

APPENDIX A SCOPING MATERIALS

Frederick County
Planning & Permitting Division

**DRAFT TIA Scoping Proposal
Knowledge Farms MXD**

1. LOCATION: Southwest side of MD 355, with site access opposite Campus Drive
2. EXISTING USE: Built: 35,000 sq ft multi-story mixed use building – ORI
Approved: 140,000 sq ft office (including 35,000 sf existing)
3. PROPOSED USE:
 - a. 35,000 sq ft of existing office to remain
 - b. Up to 220 Residential Dwelling Units
 - c. Up to 50,000 sq ft of Commercial Use
4. CIP/CTP ASSUMED IMPROVEMENTS:
 - a) MD 355/Dr Perry Signal and Turn lane additions (currently design and R/W only but signal is funded)
5. OTHER IMPROVEMENTS: TBD County
 - a) Eastbound MD 80: 2nd thru lane from Campus Drive thru Carriage Hill Drive
6. BACKGROUND GROWTH & DEVELOPMENT: Increase arterial flows 1% per year for 5 years based on 5 year life of preliminary plan of subdivision. Account for the following projects:
 - a. Unbuilt projects by the Monocacy Land Company (Including the Raystock Addition and latest commercial and active adult proposals)
 - b. Unbuilt Landsdale PUD
 - c. Unused trips from Urbana Commons
 - d. Unused trips from Urbana Village Center
 - e. YMCA development (YMCA & medical office)
7. EXISTING TRAFFIC: Traffic counts less than two years old may be used or older counts can be factored with 1% annual growth. New counts may be collected and adjusted accordingly based on the availability of existing pre-pandemic counts for comparison.
8. TRIP GENERATION: ITE Rates from the 10th Edition will be used for all uses. The overall site, with existing office uses, would generate approximately 256 AM and 303 PM peak hour trips. A full breakdown of the trip generation is provided below.

Table 6-1

Knowledge Farms

Trip Generation Comparison ⁽¹⁾

Development/Land Use	ITE Land			AM Peak Hour			PM Peak Hour			ADT
	Use Code	Size	Units	In	Out	Total	In	Out	Total	
<u>Existing/Approved Conditions</u>										
(The site is approved for up to 140,000 SF of Office uses, 35,000 SF of which is built)										
Existing Office Building		35,000	SF							
Remaining Approved but Unbuilt Office		105,000	SF							
Subtotal Existing/Approved Office	ITE 710	140,000	SF	137	22	159	25	132	157	1,471
<u>Proposed Site Development Plan</u>										
Existing Office Building	ITE 710	35,000	SF	52	8	60	7	35	42	384
Proposed Residential Use ⁽²⁾	ITE 252	220	DU	25	50	75	54	35	89	1,126
Proposed Commercial Use ^{(3) (4)}	ITE 720	50,000	SF	94	27	121	48	124	172	1,834
Subtotal Existing with Proposed				171	85	256	109	194	303	3,344
Total New (35,000 SF Existing Excluded)				119	77	196	102	159	261	2,960
Net Additional Site Trips: Proposed vs. Approved				34	63	97	84	62	146	1,873

Notes:

(1) Based on rates and equations from ITE's Trip Generation, 10th Edition.

(2) ITE Land Use, Senior Adult Housing - Multifamily (252), was used to determine vehicle trips for residential use.

(3) ITE Land Use, Medical-Dental Office Building (720), was used to determine vehicle trips for commercial use.

(4) Land Use Subcategory, Stand-Alone, was used for Medical-Dental Office Building.

