	21.8	35.6	35.6
Actuated g/C Ratio	0.55	0.42	0.40	0.57	0.43	0.43	0.12	0.21	0.21	0.15	0.24	0.24
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	7.0	6.5	6.5
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	279	1496	637	516	1534	686	212	750	336	499	442	376
v/s Ratio Prot	c0.12	0.16		c0.09	0.40		c0.10	0.15		c0.10	c0.20	
v/s Ratio Perm	0.38		0.05	0.29		c0.40			0.01			0.03
v/c Ratio	0.89	0.38	0.13	0.67	0.91	0.93	0.87	0.72	0.07	0.66	0.85	0.14
Uniform Delay, d1	48.0	29.8	28.3	18.4	39.8	40.5	64.8	54.9	47.3	60.6	54.6	45.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.5	0.7	0.4	2.5	9.8	21.6	28.3	2.7	0.0	2.4	13.4	0.1
Delay (s)	74.4	30.5	28.7	21.0	49.6	62.0	93.1	57.7	47.3	63.0	68.0	45.2
Level of Service	E	C	C	C	D	E	F	E	D	E	E	D
Approach Delay (s)		40.7			49.8			64.1			60.6	
Approach LOS		D			D			E			E	

Intersection Summary				
HCM Average Control Delay	52.1	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.89			
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	89.4%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
2: Michener Road & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	138	28	64	82	119	91	92	538	26	262	361	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1713	1583	1681	1764	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.97	1.00	0.95	1.00	1.00	0.52	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	1681	1713	1583	1681	1764	1583	965	3539	1583	393	3539	1583
Peak-hour factor, PHF	0.86	0.88	0.89	0.76	0.74	0.78	0.70	0.89	0.50	0.74	0.91	0.78
Adj. Flow (vph)	160	32	72	108	161	117	131	604	52	354	397	68
RTOR Reduction (vph)	0	0	50	0	0	65	0	0	27	0	0	32
Lane Group Flow (vph)	96	96	22	97	172	52	131	604	25	354	397	36
Turn Type	Split		pt+ov	Split		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	3	3	3 1	4	4	5	1	6	4	5	2	3
Permitted Phases						4	6		6	2		2
Actuated Green, G (s)	11.6	11.6	21.3	16.0	16.0	35.2	33.0	23.3	39.3	49.5	32.8	44.4
Effective Green, g (s)	15.6	15.6	29.3	20.0	20.0	43.2	41.0	27.3	47.3	53.5	36.8	52.4
Actuated g/C Ratio	0.16	0.16	0.30	0.20	0.20	0.44	0.42	0.28	0.48	0.55	0.38	0.53
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	267	272	473	343	360	746	516	985	763	540	1328	894
v/s Ratio Prot	c0.06	0.06	0.01	0.06	c0.10	0.02	0.04	0.17	0.01	c0.16	0.11	0.01
v/s Ratio Perm						0.02	0.07		0.01	c0.20		0.02
v/c Ratio	0.36	0.35	0.05	0.28	0.48	0.07	0.25	0.61	0.03	0.66	0.30	0.04
Uniform Delay, d1	36.8	36.8	24.5	33.0	34.4	15.8	17.9	30.8	13.4	14.8	21.6	10.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.8	0.0	0.5	1.0	0.0	0.3	1.1	0.0	2.9	0.1	0.0
Delay (s)	37.6	37.5	24.5	33.4	35.4	15.9	18.2	31.9	13.4	17.7	21.7	10.9
Level of Service	D	D	C	C	D	B	B	C	B	B	C	B
Approach Delay (s)		34.0			29.0			28.4			19.1	
Approach LOS		C			C			C			B	

Intersection Summary				
HCM Average Control Delay	25.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	98.1	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	51.5%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis
3: Red Rum Dr & Ashburn Village Boulevard

Temple Baptist Church

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	36	76	580	22	41	466
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.68	0.94	0.92	0.79	0.84
Hourly flow rate (vph)	48	112	617	24	52	555
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	1276	617			641	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1276	617			641	
tC, single (s)	*4.8	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	77			94	
cM capacity (veh/h)	309	490			943	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	48	112	617	24	52	555
Volume Left	48	0	0	0	52	0
Volume Right	0	112	0	24	0	0
cSH	309	490	1700	1700	943	1700
Volume to Capacity	0.16	0.23	0.36	0.01	0.06	0.33
Queue Length 95th (ft)	14	22	0	0	4	0
Control Delay (s)	18.8	14.5	0.0	0.0	9.0	0.0
Lane LOS	C	B			A	
Approach Delay (s)	15.8		0.0		0.8	
Approach LOS	C					

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
4: Waxpool Rd & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	103	192	27	188	310	34	107	465	37	26	296	180
Peak Hour Factor	0.83	0.84	0.68	0.81	0.91	0.77	0.84	0.91	0.62	0.50	0.96	0.70
Hourly flow rate (vph)	124	229	40	232	341	44	127	511	60	52	308	257

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	353	40	232	385	127	571	360	257
Volume Left (vph)	124	0	232	0	127	0	52	0
Volume Right (vph)	0	40	0	44	0	60	0	257
Hadj (s)	0.21	-0.67	0.53	-0.05	0.53	-0.04	0.06	-0.57
Departure Headway (s)	9.7	8.9	9.9	9.3	10.2	9.6	9.6	3.2
Degree Utilization, x	0.95	0.10	0.64	1.00	0.36	1.52	0.96	0.23
Capacity (veh/h)	365	397	353	385	349	387	360	1122
Control Delay (s)	66.9	11.6	27.7	75.7	17.6	269.7	69.3	7.1
Approach Delay (s)	61.3		57.6		223.7		43.4	
Approach LOS	F		F		F		E	

Intersection Summary			
Delay	104.3		
HCM Level of Service	F		
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: Waxpool Rd & Faulkner Pkwy

Temple Baptist Church

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	76	230	344	253	0	92	47
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	76	230	344	253	0	92	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					0.00		
vC, conflicting volume	906	92	139		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	906	92	139		0		
tC, single (s)	6.8	6.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	64	76	76		0		
cM capacity (veh/h)	210	947	1442		0		

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	76	230	344	126	126	92	47	0
Volume Left	76	0	344	0	0	0	0	0
Volume Right	0	230	0	0	0	0	47	0
cSH	210	947	1442	1700	1700	1700	1700	1700
Volume to Capacity	0.36	0.24	0.24	0.07	0.07	0.05	0.03	0.00
Queue Length 95th (ft)	39	24	23	0	0	0	0	0
Control Delay (s)	31.6	10.0	8.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	D	B	A					
Approach Delay (s)	15.4		4.8			0.0		
Approach LOS	C							

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Red Rum Dr & Ashburn Village Boulevard

Temple Baptist Church

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	2	0	270	4	4	286
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.91
Hourly flow rate (vph)	2	0	293	4	4	314
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	616	293			298	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	616	293			298	
tC, single (s)	*4.8	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	597	746			1263	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	2	0	293	4	4	314
Volume Left	2	0	0	0	4	0
Volume Right	0	0	0	4	0	0
cSH	597	1700	1700	1700	1263	1700
Volume to Capacity	0.00	0.00	0.17	0.00	0.00	0.18
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	11.1	0.0	0.0	0.0	7.9	0.0
Lane LOS	B	A			A	
Approach Delay (s)	11.1		0.0		0.1	
Approach LOS	B					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	25.1%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
4: Waxpool Rd & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	73	266	18	41	147	7	11	194	72	11	217	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	289	20	45	160	8	12	211	78	12	236	65

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	368	20	45	167	12	289	248	65
Volume Left (vph)	79	0	45	0	12	0	12	0
Volume Right (vph)	0	20	0	8	0	78	0	65
Hadj (s)	0.14	-0.67	0.53	0.00	0.53	-0.16	0.04	-0.57
Departure Headway (s)	7.0	6.2	7.8	7.3	7.6	6.9	7.2	3.2
Degree Utilization, x	0.72	0.03	0.10	0.34	0.03	0.56	0.49	0.06
Capacity (veh/h)	495	548	417	441	441	482	458	1121
Control Delay (s)	24.7	8.2	10.5	12.8	9.6	17.1	17.0	6.4
Approach Delay (s)	23.9		12.3		16.8		14.8	
Approach LOS	C		B		C		B	

Intersection Summary			
Delay	17.8		
HCM Level of Service	C		
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

APPENDIX E

INTERSECTION CAPACITY ANALYSIS RESULTS – FUTURE CONDITIONS WITHOUT DEVELOPMENT (2012)

HCM Signalized Intersection Capacity Analysis
1: Farmwell Rd & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	1119	220	95	372	165	126	344	128	570	465	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	3433	1863	1583
Flt Permitted	0.44	1.00	1.00	0.10	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	814	3539	1583	179	3539	1583	1770	3539	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	1216	239	103	404	179	137	374	139	620	505	284
RTOR Reduction (vph)	0	0	111	0	0	98	0	0	116	0	0	135
Lane Group Flow (vph)	148	1216	128	103	404	81	137	374	23	620	505	149
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8			4
Actuated Green, G (s)	97.3	84.8	84.8	92.3	82.3	82.3	13.0	28.5	28.5	39.2	54.7	54.7
Effective Green, g (s)	105.3	88.8	85.8	100.3	86.3	86.3	17.0	32.0	32.0	43.2	58.2	58.2
Actuated g/C Ratio	0.55	0.47	0.45	0.53	0.45	0.45	0.09	0.17	0.17	0.23	0.31	0.31
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	7.0	6.5	6.5
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	534	1654	715	212	1607	719	158	596	267	781	571	485
v/s Ratio Prot	c0.02	c0.34		c0.04	0.11		c0.08	0.11		0.18	c0.27	
v/s Ratio Perm	0.13		0.08	0.22		0.05			0.01			0.09
v/c Ratio	0.28	0.74	0.18	0.49	0.25	0.11	0.87	0.63	0.09	0.79	0.88	0.31
Uniform Delay, d1	21.2	41.1	31.1	31.2	31.9	29.8	85.4	73.5	66.7	69.2	62.7	50.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	2.9	0.5	0.6	0.4	0.3	35.1	1.5	0.1	5.2	14.7	0.1
Delay (s)	21.3	44.0	31.6	31.9	32.3	30.2	120.4	75.0	66.7	74.4	77.4	50.6
Level of Service	C	D	C	C	C	C	F	E	E	E	E	D
Approach Delay (s)		40.1			31.7			82.8			70.7	
Approach LOS		D			C			F			E	

Intersection Summary				
HCM Average Control Delay	55.1	HCM Level of Service	E	
HCM Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	190.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	81.0%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
2: Michener Road & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	37	54	72	24	43	93	433	47	134	552	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1723	1583	1681	1726	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.97	1.00	0.95	0.98	1.00	0.37	1.00	1.00	0.34	1.00	1.00
Satd. Flow (perm)	1681	1723	1583	1681	1726	1583	692	3539	1583	625	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	40	59	78	26	47	101	471	51	146	600	38
RTOR Reduction (vph)	0	0	40	0	0	31	0	0	27	0	0	17
Lane Group Flow (vph)	84	88	19	51	53	16	101	471	24	146	600	21
Turn Type	Split		pt+ov	Split		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	3	3	3 1	4	4	5	1	6	4	5	2	3
Permitted Phases						4	6		6	2		2
Actuated Green, G (s)	10.0	10.0	16.3	6.7	6.7	17.0	26.1	19.8	26.5	34.1	23.8	33.8
Effective Green, g (s)	14.0	14.0	24.3	10.7	10.7	25.0	34.1	23.8	34.5	41.1	27.8	41.8
Actuated g/C Ratio	0.19	0.19	0.32	0.14	0.14	0.33	0.46	0.32	0.46	0.55	0.37	0.56
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	315	322	514	240	247	593	464	1126	730	562	1315	948
v/s Ratio Prot	0.05	c0.05	0.01	0.03	c0.03	0.01	0.03	0.13	0.00	c0.05	c0.17	0.00
v/s Ratio Perm						0.00	0.07		0.01	0.09		0.01
v/c Ratio	0.27	0.27	0.04	0.21	0.21	0.03	0.22	0.42	0.03	0.26	0.46	0.02
Uniform Delay, d1	26.0	26.0	17.3	28.3	28.3	16.7	11.8	20.1	11.0	8.8	17.8	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.0	0.4	0.4	0.0	0.2	0.3	0.0	0.2	0.3	0.0
Delay (s)	26.5	26.5	17.3	28.8	28.8	16.7	12.0	20.3	11.0	9.1	18.0	7.4
Level of Service	C	C	B	C	C	B	B	C	B	A	B	A
Approach Delay (s)		24.1			25.0			18.2			15.8	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM Average Control Delay	18.5	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.33			
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	42.1%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis
3: Red Rum Dr & Ashburn Village Boulevard

Temple Baptist Church

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (veh/h)	10	20	3	542	12	54	654
Sign Control	Stop			Free			Free
Grade	0%			0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	22	0	589	13	59	711
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None			None
Median storage veh)							
Upstream signal (ft)				915			
pX, platoon unblocked	0.85	0.85	0.00			0.85	
vC, conflicting volume	1062	589	0			602	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	986	432	0			447	
tC, single (s)	*4.8	6.9	0.0			4.1	
tC, 2 stage (s)							
tF (s)	3.5	3.3	0.0			2.2	
p0 queue free %	97	96	0			94	
cM capacity (veh/h)	342	488	0			946	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	11	22	589	13	59	355	355
Volume Left	11	0	0	0	59	0	0
Volume Right	0	22	0	13	0	0	0
cSH	342	488	1700	1700	946	1700	1700
Volume to Capacity	0.03	0.04	0.35	0.01	0.06	0.21	0.21
Queue Length 95th (ft)	2	3	0	0	5	0	0
Control Delay (s)	15.9	12.7	0.0	0.0	9.1	0.0	0.0
Lane LOS	C	B			A		
Approach Delay (s)	13.8		0.0		0.7		
Approach LOS	B						

Intersection Summary				
Average Delay		0.7		
Intersection Capacity Utilization		54.9%	ICU Level of Service	A
Analysis Period (min)		15		

* User Entered Value

HCM Signalized Intersection Capacity Analysis
4: Waxpool Rd (Rt 625) & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	394	48	54	119	14	11	479	170	43	573	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583		3487	
Flt Permitted	0.68	1.00	1.00	0.36	1.00	1.00	0.23	1.00	1.00		0.90	
Satd. Flow (perm)	1260	3539	1583	677	3539	1583	423	3539	1583		3133	
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)	65	394	48	54	119	14	11	479	170	43	573	52
RTOR Reduction (vph)	0	0	31	0	0	10	0	0	61	0	4	0
Lane Group Flow (vph)	65	394	17	54	119	4	11	479	109	0	664	0
Turn Type	pm+pt		pm+ov	pm+pt		Perm	pm+pt		pm+ov	Perm		
Protected Phases	7	4	5	3	8		5	2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	19.8	14.0	19.2	22.8	15.5	15.5	32.6	32.6	39.9		21.4	
Effective Green, g (s)	26.8	17.5	25.2	29.8	19.0	19.0	35.6	35.6	46.9		24.4	
Actuated g/C Ratio	0.37	0.24	0.35	0.41	0.26	0.26	0.49	0.49	0.64		0.33	
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5	6.5	6.0	6.0	6.5		6.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	528	850	547	439	922	413	358	1728	1018		1049	
v/s Ratio Prot	0.02	c0.11	0.00	c0.02	0.03		0.00	c0.14	0.02			
v/s Ratio Perm	0.03		0.01	0.03		0.00	0.01		0.05		c0.21	
v/c Ratio	0.12	0.46	0.03	0.12	0.13	0.01	0.03	0.28	0.11		0.63	
Uniform Delay, d1	15.1	23.7	15.8	13.4	20.6	20.0	10.6	11.0	5.0		20.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.9	
Delay (s)	15.2	23.8	15.8	13.4	20.6	20.0	10.6	11.1	5.0		21.4	
Level of Service	B	C	B	B	C	B	B	B	A		C	
Approach Delay (s)		22.0			18.5			9.5			21.4	
Approach LOS		C			B			A			C	

Intersection Summary				
HCM Average Control Delay	17.4	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.47			
Actuated Cycle Length (s)	72.9	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	62.0%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis
5: Waxpool Rd & Faulkner Pkwy

Temple Baptist Church

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	29	368	108	73	0	139	55
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	400	117	79	0	151	60
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)				1220			
pX, platoon unblocked					0.00		
vC, conflicting volume	426	151	211		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	426	151	211		0		
tC, single (s)	6.8	6.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	94	54	91		0		
cM capacity (veh/h)	509	868	1357		0		

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	32	400	117	40	40	151	60	0
Volume Left	32	0	117	0	0	0	0	0
Volume Right	0	400	0	0	0	0	60	0
cSH	509	868	1357	1700	1700	1700	1700	1700
Volume to Capacity	0.06	0.46	0.09	0.02	0.02	0.09	0.04	0.00
Queue Length 95th (ft)	5	62	7	0	0	0	0	0
Control Delay (s)	12.5	12.6	7.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	B	A					
Approach Delay (s)	12.6		4.7			0.0		
Approach LOS	B							

Intersection Summary			
Average Delay		7.6	
Intersection Capacity Utilization		36.8%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
6: Morley Corner Site Entrance & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	0	34	0	0	0	7	555	0	0	675	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	0	37	0	0	0	8	603	0	0	734	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											1076	
pX, platoon unblocked	0.92	0.92	0.92	0.92	0.92		0.92					
vC, conflicting volume	1051	1352	367	1022	1357	302	738			603		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	888	1215	147	857	1220	302	550			603		
tC, single (s)	*5.4	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	95	100	100	100	99			100		
cM capacity (veh/h)	370	165	806	219	164	694	938			970		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	57	0	8	302	302	0	0	367	367	4
Volume Left	20	0	8	0	0	0	0	0	0	0
Volume Right	37	0	0	0	0	0	0	0	0	4
cSH	573	1700	938	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.10	0.00	0.01	0.18	0.18	0.00	0.00	0.22	0.22	0.00
Queue Length 95th (ft)	8	0	1	0	0	0	0	0	0	0
Control Delay (s)	12.0	0.0	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A	A							
Approach Delay (s)	12.0	0.0	0.1				0.0			
Approach LOS	B	A								

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization		28.7%	ICU Level of Service A
Analysis Period (min)		15	

* User Entered Value

HCM Signalized Intersection Capacity Analysis
1: Farmwell Rd & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	236	532	242	248	1403	815	268	716	89	317	481	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	3433	1863	1583
Flt Permitted	0.06	1.00	1.00	0.33	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	121	3539	1583	610	3539	1583	1770	3539	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	257	578	263	270	1525	886	291	778	97	345	523	232
RTOR Reduction (vph)	0	0	160	0	0	175	0	0	75	0	0	128
Lane Group Flow (vph)	257	578	103	270	1525	711	291	778	22	345	523	104
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8			4
Actuated Green, G (s)	73.2	57.7	57.7	73.8	58.0	58.0	14.0	30.8	30.8	18.2	35.0	35.0
Effective Green, g (s)	81.2	61.7	58.7	81.8	62.0	62.0	18.0	34.3	34.3	22.2	38.5	38.5
Actuated g/C Ratio	0.54	0.41	0.39	0.55	0.41	0.41	0.12	0.23	0.23	0.15	0.26	0.26
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	7.0	6.5	6.5
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	280	1456	619	486	1463	654	212	809	362	508	478	406
v/s Ratio Prot	c0.12	0.16		0.07	0.43		c0.16	0.22		c0.10	c0.28	
v/s Ratio Perm	0.38		0.07	0.23		c0.45			0.01			0.07
v/c Ratio	0.92	0.40	0.17	0.56	1.04	1.09	1.37	0.96	0.06	0.68	1.09	0.26
Uniform Delay, d1	48.9	31.1	29.7	19.5	44.0	44.0	66.0	57.2	45.3	60.5	55.8	44.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	32.2	0.8	0.6	0.8	35.4	61.3	194.6	22.5	0.0	2.8	69.2	0.1
Delay (s)	81.1	31.9	30.3	20.2	79.4	105.3	260.6	79.7	45.3	63.4	124.9	44.5
Level of Service	F	C	C	C	E	F	F	E	D	E	F	D
Approach Delay (s)		43.0			82.0			122.0			88.6	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	83.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: Michener Road & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	146	30	68	87	126	96	98	831	28	278	569	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1713	1583	1681	1764	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.97	1.00	0.95	1.00	1.00	0.42	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	1681	1713	1583	1681	1764	1583	778	3539	1583	225	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	33	74	95	137	104	107	903	30	302	618	61
RTOR Reduction (vph)	0	0	54	0	0	63	0	0	14	0	0	25
Lane Group Flow (vph)	95	97	20	85	147	41	107	903	16	302	618	36
Turn Type	Split		pt+ov	Split		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	3	3	3 1	4	4	5	1	6	4	5	2	3
Permitted Phases						4	6		6	2		2
Actuated Green, G (s)	12.1	12.1	21.0	15.5	15.5	35.0	43.2	34.3	49.8	60.8	44.9	57.0
Effective Green, g (s)	16.1	16.1	29.0	19.5	19.5	43.0	51.2	38.3	57.8	64.8	48.9	65.0
Actuated g/C Ratio	0.15	0.15	0.27	0.18	0.18	0.39	0.47	0.35	0.53	0.59	0.45	0.59
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	247	252	420	300	314	666	481	1239	836	465	1582	984
v/s Ratio Prot	0.06	c0.06	0.01	0.05	c0.08	0.01	0.03	c0.26	0.00	c0.14	0.17	0.01
v/s Ratio Perm						0.01	0.08		0.01	0.25		0.02
v/c Ratio	0.38	0.38	0.05	0.28	0.47	0.06	0.22	0.73	0.02	0.65	0.39	0.04
Uniform Delay, d1	42.2	42.2	29.9	38.9	40.3	20.6	16.5	31.0	12.3	21.8	20.3	9.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	1.0	0.0	0.5	1.1	0.0	0.2	2.2	0.0	3.1	0.2	0.0
Delay (s)	43.2	43.2	30.0	39.4	41.4	20.7	16.7	33.2	12.3	25.0	20.4	9.2
Level of Service	D	D	C	D	D	C	B	C	B	C	C	A
Approach Delay (s)		39.5			34.5			30.9			21.1	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	109.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
3: Red Rum Dr & Ashburn Village Boulevard

Temple Baptist Church

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	38	81	900	23	43	678
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	41	88	978	25	47	737
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			917			
pX, platoon unblocked	0.70	0.70			0.70	
vC, conflicting volume	1440	978			1003	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1415	759			794	
tC, single (s)	*4.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	78	64			92	
cM capacity (veh/h)	185	246			579	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	41	88	978	25	47	368	368
Volume Left	41	0	0	0	47	0	0
Volume Right	0	88	0	25	0	0	0
cSH	185	246	1700	1700	579	1700	1700
Volume to Capacity	0.22	0.36	0.58	0.01	0.08	0.22	0.22
Queue Length 95th (ft)	21	39	0	0	7	0	0
Control Delay (s)	29.9	27.6	0.0	0.0	11.8	0.0	0.0
Lane LOS	D	D			B		
Approach Delay (s)	28.3		0.0		0.7		
Approach LOS	D						

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

* User Entered Value

HCM Signalized Intersection Capacity Analysis
4: Waxpool Rd (Rt. 625) & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	204	29	199	329	39	113	770	39	29	494	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583		3389	
Flt Permitted	0.46	1.00	1.00	0.44	1.00	1.00	0.19	1.00	1.00		0.89	
Satd. Flow (perm)	852	3539	1583	814	3539	1583	362	3539	1583		3030	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	222	32	216	358	42	123	837	42	32	537	210
RTOR Reduction (vph)	0	0	22	0	0	34	0	0	11	0	25	0
Lane Group Flow (vph)	124	222	10	216	358	8	123	837	31	0	754	0
Turn Type	pm+pt		pm+ov	pm+pt		Perm	pm+pt		pm+ov	Perm		
Protected Phases	7	4	5	3	8		5	2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	19.2	10.5	20.0	25.0	13.4	13.4	44.2	44.2	55.8		28.7	
Effective Green, g (s)	26.2	14.0	26.0	32.0	16.9	16.9	47.2	47.2	62.8		31.7	
Actuated g/C Ratio	0.31	0.16	0.30	0.38	0.20	0.20	0.55	0.55	0.74		0.37	
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5	6.5	6.0	6.0	6.5		6.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	393	581	483	475	701	314	407	1958	1165		1126	
v/s Ratio Prot	0.05	0.06	0.00	c0.08	c0.10		0.04	c0.24	0.00			
v/s Ratio Perm	0.05		0.00	0.09		0.01	0.12		0.01		c0.25	
v/c Ratio	0.32	0.38	0.02	0.45	0.51	0.03	0.30	0.43	0.03		0.67	
Uniform Delay, d1	22.0	31.8	20.7	19.1	30.5	27.6	10.9	11.1	3.0		22.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.2	0.2	0.0	0.3	0.3	0.0	0.2	0.1	0.0		1.2	
Delay (s)	22.2	31.9	20.7	19.4	30.8	27.6	11.1	11.2	3.0		23.7	
Level of Service	C	C	C	B	C	C	B	B	A		C	
Approach Delay (s)		27.8			26.6			10.8			23.7	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	85.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
5: Waxpool Rd & Faulkner Pkwy