9. TRIP DISTRIBUTION: (trip assignments at discretion of TE consultant):

- a. MD 80: west of Urbana Pike – 45%
- b. MD 80: east of Campus Drive – 30%
- c. MD 355/Urbana Pike: north of MD 80 – 15%
- d. MD 355: South of Campus Drive – 10%

10. ANALYSIS: (traditional weekday am and pm peak hours)

- a. CLV (SHA Method) & 95% Queues
 - i. MD 80/Urbana Pike
 - ii. MD 80/MD 355
 - iii. MD 80/Campus Dr
 - iv. MD 355/Thornapple/Campus (signal warranted in near future)
 - v. MD 80/I-270 NB Ramps
- b. HCM Un-signalized Analysis
 - i. MD 355/Thornapple/Campus
 - ii. MD 355/Urbana Pike (South)
 - iii. MD 355/Urbana Pkwy
- c. Roundabout Analysis
 - i. MD 355/Sugarloaf Pkwy
 - ii. MD 80/Sugarloaf Pkwy
- d. Queuing Analysis per SHA procedures

Mark Mishler

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 - b. Up to 220 Detached Senior Adult Housing Units
 - c. Up to 65,000 sq ft of Self Storage
 - d. Up to 50,000 sq ft of Medical/Dental Office
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 - a. Unbuilt projects by the Monocacy Land Company (Including the Raystock Addition and latest commercial and active adult proposals)
 - b. Unbuilt Landsdale PUD
 - c. Unused trips from Urbana Commons
 - d. Unused trips from Urbana Village Center
 - e. YMCA development (YMCA & medical office)
7. EXISTING TRAFFIC: Traffic counts less than two years old may be used or older counts can be factored with 3% annual growth. New counts may be collected and adjusted accordingly based on the availability of existing pre-pandemic counts for comparison (SHA/County/Consultant discussion if necessary).
8. TRIP GENERATION: ITE Rates from the 10th Edition will be used for all uses. The overall site, with existing office uses, would generate approximately 263 AM and 315 PM peak hour trips. A full breakdown of the trip generation is provided below in Table 1.

Appendix A: Scoping Materials

Table 1

Trip Generation Comparison

Development/Land Use	Rate	Size	Units	AM Peak Hour			PM Peak Hour			ADT
	Source			In	Out	Total	In	Out	Total	
<u>Existing/Approved Conditions</u>										
(The site is approved for up to 140,000 SF of Office uses, 35,000 SF of which is built)										
Existing Office Building		35,000	SF							
Remaining Approved but Unbuilt Office		105,000	SF							
Subtotal Existing/Approved Office	ITE 710	140,000	SF	137	22	159	25	132	157	1,471
<u>Proposed Site Development Plan</u>										
Existing Office Building	ITE 710	35,000	SF	52	8	60	7	35	42	384
Proposed Senior Adult Housing - Attached	ITE 252	220	DU	25	50	75	54	35	89	1,126
Proposed Self Storage	ITE 151	65,000	SF	4	3	7	6	6	12	99
Proposed Medical/Dental Office Building	ITE 720	50,000	SF	94	27	121	48	124	172	1,834
Subtotal Existing with Proposed				175	88	263	115	200	315	3,443
Total New (35,000 SF Existing Excluded)				123	80	203	108	165	273	3,059
Net Additional Site Trips: Proposed vs. Approved				38	66	104	90	68	158	1,972

Notes: (1) Based on rates and equations from ITE's Trip Generation, 10th Edition.

9. TRIP DISTRIBUTION: (trip assignments to be discussed with SHA/TE consultant):
 - a. MD 80: west of Urbana Pike – 45%
 - b. MD 80: east of Campus Drive – 30%
 - c. MD 355/Urbana Pike: north of MD 80 – 15%
 - d. MD 355: South of Campus Drive – 10%

10. ANALYSIS: (traditional weekday am and pm peak hours)
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APPENDIX B TRAFFIC COUNT DATA