Temple Baptist Church

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR		
Lane Configurations									
Volume (veh/h)	81	244	365	270	0	103	50		
Sign Control	Stop			Free		Free			
Grade	0%			0%		0%			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	88	265	397	293	0	112	54		
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type				None		None			
Median storage veh)									
Upstream signal (ft)				1225					
pX, platoon unblocked					0.00				
vC, conflicting volume	1052	112	166		0				
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	1052	112	166		0				
tC, single (s)	6.8	6.9	4.1		0.0				
tC, 2 stage (s)									
tF (s)	3.5	3.3	2.2		0.0				
p0 queue free %	45	71	72		0				
cM capacity (veh/h)	159	920	1409		0				

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	88	265	397	147	147	112	54	0
Volume Left	88	0	397	0	0	0	0	0
Volume Right	0	265	0	0	0	0	54	0
cSH	159	920	1409	1700	1700	1700	1700	1700
Volume to Capacity	0.55	0.29	0.28	0.09	0.09	0.07	0.03	0.00
Queue Length 95th (ft)	70	30	29	0	0	0	0	0
Control Delay (s)	52.4	10.5	8.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	B	A					
Approach Delay (s)	20.9		4.9			0.0		
Approach LOS	C							

Intersection Summary			
Average Delay		8.9	
Intersection Capacity Utilization		38.0%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
9: Morley Corner Site Entrance & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	0	16	0	0	0	33	947	0	0	705	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	0	17	0	0	0	36	1029	0	0	766	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											1076	
pX, platoon unblocked	0.91	0.91	0.91	0.91	0.91		0.91					
vC, conflicting volume	1353	1867	383	1502	1887	515	786			1029		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1191	1757	127	1355	1778	515	569			1029		
tC, single (s)	*5.4	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	98	100	100	100	96			100		
cM capacity (veh/h)	256	74	819	93	71	505	910			671		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	26	0	36	515	515	0	0	383	383	20
Volume Left	9	0	36	0	0	0	0	0	0	0
Volume Right	17	0	0	0	0	0	0	0	0	20
cSH	473	1700	910	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.06	0.00	0.04	0.30	0.30	0.00	0.00	0.23	0.23	0.01
Queue Length 95th (ft)	4	0	3	0	0	0	0	0	0	0
Control Delay (s)	13.1	0.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A	A							
Approach Delay (s)	13.1	0.0	0.3				0.0			
Approach LOS	B	A								

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		37.4%	ICU Level of Service A
Analysis Period (min)		15	

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
3: Red Rum Dr & Ashburn Village Boulevard

Temple Baptist Church

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	2	0	425	4	4	439
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	462	4	4	477
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			917			
pX, platoon unblocked	0.91	0.91			0.91	
vC, conflicting volume	709	462			466	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	630	357			362	
tC, single (s)	*4.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	535	581			1084	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	2	0	462	4	4	239	239
Volume Left	2	0	0	0	4	0	0
Volume Right	0	0	0	4	0	0	0
cSH	535	1700	1700	1700	1084	1700	1700
Volume to Capacity	0.00	0.00	0.27	0.00	0.00	0.14	0.14
Queue Length 95th (ft)	0	0	0	0	0	0	0
Control Delay (s)	11.8	0.0	0.0	0.0	8.3	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	11.8		0.0		0.1		
Approach LOS	B						

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

HCM Signalized Intersection Capacity Analysis
4: Waxpool Rd (Rt. 625) & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	282	19	43	156	9	12	339	76	14	360	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583		3452	
Flt Permitted	0.62	1.00	1.00	0.53	1.00	1.00	0.34	1.00	1.00		0.94	
Satd. Flow (perm)	1149	3539	1583	982	3539	1583	632	3539	1583		3242	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	307	21	47	170	10	13	368	83	15	391	74
RTOR Reduction (vph)	0	0	14	0	0	8	0	0	31	0	9	0
Lane Group Flow (vph)	88	307	7	47	170	2	13	368	52	0	471	0
Turn Type	pm+pt		pm+ov	pm+pt		Perm	pm+pt		pm+ov	Perm		
Protected Phases	7	4	5	3	8		5	2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	16.5	10.6	12.8	15.3	10.0	10.0	24.8	24.8	30.1		16.6	
Effective Green, g (s)	23.5	14.1	18.8	22.3	13.5	13.5	27.8	27.8	37.1		19.6	
Actuated g/C Ratio	0.39	0.24	0.31	0.37	0.23	0.23	0.47	0.47	0.62		0.33	
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5	6.5	6.0	6.0	6.5		6.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	550	836	498	483	800	358	393	1648	984		1064	
v/s Ratio Prot	c0.03	c0.09	0.00	0.01	0.05		0.00	c0.10	0.01			
v/s Ratio Perm	0.04		0.00	0.02		0.00	0.01		0.02		c0.15	
v/c Ratio	0.16	0.37	0.01	0.10	0.21	0.01	0.03	0.22	0.05		0.44	
Uniform Delay, d1	11.6	19.1	14.1	12.0	18.8	17.9	9.0	9.5	4.4		15.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.1	
Delay (s)	11.6	19.2	14.1	12.1	18.8	17.9	9.0	9.5	4.4		15.9	
Level of Service	B	B	B	B	B	B	A	A	A		B	
Approach Delay (s)		17.3			17.4			8.6			15.9	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
8: Morley Corner Site Entrance & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	0	27	0	0	0	25	399	0	0	416	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	0	29	0	0	0	27	434	0	0	452	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											1076	
pX, platoon unblocked												
vC, conflicting volume	723	940	226	743	955	217	467			434		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	723	940	226	743	955	217	467			434		
tC, single (s)	*5.8	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	96	100	100	100	98			100		
cM capacity (veh/h)	436	256	777	286	250	788	1090			1122		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	45	0	27	217	217	0	0	226	226	15
Volume Left	15	0	27	0	0	0	0	0	0	0
Volume Right	29	0	0	0	0	0	0	0	0	15
cSH	613	1700	1090	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.07	0.00	0.02	0.13	0.13	0.00	0.00	0.13	0.13	0.01
Queue Length 95th (ft)	6	0	2	0	0	0	0	0	0	0
Control Delay (s)	11.3	0.0	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A	A							
Approach Delay (s)	11.3	0.0	0.5				0.0			
Approach LOS	B	A								

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization		28.2%	ICU Level of Service	A
Analysis Period (min)		15	

* User Entered Value

APPENDIX F

INTERSECTION CAPACITY ANALYSIS RESULTS – FUTURE CONDITIONS WITH DEVELOPMENT (2012)

HCM Signalized Intersection Capacity Analysis
1: Farmwell Rd & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	1119	237	111	372	165	137	394	138	570	543	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	3433	1863	1583
Flt Permitted	0.43	1.00	1.00	0.08	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	804	3539	1583	141	3539	1583	1770	3539	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	1216	258	121	404	179	149	428	150	620	590	284
RTOR Reduction (vph)	0	0	127	0	0	103	0	0	121	0	0	111
Lane Group Flow (vph)	148	1216	131	121	404	76	149	428	29	620	590	173
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8			4
Actuated Green, G (s)	91.5	78.7	78.7	88.1	77.0	77.0	13.0	33.5	33.5	39.2	59.7	59.7
Effective Green, g (s)	99.5	82.7	79.7	96.1	81.0	81.0	17.0	37.0	37.0	43.2	63.2	63.2
Actuated g/C Ratio	0.52	0.44	0.42	0.51	0.43	0.43	0.09	0.19	0.19	0.23	0.33	0.33
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	7.0	6.5	6.5
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	506	1540	664	201	1509	675	158	689	308	781	620	527
v/s Ratio Prot	c0.03	c0.34		c0.05	0.11		c0.08	0.12		0.18	c0.32	
v/s Ratio Perm	0.13		0.08	0.26		0.05			0.02			0.11
v/c Ratio	0.29	0.79	0.20	0.60	0.27	0.11	0.94	0.62	0.09	0.79	0.95	0.33
Uniform Delay, d1	24.1	46.2	34.9	35.8	35.3	32.8	86.0	70.1	62.8	69.2	61.9	47.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	4.2	0.7	3.5	0.4	0.3	54.1	1.3	0.0	5.2	24.5	0.1
Delay (s)	24.2	50.4	35.6	39.2	35.7	33.2	140.1	71.3	62.8	74.4	86.4	47.6
Level of Service	C	D	D	D	D	C	F	E	E	E	F	D
Approach Delay (s)		45.6			35.7			83.7			74.0	
Approach LOS		D			D			F			E	

Intersection Summary				
HCM Average Control Delay	59.5	HCM Level of Service	E	
HCM Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	190.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	86.6%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
2: Michener Road & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	37	90	74	24	43	118	505	50	134	664	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1723	1583	1681	1725	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.97	1.00	0.95	0.97	1.00	0.25	1.00	1.00	0.31	1.00	1.00
Satd. Flow (perm)	1681	1723	1583	1681	1725	1583	459	3539	1583	576	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	40	98	80	26	47	128	549	54	146	722	38
RTOR Reduction (vph)	0	0	63	0	0	32	0	0	28	0	0	18
Lane Group Flow (vph)	84	88	35	52	54	15	128	549	26	146	722	20
Turn Type	Split		pt+ov	Split		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	3	3	3 1	4	4	5	1	6	4	5	2	3
Permitted Phases						4	6		6	2		2
Actuated Green, G (s)	10.5	10.5	19.5	6.9	6.9	17.4	30.9	21.9	28.8	33.9	23.4	33.9
Effective Green, g (s)	14.5	14.5	27.5	10.9	10.9	25.4	38.9	25.9	36.8	41.9	27.4	41.9
Actuated g/C Ratio	0.19	0.19	0.35	0.14	0.14	0.33	0.50	0.33	0.47	0.54	0.35	0.54
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	321	560	236	242	578	449	1178	749	533	1246	914
v/s Ratio Prot	0.05	c0.05	0.02	0.03	c0.03	0.00	c0.05	0.16	0.00	c0.05	c0.20	0.00
v/s Ratio Perm						0.00	0.10		0.01	0.10		0.01
v/c Ratio	0.27	0.27	0.06	0.22	0.22	0.03	0.29	0.47	0.03	0.27	0.58	0.02
Uniform Delay, d1	27.1	27.1	16.6	29.7	29.7	17.8	11.1	20.5	11.0	9.6	20.5	8.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.0	0.5	0.5	0.0	0.4	0.3	0.0	0.3	0.7	0.0
Delay (s)	27.6	27.6	16.7	30.2	30.2	17.8	11.5	20.8	11.0	9.9	21.2	8.4
Level of Service	C	C	B	C	C	B	B	C	B	A	C	A
Approach Delay (s)		23.6			26.4			18.4			18.8	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM Average Control Delay	19.9	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.40			
Actuated Cycle Length (s)	77.8	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	45.9%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (veh/h)	89	3	54	10	2	20	3	131	541	12	54	652
Sign Control		Stop			Stop				Free			Free
Grade		0%			0%				0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	97	3	59	11	2	22	0	142	588	13	59	709
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									None			None
Median storage veh)												
Upstream signal (ft)									915			
pX, platoon unblocked							0.00					
vC, conflicting volume	1428	1712	354	1405	1846	294	0	855			601	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1428	1712	354	1405	1846	294	0	855			601	
tC, single (s)	7.5	6.5	6.9	*4.8	6.5	6.9	0.0	4.1			4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	0.0	2.2			2.2	
p0 queue free %	0	95	91	95	96	97	0	82			94	
cM capacity (veh/h)	74	69	642	208	57	702	0	780			972	

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	100	59	13	22	142	294	294	13	59	354	354	147
Volume Left	97	0	11	0	142	0	0	0	59	0	0	0
Volume Right	0	59	0	22	0	0	0	13	0	0	0	147
cSH	74	642	144	702	780	1700	1700	1700	972	1700	1700	1700
Volume to Capacity	1.36	0.09	0.09	0.03	0.18	0.17	0.17	0.01	0.06	0.21	0.21	0.09
Queue Length 95th (ft)	200	8	7	2	17	0	0	0	5	0	0	0
Control Delay (s)	325.2	11.2	32.4	10.3	10.6	0.0	0.0	0.0	8.9	0.0	0.0	0.0
Lane LOS	F	B	D	B	B				A			
Approach Delay (s)	209.1		18.6		2.0				0.6			
Approach LOS	F		C									

Intersection Summary			
Average Delay		19.4	
Intersection Capacity Utilization		47.2%	ICU Level of Service
Analysis Period (min)		15	

* User Entered Value

Movement	SBR
Lane Configurations	
Volume (veh/h)	135
Sign Control	
Grade	
Peak Hour Factor	0.92
Hourly flow rate (vph)	147
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	

Direction, Lane #

HCM Signalized Intersection Capacity Analysis
4: Waxpool Rd (Rt 625) & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	161	394	48	54	152	14	26	510	170	64	603	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583		3485	
Flt Permitted	0.54	1.00	1.00	0.48	1.00	1.00	0.21	1.00	1.00		0.86	
Satd. Flow (perm)	1012	3539	1583	902	3539	1583	396	3539	1583		3011	
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)	161	394	48	54	152	14	26	510	170	64	603	52
RTOR Reduction (vph)	0	0	32	0	0	11	0	0	59	0	4	0
Lane Group Flow (vph)	161	394	16	54	152	3	26	510	111	0	715	0
Turn Type	pm+pt		pm+ov	pm+pt		Perm	pm+pt		pm+ov	Perm		
Protected Phases	7	4	5	3	8		5	2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	25.6	14.6	19.9	18.4	11.0	11.0	35.3	35.3	42.7		24.0	
Effective Green, g (s)	32.0	18.1	25.9	25.4	14.5	14.5	38.3	38.3	49.7		27.0	
Actuated g/C Ratio	0.42	0.24	0.34	0.33	0.19	0.19	0.50	0.50	0.65		0.35	
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5	6.5	6.0	6.0	6.5		6.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	568	840	537	424	673	301	348	1776	1031		1065	
v/s Ratio Prot	c0.05	c0.11	0.00	0.02	0.04		0.01	c0.14	0.02			
v/s Ratio Perm	0.06		0.01	0.02		0.00	0.03		0.05		c0.24	
v/c Ratio	0.28	0.47	0.03	0.13	0.23	0.01	0.07	0.29	0.11		0.67	
Uniform Delay, d1	14.2	25.0	16.8	17.5	26.2	25.1	10.8	11.1	5.0		20.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0		1.3	
Delay (s)	14.3	25.1	16.8	17.6	26.2	25.1	10.8	11.1	5.0		22.2	
Level of Service	B	C	B	B	C	C	B	B	A		C	
Approach Delay (s)		21.6			24.0			9.6			22.2	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
5: Waxpool Rd & Faulkner Pkwy

Temple Baptist Church

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	29	402	135	109	0	201	55
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	437	147	118	0	218	60
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)				1219			
pX, platoon unblocked					0.00		
vC, conflicting volume	571	218	278		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	571	218	278		0		
tC, single (s)	6.8	6.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	92	44	89		0		
cM capacity (veh/h)	399	786	1281		0		

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	32	437	147	59	59	218	60	0
Volume Left	32	0	147	0	0	0	0	0
Volume Right	0	437	0	0	0	0	60	0
cSH	399	786	1281	1700	1700	1700	1700	1700
Volume to Capacity	0.08	0.56	0.11	0.03	0.03	0.13	0.04	0.00
Queue Length 95th (ft)	6	87	10	0	0	0	0	0
Control Delay (s)	14.8	15.2	8.2	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	C	A					
Approach Delay (s)	15.1		4.5			0.0		
Approach LOS	C							

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Morley Corner Site Entrance & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	0	34	0	0	0	7	643	0	0	807	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	37	0	0	0	8	699	0	0	877	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											1076	
pX, platoon unblocked	0.87	0.87	0.87	0.87	0.87		0.87					
vC, conflicting volume	1242	1591	439	1190	1614	349	900			699		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	978	1380	55	918	1406	349	585			699		
tC, single (s)	*5.4	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	100	96	100	100	100	99			100		
cM capacity (veh/h)	316	123	870	187	119	647	857			894		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	70	0	8	349	349	0	0	439	439	23
Volume Left	33	0	8	0	0	0	0	0	0	0
Volume Right	37	0	0	0	0	0	0	0	0	23
cSH	478	1700	857	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.15	0.00	0.01	0.21	0.21	0.00	0.00	0.26	0.26	0.01
Queue Length 95th (ft)	13	0	1	0	0	0	0	0	0	0
Control Delay (s)	13.8	0.0	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A	A							
Approach Delay (s)	13.8	0.0	0.1				0.0			
Approach LOS	B	A								

Intersection Summary				
Average Delay		0.6		
Intersection Capacity Utilization	32.7%		ICU Level of Service	A
Analysis Period (min)		15		

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
7: Waxpool Rd (Rt 625) & RIRO Driveway

Temple Baptist Church

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	603	180	49	0	63
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	655	196	53	0	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			428			
pX, platoon unblocked						
vC, conflicting volume	249				523	98
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	249				523	98
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	93
cM capacity (veh/h)	1314				483	939

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	328	328	98	98	53	68
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	53	68
cSH	1700	1700	1700	1700	1700	939
Volume to Capacity	0.19	0.19	0.06	0.06	0.03	0.07
Queue Length 95th (ft)	0	0	0	0	0	6
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.1
Lane LOS						A
Approach Delay (s)	0.0		0.0			9.1
Approach LOS						A

Intersection Summary				
Average Delay		0.6		
Intersection Capacity Utilization		20.0%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Signalized Intersection Capacity Analysis
1: Farmwell Rd & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	1119	237	111	372	165	137	394	138	570	543	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	3433	1863	1583
Flt Permitted	0.43	1.00	1.00	0.08	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	804	3539	1583	141	3539	1583	1770	3539	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	1216	258	121	404	179	149	428	150	620	590	284
RTOR Reduction (vph)	0	0	127	0	0	103	0	0	121	0	0	111
Lane Group Flow (vph)	148	1216	131	121	404	76	149	428	29	620	590	173
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8			4
Actuated Green, G (s)	91.5	78.7	78.7	88.1	77.0	77.0	13.0	33.5	33.5	39.2	59.7	59.7
Effective Green, g (s)	99.5	82.7	79.7	96.1	81.0	81.0	17.0	37.0	37.0	43.2	63.2	63.2
Actuated g/C Ratio	0.52	0.44	0.42	0.51	0.43	0.43	0.09	0.19	0.19	0.23	0.33	0.33
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	7.0	6.5	6.5
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	506	1540	664	201	1509	675	158	689	308	781	620	527
v/s Ratio Prot	c0.03	c0.34		c0.05	0.11		c0.08	0.12		0.18	c0.32	
v/s Ratio Perm	0.13		0.08	0.26		0.05			0.02			0.11
v/c Ratio	0.29	0.79	0.20	0.60	0.27	0.11	0.94	0.62	0.09	0.79	0.95	0.33
Uniform Delay, d1	24.1	46.2	34.9	35.8	35.3	32.8	86.0	70.1	62.8	69.2	61.9	47.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	4.2	0.7	3.5	0.4	0.3	54.1	1.3	0.0	5.2	24.5	0.1
Delay (s)	24.2	50.4	35.6	39.2	35.7	33.2	140.1	71.3	62.8	74.4	86.4	47.6
Level of Service	C	D	D	D	D	C	F	E	E	E	F	D
Approach Delay (s)		45.6			35.7			83.7			74.0	
Approach LOS		D			D			F			E	

Intersection Summary				
HCM Average Control Delay	59.5	HCM Level of Service	E	
HCM Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	190.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	86.6%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
2: Michener Road & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	37	90	74	24	43	118	505	50	134	664	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1723	1583	1681	1725	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.97	1.00	0.95	0.97	1.00	0.25	1.00	1.00	0.31	1.00	1.00
Satd. Flow (perm)	1681	1723	1583	1681	1725	1583	459	3539	1583	576	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	40	98	80	26	47	128	549	54	146	722	38
RTOR Reduction (vph)	0	0	63	0	0	32	0	0	28	0	0	18
Lane Group Flow (vph)	84	88	35	52	54	15	128	549	26	146	722	20
Turn Type	Split		pt+ov	Split		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	3	3	3 1	4	4	5	1	6	4	5	2	3
Permitted Phases						4	6		6	2		2
Actuated Green, G (s)	10.5	10.5	19.5	6.9	6.9	17.4	30.9	21.9	28.8	33.9	23.4	33.9
Effective Green, g (s)	14.5	14.5	27.5	10.9	10.9	25.4	38.9	25.9	36.8	41.9	27.4	41.9
Actuated g/C Ratio	0.19	0.19	0.35	0.14	0.14	0.33	0.50	0.33	0.47	0.54	0.35	0.54
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	321	560	236	242	578	449	1178	749	533	1246	914
v/s Ratio Prot	0.05	c0.05	0.02	0.03	c0.03	0.00	c0.05	0.16	0.00	c0.05	c0.20	0.00
v/s Ratio Perm						0.00	0.10		0.01	0.10		0.01
v/c Ratio	0.27	0.27	0.06	0.22	0.22	0.03	0.29	0.47	0.03	0.27	0.58	0.02
Uniform Delay, d1	27.1	27.1	16.6	29.7	29.7	17.8	11.1	20.5	11.0	9.6	20.5	8.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.0	0.5	0.5	0.0	0.4	0.3	0.0	0.3	0.7	0.0
Delay (s)	27.6	27.6	16.7	30.2	30.2	17.8	11.5	20.8	11.0	9.9	21.2	8.4
Level of Service	C	C	B	C	C	B	B	C	B	A	C	A
Approach Delay (s)		23.6			26.4			18.4			18.8	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM Average Control Delay	19.9	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.40			
Actuated Cycle Length (s)	77.8	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	45.9%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	89	3	54	10	2	20	3	131	541	12	54	652
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5		6.5	6.5		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95
Frt		1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00		0.96	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1777	1583		1787	1583		1770	3539	1583	1770	3539
Flt Permitted		0.72	1.00		0.81	1.00		0.33	1.00	1.00	0.42	1.00
Satd. Flow (perm)		1347	1583		1511	1583		612	3539	1583	784	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	3	59	11	2	22	3	142	588	13	59	709
RTOR Reduction (vph)	0	0	46	0	0	17	0	0	0	5	0	0
Lane Group Flow (vph)	0	100	13	0	13	5	0	145	588	8	59	709
Turn Type	Perm		Perm	Perm		Perm	Perm	pm+pt		Perm	pm+pt	
Protected Phases		4			8			5	2		1	6
Permitted Phases	4		4	8		8	2	2		2	6	
Actuated Green, G (s)		34.5	34.5		34.5	34.5		109.9	100.1	100.1	102.1	96.2
Effective Green, g (s)		34.5	34.5		34.5	34.5		109.9	100.1	100.1	102.1	96.2
Actuated g/C Ratio		0.22	0.22		0.22	0.22		0.69	0.63	0.63	0.64	0.60
Clearance Time (s)		6.5	6.5		6.5	6.5		6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		290	341		326	341		491	2214	990	537	2128
v/s Ratio Prot								c0.02	0.17		0.00	c0.20
v/s Ratio Perm		c0.07	0.01		0.01	0.00		c0.18		0.01	0.07	
v/c Ratio		0.34	0.04		0.04	0.01		0.30	0.27	0.01	0.11	0.33
Uniform Delay, d1		53.2	49.6		49.6	49.4		9.3	13.4	11.3	10.9	15.9
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		3.2	0.2		0.1	0.0		0.3	0.3	0.0	0.1	0.4
Delay (s)		56.4	49.8		49.7	49.4		9.7	13.7	11.3	10.9	16.3
Level of Service		E	D		D	D		A	B	B	B	B
Approach Delay (s)		54.0			49.5				12.9			15.6
Approach LOS		D			D				B			B

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Volume (vph)	135
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	147
RTOR Reduction (vph)	59
Lane Group Flow (vph)	88
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	96.2
Effective Green, g (s)	96.2
Actuated g/C Ratio	0.60
Clearance Time (s)	6.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	952
v/s Ratio Prot	
v/s Ratio Perm	0.06
v/c Ratio	0.09
Uniform Delay, d1	13.5
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	13.7
Level of Service	B
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: Waxpool Rd (Rt 625) & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	161	394	48	54	152	14	26	510	170	64	603	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583		3485	
Flt Permitted	0.54	1.00	1.00	0.48	1.00	1.00	0.21	1.00	1.00		0.86	
Satd. Flow (perm)	1012	3539	1583	902	3539	1583	396	3539	1583		3011	
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)	161	394	48	54	152	14	26	510	170	64	603	52
RTOR Reduction (vph)	0	0	32	0	0	11	0	0	59	0	4	0
Lane Group Flow (vph)	161	394	16	54	152	3	26	510	111	0	715	0
Turn Type	pm+pt		pm+ov	pm+pt		Perm	pm+pt		pm+ov	Perm		
Protected Phases	7	4	5	3	8		5	2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	25.6	14.6	19.9	18.4	11.0	11.0	35.3	35.3	42.7		24.0	
Effective Green, g (s)	32.0	18.1	25.9	25.4	14.5	14.5	38.3	38.3	49.7		27.0	
Actuated g/C Ratio	0.42	0.24	0.34	0.33	0.19	0.19	0.50	0.50	0.65		0.35	
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5	6.5	6.0	6.0	6.5		6.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	568	840	537	424	673	301	348	1776	1031		1065	
v/s Ratio Prot	c0.05	c0.11	0.00	0.02	0.04		0.01	c0.14	0.02			
v/s Ratio Perm	0.06		0.01	0.02		0.00	0.03		0.05		c0.24	
v/c Ratio	0.28	0.47	0.03	0.13	0.23	0.01	0.07	0.29	0.11		0.67	
Uniform Delay, d1	14.2	25.0	16.8	17.5	26.2	25.1	10.8	11.1	5.0		20.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0		1.3	
Delay (s)	14.3	25.1	16.8	17.6	26.2	25.1	10.8	11.1	5.0		22.2	
Level of Service	B	C	B	B	C	C	B	B	A		C	
Approach Delay (s)		21.6			24.0			9.6			22.2	
Approach LOS		C			C			A			C	

Intersection Summary				
HCM Average Control Delay	18.3	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.49			
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	64.3%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis
5: Waxpool Rd & Faulkner Pkwy

Temple Baptist Church

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	29	402	135	109	0	201	55
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	437	147	118	0	218	60
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)				1219			
pX, platoon unblocked					0.00		
vC, conflicting volume	571	218	278		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	571	218	278		0		
tC, single (s)	6.8	6.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	92	44	89		0		
cM capacity (veh/h)	399	786	1281		0		

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	32	437	147	59	59	218	60	0
Volume Left	32	0	147	0	0	0	0	0
Volume Right	0	437	0	0	0	0	60	0
cSH	399	786	1281	1700	1700	1700	1700	1700
Volume to Capacity	0.08	0.56	0.11	0.03	0.03	0.13	0.04	0.00
Queue Length 95th (ft)	6	87	10	0	0	0	0	0
Control Delay (s)	14.8	15.2	8.2	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	C	A					
Approach Delay (s)	15.1		4.5			0.0		
Approach LOS	C							

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Morley Corner Site Entrance & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	0	34	0	0	0	7	643	0	0	807	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	37	0	0	0	8	699	0	0	877	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								833			1076	
pX, platoon unblocked	0.90	0.90	0.87	0.90	0.90	0.94	0.87			0.94		
vC, conflicting volume	1242	1591	439	1190	1614	349	900			699		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	732	1120	55	674	1145	169	585			543		
tC, single (s)	*5.4	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	96	100	100	100	99			100		
cM capacity (veh/h)	428	183	870	292	177	791	857			957		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	70	0	8	349	349	0	0	439	439	23
Volume Left	33	0	8	0	0	0	0	0	0	0
Volume Right	37	0	0	0	0	0	0	0	0	23
cSH	586	1700	857	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.12	0.00	0.01	0.21	0.21	0.00	0.00	0.26	0.26	0.01
Queue Length 95th (ft)	10	0	1	0	0	0	0	0	0	0
Control Delay (s)	12.0	0.0	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A	A							
Approach Delay (s)	12.0	0.0	0.1				0.0			
Approach LOS	B	A								

Intersection Summary				
Average Delay		0.5		
Intersection Capacity Utilization		32.7%	ICU Level of Service	A
Analysis Period (min)		15		

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
7: Waxpool Rd (Rt 625) & RIRO Driveway

Temple Baptist Church

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	603	180	49	0	63
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	655	196	53	0	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			428			
pX, platoon unblocked						
vC, conflicting volume	249				523	98
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	249				523	98
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	93
cM capacity (veh/h)	1314				483	939

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	328	328	98	98	53	68
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	53	68
cSH	1700	1700	1700	1700	1700	939
Volume to Capacity	0.19	0.19	0.06	0.06	0.03	0.07
Queue Length 95th (ft)	0	0	0	0	0	6
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.1
Lane LOS						A
Approach Delay (s)	0.0		0.0			9.1
Approach LOS						A

Intersection Summary				
Average Delay		0.6		
Intersection Capacity Utilization		20.0%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Signalized Intersection Capacity Analysis
1: Farmwell Rd & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	236	532	247	253	1403	815	275	743	96	317	504	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	3433	1863	1583
Flt Permitted	0.06	1.00	1.00	0.33	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	121	3539	1583	608	3539	1583	1770	3539	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	257	578	268	275	1525	886	299	808	104	345	548	232
RTOR Reduction (vph)	0	0	163	0	0	175	0	0	80	0	0	122
Lane Group Flow (vph)	257	578	105	275	1525	711	299	808	24	345	548	110
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8			4
Actuated Green, G (s)	73.1	57.6	57.6	73.9	58.0	58.0	14.0	30.8	30.8	18.2	35.0	35.0
Effective Green, g (s)	81.1	61.6	58.6	81.9	62.0	62.0	18.0	34.3	34.3	22.2	38.5	38.5
Actuated g/C Ratio	0.54	0.41	0.39	0.55	0.41	0.41	0.12	0.23	0.23	0.15	0.26	0.26
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	7.0	6.5	6.5
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	280	1453	618	486	1463	654	212	809	362	508	478	406
v/s Ratio Prot	c0.12	0.16		0.08	0.43		c0.17	0.23		c0.10	c0.29	
v/s Ratio Perm	0.38		0.07	0.23		c0.45			0.02			0.07
v/c Ratio	0.92	0.40	0.17	0.57	1.04	1.09	1.41	1.00	0.07	0.68	1.15	0.27
Uniform Delay, d1	48.9	31.1	29.8	19.5	44.0	44.0	66.0	57.8	45.3	60.5	55.8	44.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	32.2	0.8	0.6	0.9	35.4	61.3	210.3	31.1	0.0	2.8	88.0	0.1
Delay (s)	81.1	32.0	30.4	20.4	79.4	105.3	276.3	88.9	45.3	63.4	143.7	44.7
Level of Service	F	C	C	C	E	F	F	F	D	E	F	D
Approach Delay (s)		43.0			81.9			131.4			98.7	
Approach LOS		D			F			F			F	

Intersection Summary				
HCM Average Control Delay	87.8	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.08			
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.0	
Intersection Capacity Utilization	107.0%	ICU Level of Service	G	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
2: Michener Road & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	146	30	83	90	126	96	116	870	32	278	602	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1713	1583	1681	1764	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.97	1.00	0.95	1.00	1.00	0.39	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	1681	1713	1583	1681	1764	1583	731	3539	1583	203	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	33	90	98	137	104	126	946	35	302	654	61
RTOR Reduction (vph)	0	0	66	0	0	64	0	0	16	0	0	25
Lane Group Flow (vph)	95	97	24	88	147	40	126	946	19	302	654	36
Turn Type	Split		pt+ov	Split		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	3	3	3 1	4	4	5	1	6	4	5	2	3
Permitted Phases						4	6		6	2		2
Actuated Green, G (s)	12.2	12.2	21.6	15.5	15.5	35.3	45.2	35.8	51.3	62.6	46.2	58.4
Effective Green, g (s)	16.2	16.2	29.6	19.5	19.5	43.3	53.2	39.8	59.3	66.6	50.2	66.4
Actuated g/C Ratio	0.15	0.15	0.27	0.18	0.18	0.39	0.48	0.36	0.53	0.60	0.45	0.60
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	245	249	421	295	309	659	474	1266	843	457	1596	987
v/s Ratio Prot	0.06	c0.06	0.02	0.05	c0.08	0.01	0.03	c0.27	0.00	c0.14	0.18	0.01
v/s Ratio Perm						0.01	0.09		0.01	0.25		0.02
v/c Ratio	0.39	0.39	0.06	0.30	0.48	0.06	0.27	0.75	0.02	0.66	0.41	0.04
Uniform Delay, d1	43.1	43.1	30.4	39.9	41.3	21.3	16.3	31.3	12.3	24.0	20.6	9.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	1.0	0.1	0.6	1.2	0.0	0.3	2.5	0.0	3.6	0.2	0.0
Delay (s)	44.1	44.1	30.5	40.5	42.5	21.3	16.6	33.8	12.3	27.6	20.7	9.3
Level of Service	D	D	C	D	D	C	B	C	B	C	C	A
Approach Delay (s)		39.7			35.5			31.2			22.1	
Approach LOS		D			D			C			C	

Intersection Summary				
HCM Average Control Delay	29.2	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	111.3	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	65.2%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis
3: Red Rum Dr & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	56	4	31	38	3	81	41	898	23	43	676	49
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	61	4	34	41	3	88	45	976	25	47	735	53
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								917				
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	1495	1918	367	1562	1947	488	788			1001		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1311	1786	367	1386	1818	180	788			756		
tC, single (s)	7.5	6.5	6.9	*4.8	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	24	93	95	81	95	88	95			94		
cM capacity (veh/h)	80	64	630	215	61	741	827			758		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	65	34	45	88	45	488	488	25	47	367	367	53
Volume Left	61	0	41	0	45	0	0	0	47	0	0	0
Volume Right	0	34	0	88	0	0	0	25	0	0	0	53
cSH	79	630	182	741	827	1700	1700	1700	758	1700	1700	1700
Volume to Capacity	0.83	0.05	0.25	0.12	0.05	0.29	0.29	0.01	0.06	0.22	0.22	0.03
Queue Length 95th (ft)	104	4	23	10	4	0	0	0	5	0	0	0
Control Delay (s)	147.7	11.0	31.2	10.5	9.6	0.0	0.0	0.0	10.1	0.0	0.0	0.0
Lane LOS	F	B	D	B	A				B			
Approach Delay (s)	101.1		17.5		0.4				0.6			
Approach LOS	F		C									

Intersection Summary			
Average Delay		6.3	
Intersection Capacity Utilization		48.1%	ICU Level of Service
Analysis Period (min)		15	

* User Entered Value

HCM Signalized Intersection Capacity Analysis
4: Waxpool Rd (Rt. 625) & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	204	29	199	340	39	117	779	39	42	510	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583		3392	
Flt Permitted	0.42	1.00	1.00	0.45	1.00	1.00	0.18	1.00	1.00		0.86	
Satd. Flow (perm)	784	3539	1583	839	3539	1583	341	3539	1583		2917	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	157	222	32	216	370	42	127	847	42	46	554	210
RTOR Reduction (vph)	0	0	22	0	0	34	0	0	11	0	22	0
Lane Group Flow (vph)	157	222	10	216	370	8	127	847	31	0	788	0
Turn Type	pm+pt		pm+ov	pm+pt		Perm	pm+pt		pm+ov	Perm		
Protected Phases	7	4	5	3	8		5	2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	20.6	11.3	21.1	25.6	13.8	13.8	46.0	46.0	57.8		30.2	
Effective Green, g (s)	27.6	14.8	27.1	32.6	17.3	17.3	49.0	49.0	64.8		33.2	
Actuated g/C Ratio	0.31	0.17	0.31	0.37	0.20	0.20	0.56	0.56	0.74		0.38	
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5	6.5	6.0	6.0	6.5		6.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	389	595	487	472	695	311	397	1968	1164		1099	
v/s Ratio Prot	0.06	0.06	0.00	c0.08	c0.10		0.05	c0.24	0.00			
v/s Ratio Perm	0.07		0.00	0.09		0.01	0.13		0.01		c0.27	
v/c Ratio	0.40	0.37	0.02	0.46	0.53	0.03	0.32	0.43	0.03		0.72	
Uniform Delay, d1	22.9	32.5	21.3	20.1	31.8	28.6	11.4	11.4	3.1		23.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.3	0.1	0.0	0.3	0.4	0.0	0.2	0.1	0.0		1.9	
Delay (s)	23.1	32.7	21.3	20.3	32.2	28.6	11.6	11.5	3.1		25.3	
Level of Service	C	C	C	C	C	C	B	B	A		C	
Approach Delay (s)		28.1			27.9			11.1			25.3	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	88.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
5: Waxpool Rd & Faulkner Pkwy

Temple Baptist Church

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR		
Lane Configurations									
Volume (veh/h)	81	260	380	290	0	117	50		
Sign Control	Stop			Free		Free			
Grade	0%			0%		0%			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	88	283	413	315	0	127	54		
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type				None		None			
Median storage veh)									
Upstream signal (ft)				1223					
pX, platoon unblocked					0.00				
vC, conflicting volume	1111	127	182		0				
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	1111	127	182		0				
tC, single (s)	6.8	6.9	4.1		0.0				
tC, 2 stage (s)									
tF (s)	3.5	3.3	2.2		0.0				
p0 queue free %	38	69	70		0				
cM capacity (veh/h)	143	899	1391		0				

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	88	283	413	158	158	127	54	0
Volume Left	88	0	413	0	0	0	0	0
Volume Right	0	283	0	0	0	0	54	0
cSH	143	899	1391	1700	1700	1700	1700	1700
Volume to Capacity	0.62	0.31	0.30	0.09	0.09	0.07	0.03	0.00
Queue Length 95th (ft)	82	34	31	0	0	0	0	0
Control Delay (s)	64.1	10.8	8.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	B	A					
Approach Delay (s)	23.5		4.9			0.0		
Approach LOS	C							

Intersection Summary			
Average Delay		9.6	
Intersection Capacity Utilization		38.9%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
6: Morley Corner Site Entrance & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	0	16	0	0	0	33	1001	0	0	751	24
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	0	17	0	0	0	36	1088	0	0	816	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											1076	
pX, platoon unblocked	0.90	0.90	0.90	0.90	0.90		0.90					
vC, conflicting volume	1432	1976	408	1585	2002	544	842			1088		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1259	1863	122	1429	1892	544	604			1088		
tC, single (s)	*5.4	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	98	100	100	100	96			100		
cM capacity (veh/h)	235	62	816	81	60	483	873			637		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	35	0	36	544	544	0	0	408	408	26
Volume Left	17	0	36	0	0	0	0	0	0	0
Volume Right	17	0	0	0	0	0	0	0	0	26
cSH	365	1700	873	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.10	0.00	0.04	0.32	0.32	0.00	0.00	0.24	0.24	0.02
Queue Length 95th (ft)	8	0	3	0	0	0	0	0	0	0
Control Delay (s)	15.9	0.0	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A	A							
Approach Delay (s)	15.9	0.0	0.3				0.0			
Approach LOS	C	A								

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		37.7%	ICU Level of Service A
Analysis Period (min)		15	

* User Entered Value

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	376	633	16	0	37
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	409	688	17	0	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			428			
pX, platoon unblocked	0.92				0.92	0.92
vC, conflicting volume	705				892	344
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	510				713	118
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	95
cM capacity (veh/h)	969				338	840

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	204	204	344	344	17	40
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	17	40
cSH	1700	1700	1700	1700	1700	840
Volume to Capacity	0.12	0.12	0.20	0.20	0.01	0.05
Queue Length 95th (ft)	0	0	0	0	0	4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.5
Lane LOS						A
Approach Delay (s)	0.0		0.0			9.5
Approach LOS						A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: Farmwell Rd & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	236	532	247	253	1403	815	275	743	96	317	504	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	3433	1863	1583
Flt Permitted	0.06	1.00	1.00	0.33	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	121	3539	1583	608	3539	1583	1770	3539	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	257	578	268	275	1525	886	299	808	104	345	548	232
RTOR Reduction (vph)	0	0	163	0	0	175	0	0	80	0	0	122
Lane Group Flow (vph)	257	578	105	275	1525	711	299	808	24	345	548	110
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8			4
Actuated Green, G (s)	73.1	57.6	57.6	73.9	58.0	58.0	14.0	30.8	30.8	18.2	35.0	35.0
Effective Green, g (s)	81.1	61.6	58.6	81.9	62.0	62.0	18.0	34.3	34.3	22.2	38.5	38.5
Actuated g/C Ratio	0.54	0.41	0.39	0.55	0.41	0.41	0.12	0.23	0.23	0.15	0.26	0.26
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	7.0	6.5	6.5
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	280	1453	618	486	1463	654	212	809	362	508	478	406
v/s Ratio Prot	c0.12	0.16		0.08	0.43		c0.17	0.23		c0.10	c0.29	
v/s Ratio Perm	0.38		0.07	0.23		c0.45			0.02			0.07
v/c Ratio	0.92	0.40	0.17	0.57	1.04	1.09	1.41	1.00	0.07	0.68	1.15	0.27
Uniform Delay, d1	48.9	31.1	29.8	19.5	44.0	44.0	66.0	57.8	45.3	60.5	55.8	44.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	32.2	0.8	0.6	0.9	35.4	61.3	210.3	31.1	0.0	2.8	88.0	0.1
Delay (s)	81.1	32.0	30.4	20.4	79.4	105.3	276.3	88.9	45.3	63.4	143.7	44.7
Level of Service	F	C	C	C	E	F	F	F	D	E	F	D
Approach Delay (s)		43.0			81.9			131.4			98.7	
Approach LOS		D			F			F			F	

Intersection Summary				
HCM Average Control Delay	87.8	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.08			
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.0	
Intersection Capacity Utilization	107.0%	ICU Level of Service	G	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
2: Michener Road & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	146	30	83	90	126	96	116	870	32	278	602	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1713	1583	1681	1764	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.97	1.00	0.95	1.00	1.00	0.39	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	1681	1713	1583	1681	1764	1583	731	3539	1583	203	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	33	90	98	137	104	126	946	35	302	654	61
RTOR Reduction (vph)	0	0	66	0	0	64	0	0	16	0	0	25
Lane Group Flow (vph)	95	97	24	88	147	40	126	946	19	302	654	36
Turn Type	Split		pt+ov	Split		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	3	3	3 1	4	4	5	1	6	4	5	2	3
Permitted Phases						4	6		6	2		2
Actuated Green, G (s)	12.2	12.2	21.6	15.5	15.5	35.3	45.2	35.8	51.3	62.6	46.2	58.4
Effective Green, g (s)	16.2	16.2	29.6	19.5	19.5	43.3	53.2	39.8	59.3	66.6	50.2	66.4
Actuated g/C Ratio	0.15	0.15	0.27	0.18	0.18	0.39	0.48	0.36	0.53	0.60	0.45	0.60
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	245	249	421	295	309	659	474	1266	843	457	1596	987
v/s Ratio Prot	0.06	c0.06	0.02	0.05	c0.08	0.01	0.03	c0.27	0.00	c0.14	0.18	0.01
v/s Ratio Perm						0.01	0.09		0.01	0.25		0.02
v/c Ratio	0.39	0.39	0.06	0.30	0.48	0.06	0.27	0.75	0.02	0.66	0.41	0.04
Uniform Delay, d1	43.1	43.1	30.4	39.9	41.3	21.3	16.3	31.3	12.3	24.0	20.6	9.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	1.0	0.1	0.6	1.2	0.0	0.3	2.5	0.0	3.6	0.2	0.0
Delay (s)	44.1	44.1	30.5	40.5	42.5	21.3	16.6	33.8	12.3	27.6	20.7	9.3
Level of Service	D	D	C	D	D	C	B	C	B	C	C	A
Approach Delay (s)		39.7			35.5			31.2			22.1	
Approach LOS		D			D			C			C	

Intersection Summary				
HCM Average Control Delay	29.2	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	111.3	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	65.2%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
3: Red Rum Dr & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	4	31	38	3	81	41	898	23	43	676	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1779	1583		1780	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.72	1.00		0.73	1.00	0.33	1.00	1.00	0.24	1.00	1.00
Satd. Flow (perm)		1334	1583		1358	1583	616	3539	1583	438	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	4	34	41	3	88	45	976	25	47	735	52
RTOR Reduction (vph)	0	0	26	0	0	67	0	0	10	0	0	21
Lane Group Flow (vph)	0	65	8	0	44	21	45	976	15	47	735	31
Turn Type	Perm		Perm	Perm		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)		38.5	38.5		38.5	38.5	101.9	96.2	96.2	102.1	96.3	96.3
Effective Green, g (s)		38.5	38.5		38.5	38.5	101.9	96.2	96.2	102.1	96.3	96.3
Actuated g/C Ratio		0.24	0.24		0.24	0.24	0.64	0.60	0.60	0.64	0.60	0.60
Clearance Time (s)		6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		321	381		327	381	433	2128	952	328	2130	953
v/s Ratio Prot							0.00	c0.28		c0.01	0.21	
v/s Ratio Perm		c0.05	0.01		0.03	0.01	0.06		0.01	0.09		0.02
v/c Ratio		0.20	0.02		0.13	0.06	0.10	0.46	0.02	0.14	0.35	0.03
Uniform Delay, d1		48.5	46.4		47.7	46.8	11.2	17.6	12.8	12.0	16.0	12.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.4	0.1		0.2	0.1	0.1	0.7	0.0	0.2	0.4	0.1
Delay (s)		49.9	46.5		47.9	46.8	11.3	18.3	12.9	12.2	16.4	13.0
Level of Service		D	D		D	D	B	B	B	B	B	B
Approach Delay (s)		48.7			47.2			17.8			16.0	
Approach LOS		D			D			B			B	

Intersection Summary				
HCM Average Control Delay	20.4	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.38			
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	19.5	
Intersection Capacity Utilization	54.4%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
4: Waxpool Rd (Rt. 625) & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	204	29	199	340	39	117	779	39	42	510	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583		3392	
Flt Permitted	0.42	1.00	1.00	0.45	1.00	1.00	0.18	1.00	1.00		0.86	
Satd. Flow (perm)	784	3539	1583	839	3539	1583	341	3539	1583		2917	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	157	222	32	216	370	42	127	847	42	46	554	210
RTOR Reduction (vph)	0	0	22	0	0	34	0	0	11	0	22	0
Lane Group Flow (vph)	157	222	10	216	370	8	127	847	31	0	788	0
Turn Type	pm+pt		pm+ov	pm+pt		Perm	pm+pt		pm+ov	Perm		
Protected Phases	7	4	5	3	8		5	2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	20.6	11.3	21.1	25.6	13.8	13.8	46.0	46.0	57.8		30.2	
Effective Green, g (s)	27.6	14.8	27.1	32.6	17.3	17.3	49.0	49.0	64.8		33.2	
Actuated g/C Ratio	0.31	0.17	0.31	0.37	0.20	0.20	0.56	0.56	0.74		0.38	
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5	6.5	6.0	6.0	6.5		6.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	389	595	487	472	695	311	397	1968	1164		1099	
v/s Ratio Prot	0.06	0.06	0.00	c0.08	c0.10		0.05	c0.24	0.00			
v/s Ratio Perm	0.07		0.00	0.09		0.01	0.13		0.01		c0.27	
v/c Ratio	0.40	0.37	0.02	0.46	0.53	0.03	0.32	0.43	0.03		0.72	
Uniform Delay, d1	22.9	32.5	21.3	20.1	31.8	28.6	11.4	11.4	3.1		23.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.3	0.1	0.0	0.3	0.4	0.0	0.2	0.1	0.0		1.9	
Delay (s)	23.1	32.7	21.3	20.3	32.2	28.6	11.6	11.5	3.1		25.3	
Level of Service	C	C	C	C	C	C	B	B	A		C	
Approach Delay (s)		28.1			27.9			11.1			25.3	
Approach LOS		C			C			B			C	

Intersection Summary				
HCM Average Control Delay	21.2	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.60			
Actuated Cycle Length (s)	88.1	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	73.7%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis
5: Waxpool Rd & Faulkner Pkwy

Temple Baptist Church

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	81	260	380	290	0	117	50
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	88	283	413	315	0	127	54
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)				1223			
pX, platoon unblocked					0.00		
vC, conflicting volume	1111	127	182		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1111	127	182		0		
tC, single (s)	6.8	6.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	38	69	70		0		
cM capacity (veh/h)	143	899	1391		0		

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	88	283	413	158	158	127	54	0
Volume Left	88	0	413	0	0	0	0	0
Volume Right	0	283	0	0	0	0	54	0
cSH	143	899	1391	1700	1700	1700	1700	1700
Volume to Capacity	0.62	0.31	0.30	0.09	0.09	0.07	0.03	0.00
Queue Length 95th (ft)	82	34	31	0	0	0	0	0
Control Delay (s)	64.1	10.8	8.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	B	A					
Approach Delay (s)	23.5		4.9			0.0		
Approach LOS	C							

Intersection Summary			
Average Delay		9.6	
Intersection Capacity Utilization		38.9%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
6: Morley Corner Site Entrance & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	0	16	0	0	0	33	1001	0	0	751	24
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	0	17	0	0	0	36	1088	0	0	816	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								833			1076	
pX, platoon unblocked	0.90	0.90	0.90	0.90	0.90	0.85	0.90			0.85		
vC, conflicting volume	1432	1976	408	1585	2002	544	842			1088		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	760	1365	122	930	1394	110	604			750		
tC, single (s)	*5.4	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	98	100	100	100	96			100		
cM capacity (veh/h)	404	126	816	189	121	784	873			726		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	35	0	36	544	544	0	0	408	408	26
Volume Left	17	0	36	0	0	0	0	0	0	0
Volume Right	17	0	0	0	0	0	0	0	0	26
cSH	540	1700	873	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.06	0.00	0.04	0.32	0.32	0.00	0.00	0.24	0.24	0.02
Queue Length 95th (ft)	5	0	3	0	0	0	0	0	0	0
Control Delay (s)	12.1	0.0	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A	A							
Approach Delay (s)	12.1	0.0	0.3				0.0			
Approach LOS	B	A								

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		37.7%	ICU Level of Service A
Analysis Period (min)		15	

* User Entered Value

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	376	633	16	0	37
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	409	688	17	0	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			428			
pX, platoon unblocked	0.92				0.92	0.92
vC, conflicting volume	705				892	344
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	510				713	118
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	95
cM capacity (veh/h)	969				338	840

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	204	204	344	344	17	40
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	17	40
cSH	1700	1700	1700	1700	1700	840
Volume to Capacity	0.12	0.12	0.20	0.20	0.01	0.05
Queue Length 95th (ft)	0	0	0	0	0	4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.5
Lane LOS						A
Approach Delay (s)	0.0		0.0			9.5
Approach LOS						A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Red Rum Dr & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	210	4	127	2	3	0	208	423	4	4	437	215
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	228	4	138	2	3	0	226	460	4	4	475	234
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								917				
pX, platoon unblocked												
vC, conflicting volume	1167	1400	238	1298	1629	230	709			464		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1167	1400	238	1298	1629	230	709			464		
tC, single (s)	7.5	6.5	6.9	*4.8	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	96	82	99	96	100	74			100		
cM capacity (veh/h)	115	103	764	203	75	773	886			1093		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	233	138	5	0	226	230	230	4	4	238	238	234
Volume Left	228	0	2	0	226	0	0	0	4	0	0	0
Volume Right	0	138	0	0	0	0	0	4	0	0	0	234
cSH	115	764	100	1700	886	1700	1700	1700	1093	1700	1700	1700
Volume to Capacity	2.02	0.18	0.05	0.00	0.26	0.14	0.14	0.00	0.00	0.14	0.14	0.14
Queue Length 95th (ft)	481	16	4	0	25	0	0	0	0	0	0	0
Control Delay (s)	551.2	10.7	43.0	0.0	10.4	0.0	0.0	0.0	8.3	0.0	0.0	0.0
Lane LOS	F	B	E	A	B				A			
Approach Delay (s)	349.9		43.0		3.4				0.1			
Approach LOS	F		E									

Intersection Summary				
Average Delay		74.4		
Intersection Capacity Utilization		52.1%	ICU Level of Service	A
Analysis Period (min)		15		

* User Entered Value

HCM Signalized Intersection Capacity Analysis
4: Waxpool Rd (Rt. 625) & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	236	282	19	43	209	9	37	390	76	65	433	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583		3456	
Flt Permitted	0.46	1.00	1.00	0.56	1.00	1.00	0.23	1.00	1.00		0.85	
Satd. Flow (perm)	864	3539	1583	1052	3539	1583	438	3539	1583		2949	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	257	307	21	47	227	10	40	424	83	71	471	74
RTOR Reduction (vph)	0	0	12	0	0	8	0	0	36	0	7	0
Lane Group Flow (vph)	257	307	9	47	227	2	40	424	47	0	609	0
Turn Type	pm+pt		pm+ov	pm+pt		Perm	pm+pt		pm+ov	Perm		
Protected Phases	7	4	5	3	8		5	2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	33.7	22.0	27.5	17.5	12.3	12.3	32.9	32.9	38.1		21.4	
Effective Green, g (s)	37.2	25.5	33.5	24.5	15.8	15.8	35.9	35.9	45.1		24.4	
Actuated g/C Ratio	0.47	0.32	0.42	0.31	0.20	0.20	0.45	0.45	0.57		0.31	
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5	6.5	6.0	6.0	6.5		6.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	617	1141	670	405	707	316	342	1606	903		910	
v/s Ratio Prot	c0.10	0.09	0.00	0.01	0.06		0.01	c0.12	0.01			
v/s Ratio Perm	c0.10		0.00	0.02		0.00	0.04		0.02		c0.21	
v/c Ratio	0.42	0.27	0.01	0.12	0.32	0.01	0.12	0.26	0.05		0.67	
Uniform Delay, d1	13.1	19.9	13.2	19.4	27.1	25.4	13.0	13.4	7.5		23.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.2	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0		1.5	
Delay (s)	13.3	19.9	13.2	19.4	27.2	25.4	13.1	13.4	7.5		25.3	
Level of Service	B	B	B	B	C	C	B	B	A		C	
Approach Delay (s)		16.8			25.8			12.5			25.3	
Approach LOS		B			C			B			C	

Intersection Summary				
HCM Average Control Delay		19.5	HCM Level of Service	B
HCM Volume to Capacity ratio		0.49		
Actuated Cycle Length (s)		79.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization		60.8%	ICU Level of Service	B
Analysis Period (min)		15		
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis
6: Morley Corner Site Entrance & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	41	0	27	0	0	0	25	607	0	0	629	41
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	0	29	0	0	0	27	660	0	0	684	45
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											1076	
pX, platoon unblocked	0.99	0.99	0.99	0.99	0.99		0.99					
vC, conflicting volume	1068	1398	342	1085	1442	330	728			660		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1041	1375	304	1058	1420	330	696			660		
tC, single (s)	*5.8	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	85	100	96	100	100	100	97			100		
cM capacity (veh/h)	293	138	682	165	129	666	883			924		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	74	0	27	330	330	0	0	342	342	45
Volume Left	45	0	27	0	0	0	0	0	0	0
Volume Right	29	0	0	0	0	0	0	0	0	45
cSH	379	1700	883	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.19	0.00	0.03	0.19	0.19	0.00	0.00	0.20	0.20	0.03
Queue Length 95th (ft)	18	0	2	0	0	0	0	0	0	0
Control Delay (s)	16.8	0.0	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A	A							
Approach Delay (s)	16.8	0.0	0.4				0.0			
Approach LOS	C	A								

Intersection Summary				
Average Delay		1.0		
Intersection Capacity Utilization		31.4%	ICU Level of Service	A
Analysis Period (min)		15		

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
7: Waxpool Rd (Rt. 625) & RIRO Driveway

Temple Baptist Church

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	537	233	79	0	152
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	584	253	86	0	165
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			428			
pX, platoon unblocked						
vC, conflicting volume	339				545	127
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	339				545	127
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	82
cM capacity (veh/h)	1217				468	900

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	292	292	127	127	86	165
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	86	165
cSH	1700	1700	1700	1700	1700	900
Volume to Capacity	0.17	0.17	0.07	0.07	0.05	0.18
Queue Length 95th (ft)	0	0	0	0	0	17
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.9
Lane LOS						A
Approach Delay (s)	0.0		0.0			9.9
Approach LOS						A

Intersection Summary				
Average Delay		1.5		
Intersection Capacity Utilization		22.5%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Signalized Intersection Capacity Analysis
3: Red Rum Dr & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	210	4	127	2	3	0	208	423	4	4	437	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5		6.5		6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1776	1583		1826		1770	3539	1583	1770	3539	1583
Flt Permitted		0.73	1.00		0.93		0.39	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)		1354	1583		1736		732	3539	1583	908	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	4	138	2	3	0	226	460	4	4	475	234
RTOR Reduction (vph)	0	0	92	0	0	0	0	0	2	0	0	129
Lane Group Flow (vph)	0	232	46	0	5	0	226	460	2	4	475	105
Turn Type	Perm		Perm	Perm		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)		53.5	53.5		53.5		93.5	85.8	85.8	72.9	71.7	71.7
Effective Green, g (s)		53.5	53.5		53.5		93.5	85.8	85.8	72.9	71.7	71.7
Actuated g/C Ratio		0.33	0.33		0.33		0.58	0.54	0.54	0.46	0.45	0.45
Clearance Time (s)		6.5	6.5		6.5		6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		453	529		580		527	1898	849	420	1586	709
v/s Ratio Prot							c0.04	0.13		0.00	0.13	
v/s Ratio Perm		c0.17	0.03		0.00		c0.21		0.00	0.00		0.07
v/c Ratio		0.51	0.09		0.01		0.43	0.24	0.00	0.01	0.30	0.15
Uniform Delay, d1		42.8	36.5		35.5		16.7	19.8	17.2	23.8	28.1	26.1
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		4.1	0.3		0.0		0.6	0.3	0.0	0.0	0.5	0.4
Delay (s)		46.9	36.8		35.6		17.3	20.1	17.2	23.8	28.6	26.5
Level of Service		D	D		D		B	C	B	C	C	C
Approach Delay (s)		43.1			35.6			19.1			27.9	
Approach LOS		D			D			B			C	

Intersection Summary				
HCM Average Control Delay	27.7	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.45			
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	13.0	
Intersection Capacity Utilization	58.4%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
4: Waxpool Rd (Rt. 625) & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	236	282	19	43	209	9	37	390	76	65	433	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583		3456	
Flt Permitted	0.46	1.00	1.00	0.56	1.00	1.00	0.23	1.00	1.00		0.85	
Satd. Flow (perm)	864	3539	1583	1052	3539	1583	438	3539	1583		2949	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	257	307	21	47	227	10	40	424	83	71	471	74
RTOR Reduction (vph)	0	0	12	0	0	8	0	0	36	0	7	0
Lane Group Flow (vph)	257	307	9	47	227	2	40	424	47	0	609	0
Turn Type	pm+pt		pm+ov	pm+pt		Perm	pm+pt		pm+ov	Perm		
Protected Phases	7	4	5	3	8		5	2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	33.7	22.0	27.5	17.5	12.3	12.3	32.9	32.9	38.1		21.4	
Effective Green, g (s)	37.2	25.5	33.5	24.5	15.8	15.8	35.9	35.9	45.1		24.4	
Actuated g/C Ratio	0.47	0.32	0.42	0.31	0.20	0.20	0.45	0.45	0.57		0.31	
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5	6.5	6.0	6.0	6.5		6.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)	617	1141	670	405	707	316	342	1606	903		910	
v/s Ratio Prot	c0.10	0.09	0.00	0.01	0.06		0.01	c0.12	0.01			
v/s Ratio Perm	c0.10		0.00	0.02		0.00	0.04		0.02		c0.21	
v/c Ratio	0.42	0.27	0.01	0.12	0.32	0.01	0.12	0.26	0.05		0.67	
Uniform Delay, d1	13.1	19.9	13.2	19.4	27.1	25.4	13.0	13.4	7.5		23.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.2	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0		1.5	
Delay (s)	13.3	19.9	13.2	19.4	27.2	25.4	13.1	13.4	7.5		25.3	
Level of Service	B	B	B	B	C	C	B	B	A		C	
Approach Delay (s)		16.8			25.8			12.5			25.3	
Approach LOS		B			C			B			C	

Intersection Summary				
HCM Average Control Delay	19.5	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.49			
Actuated Cycle Length (s)	79.1	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	60.8%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis
6: Morley Corner Site Entrance & Ashburn Village Boulevard

Temple Baptist Church

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	41	0	27	0	0	0	25	607	0	0	629	41
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	0	29	0	0	0	27	660	0	0	684	45
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								833			1076	
pX, platoon unblocked	0.95	0.95	0.99	0.95	0.95	0.95	0.99			0.95		
vC, conflicting volume	1068	1398	342	1085	1442	330	728			660		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	909	1255	304	927	1301	180	696			529		
tC, single (s)	*5.8	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	100	96	100	100	100	97			100		
cM capacity (veh/h)	333	158	682	199	148	787	883			980		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	74	0	27	330	330	0	0	342	342	45
Volume Left	45	0	27	0	0	0	0	0	0	0
Volume Right	29	0	0	0	0	0	0	0	0	45
cSH	417	1700	883	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.18	0.00	0.03	0.19	0.19	0.00	0.00	0.20	0.20	0.03
Queue Length 95th (ft)	16	0	2	0	0	0	0	0	0	0
Control Delay (s)	15.5	0.0	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A	A							
Approach Delay (s)	15.5	0.0	0.4				0.0			
Approach LOS	C	A								

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization		31.4%	ICU Level of Service	A
Analysis Period (min)		15		

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
7: Waxpool Rd (Rt. 625) & RIRO Driveway

Temple Baptist Church

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	537	233	79	0	152
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	584	253	86	0	165
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			428			
pX, platoon unblocked						
vC, conflicting volume	339				545	127
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	339				545	127
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	82
cM capacity (veh/h)	1217				468	900

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	292	292	127	127	86	165
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	86	165
cSH	1700	1700	1700	1700	1700	900
Volume to Capacity	0.17	0.17	0.07	0.07	0.05	0.18
Queue Length 95th (ft)	0	0	0	0	0	17
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.9
Lane LOS						A
Approach Delay (s)	0.0		0.0			9.9
Approach LOS						A

Intersection Summary				
Average Delay		1.5		
Intersection Capacity Utilization		22.5%	ICU Level of Service	A
Analysis Period (min)		15		

APPENDIX G

BACKGROUND DEVELOPMENTS

Trip Generation for Background Developments

- Ryan Park Center
- Morley Corner Residential Development
- Loudoun Station (Sunday)

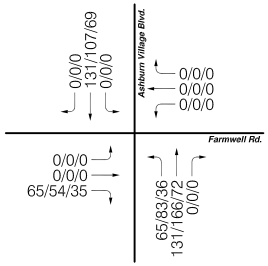
Land Use	ITE Code	Size		Weekday AM Peak Hour In	Weekday AM Peak Hour Out	Weekday AM Peak Hour Total	Weekday PM Peak Hour In	Weekday PM Peak Hour Out	Weekday PM Peak Hour Total	Weekday Daily Total	Weekend Sunday Peak Hour In	Weekend Sunday Peak Hour Out	Weekend Sunday Peak Hour Total	Weekend Daily Total
Ryan Park Center														
Residential														
Condominium/Townhouse	230	117	DU	11	48	59	47	22	69	738	38	39	77	723
Ryan Park Center Total				***11***	***48***	***59***	***47***	***22***	***69***	***738***	***38***	***39***	***77***	***723***
Morley Corner														
Residential														
Condominium/Townhouse	230	128	DU	11	52	63	50	24	74	798	39	41	79	758
Morley Corner Total				***11***	***52***	***63***	***50***	***24***	***74***	***798***	***39***	***41***	***79***	***758***

Loudoun Station				**Sunday Peak Period**		
	ITE Code	Size		In	Out	Total
General Office Total	710	150	ksf	**9**	**8**	**17**
Apartments	220	484	DU	123	124	247
Internal Synergy				*-38*	*-36*	*-74*
Residential Total with Reductions				***85***	***88***	***173***
Shopping Center	820	400	ksf	612	636	1248
High Turnover Sit Down Restaurant	932	15	ksf	153	124	277
Retail Total				765	760	1525
Internal Synergy				*-53*	*-25*	*-78*
Pass-by	15%			*-115*	*-114*	*-229*
Retail Total with Reductions				***597***	***621***	***1218***
Total Trip Gen				***691***	***717***	***1408***

FILE PATH: P:/
DATE LAST MODIFIED:

Study Area

Intersection # 1



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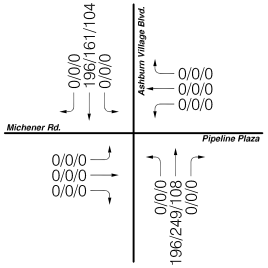

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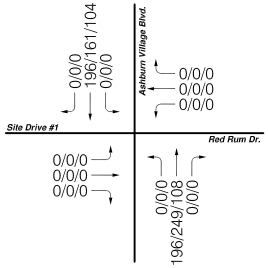

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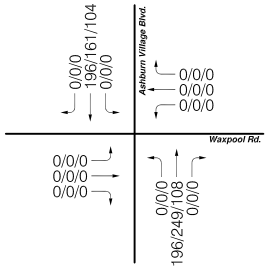

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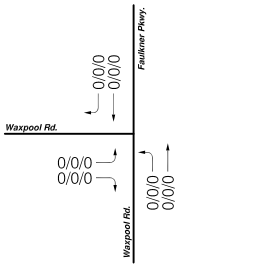

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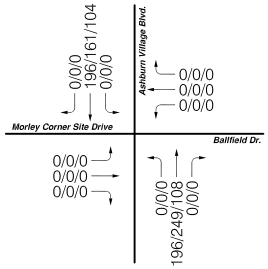

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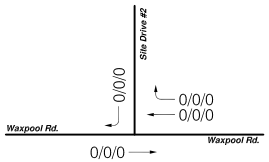


Legend

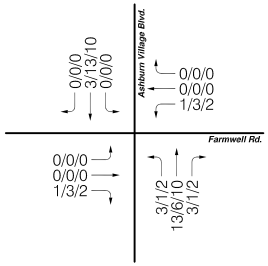
(Only intersections 3,4,6 &7 were analyzed on Sunday, per scoping meeting notes.)*

Appendix G-1
Background Development Volumes
Loudoun Station

FILE PATH: P:/
DATE LAST MODIFIED:

Study Area

Intersection # 1



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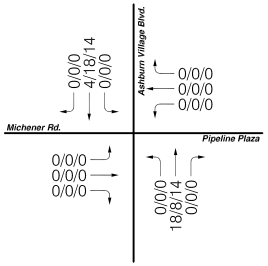

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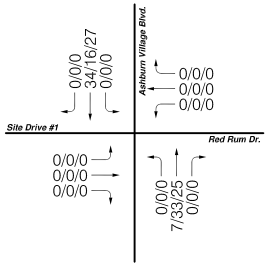

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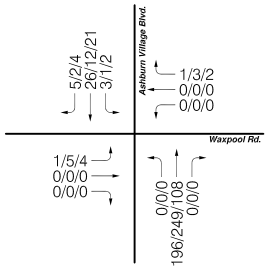

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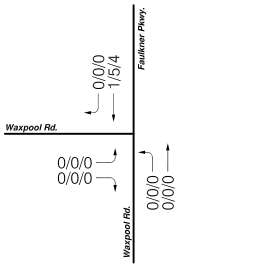

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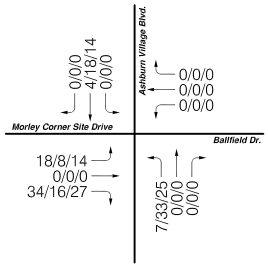

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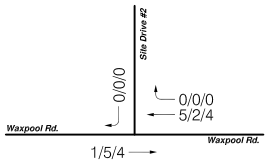


Legend

AM/PM/SUN
AM/PM/SUN*
AM/PM/SUN

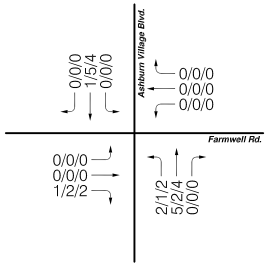
(Only intersections 3,4,6 &7 were analyzed on Sunday, per scoping meeting notes.)*

Appendix G-2
Background Development Volumes
Morley Corner

FILE PATH: P:/
DATE LAST MODIFIED:

Study Area

Intersection # 1



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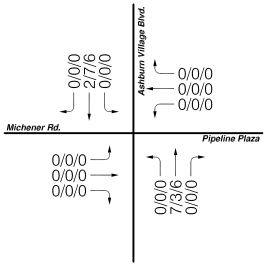

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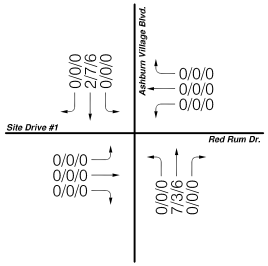

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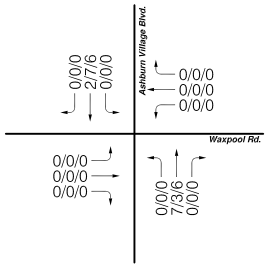
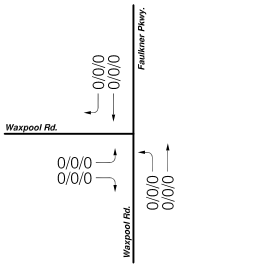
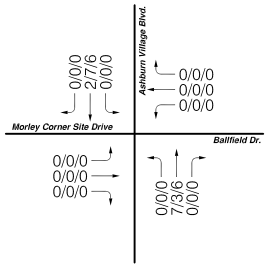


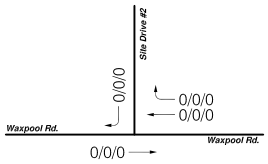
Intersection # 5



Intersection # 6



Intersection # 7*



Legend

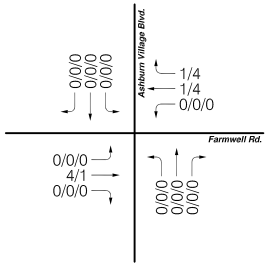
(Only intersections 3,4,6 &7 were analyzed on Sunday, per scoping meeting notes.)*

Appendix G-3
Background Development Volumes
Ryan Park Center

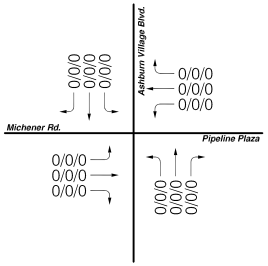
FILE PATH: P:/
DATE LAST MODIFIED:

Study Area

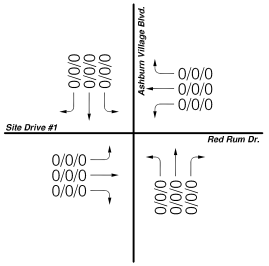
*Intersection # 1



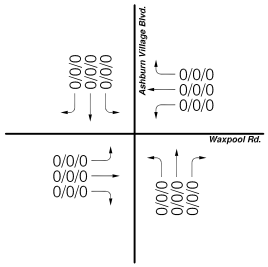
Intersection # 2



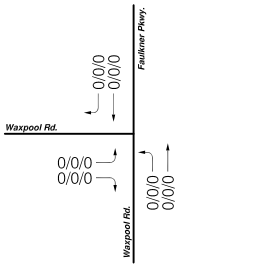
Intersection # 3*



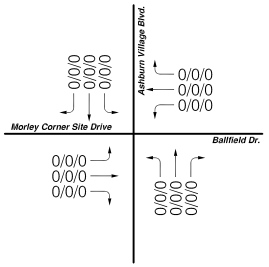
Intersection # 4*



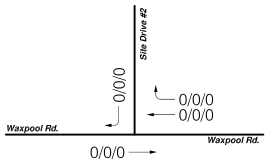
Intersection # 5



Intersection # 6



Intersection # 7*



Legend

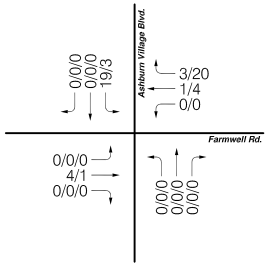
(Only intersections 3,4,6 &7 were analyzed on Sunday, per scoping meeting notes; Sunday volumes not shown since movements do not affect intersections analyzed for Sunday Peak Period.)*

Appendix G-4
Background Development Volumes
Beaumeade

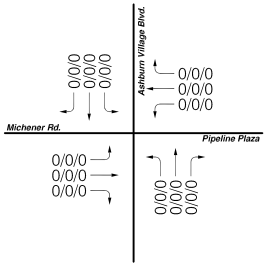
FILE PATH: P:/
DATE LAST MODIFIED:

Study Area

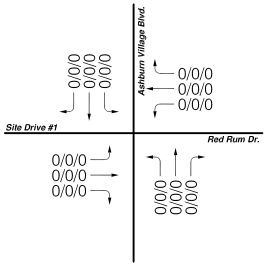
*Intersection # 1



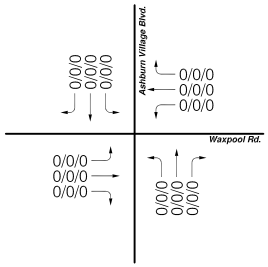
Intersection # 2



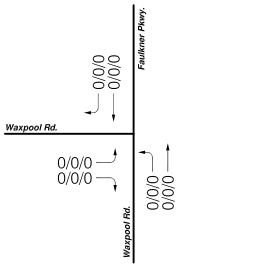
Intersection # 3*



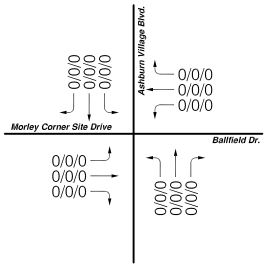
Intersection # 4*



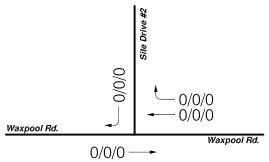
Intersection # 5



Intersection # 6



Intersection # 7*



Legend

(Only intersections 3,4,6 &7 were analyzed on Sunday, per scoping meeting notes; Sunday volumes not shown since movements do not affect intersections analyzed for Sunday Peak Period.)*

Appendix G-5
Background Development Volumes
Ashburn Corporate Center