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - All Vehicles

PROJECT: YMCA Urbana W+A JOB NO: 7510 INTERSECTION: MD Route 80 & Urbana Pike LOCATION: Frederick County,MD						DATE: 4/25/2018 DAY: Wednesday WEATHER: clear COUNTED BY: Mure & Anita INPUTED BY: agan						SOUTHBOUND ROAD: Urbana Pike NORTHBOUND ROAD: Urbana Pike WESTBOUND ROAD: Fingerboard Road 80 EASTBOUND ROAD: Fingerboard Road 80											
Time Period	Southbound Urbana Pike					Westbound Fingerboard Road 80					Northbound Urbana Pike					Eastbound Fingerboard Road 80					North & South	East & West	Total
	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF			
AM 15 Minute Volumes																							
6:00 AM - 6:15 AM	0	8	8	16		5	86	1	92		0	2	7	9		22	20	5	47		25	139	164
6:15 AM - 6:30 AM	0	18	8	26		9	105	3	117		0	1	8	9		20	28	5	53		35	170	205
6:30 AM - 6:45 AM	3	17	9	29		9	119	2	130		2	3	13	18		15	29	5	49		47	179	226
6:45 AM - 7:00 AM	0	14	12	26		5	145	4	154		0	1	20	21		41	53	4	98		47	252	299
7:00 AM - 7:15 AM	2	17	20	39		2	159	2	163		1	4	31	36		47	63	3	113		75	276	351
7:15 AM - 7:30 AM	0	21	16	37		9	205	1	215		1	6	39	46		40	89	6	135		83	350	433
7:30 AM - 7:45 AM	2	25	16	43		4	190	1	195		1	3	33	37		38	64	10	112		80	307	387
7:45 AM - 8:00 AM	3	11	10	24		10	212	0	222		2	3	25	30		47	64	6	117		54	339	393
8:00 AM - 8:15 AM	3	19	13	35		15	202	7	224		0	7	29	36		28	49	3	80		71	304	375
8:15 AM - 8:30 AM	2	14	14	30		13	190	0	203		0	13	30	43		18	48	10	76		73	279	352
8:30 AM - 8:45 AM	2	37	33	72		29	170	0	199		1	15	33	49		28	60	6	94		121	293	414
8:45 AM - 9:00 AM	3	37	22	62		4	188	2	194		0	14	28	42		38	49	6	93		104	287	391
Total	20	238	181	439		114	1971	23	2108		8	72	296	376		382	616	69	1067		815	3175	3990
AM One Hour Volumes																							
6:00 AM - 7:00 AM	3	57	37	97	0.84	28	455	10	493	0.80	2	7	48	57	0.68	98	130	19	247	0.63	154	740	894
6:15 AM - 7:15 AM	5	66	49	120	0.77	25	528	11	564	0.87	3	9	72	84	0.58	123	173	17	313	0.69	204	877	1081
6:30 AM - 7:30 AM	5	69	57	131	0.84	25	628	9	662	0.77	4	14	103	121	0.66	143	234	18	395	0.73	252	1057	1309
6:45 AM - 7:45 AM	4	77	64	145	0.84	20	699	8	727	0.85	3	14	123	140	0.76	166	269	23	458	0.85	285	1185	1470
7:00 AM - 8:00 AM	7	74	62	143	0.83	25	766	4	795	0.90	5	16	128	149	0.81	172	280	25	477	0.88	292	1272	1564
7:15 AM - 8:15 AM	8	76	55	139	0.81	38	809	9	856	0.96	4	19	126	149	0.81	153	266	25	444	0.82	288	1300	1588
7:30 AM - 8:30 AM	10	69	53	132	0.77	42	794	8	844	0.94	3	26	117	146	0.85	131	225	29	385	0.82	278	1229	1507
7:45 AM - 8:45 AM	10	81	70	161	0.56	67	774	7	848	0.95	3	38	117	158	0.81	121	221	25	367	0.78	319	1215	1534
8:00 AM - 9:00 AM	10	107	82	199	0.69	61	750	9	820	0.92	1	49	120	170	0.87	112	206	25	343	0.91	369	1163	1532
PM 15 Minute Volumes																							
4:00 PM - 4:15 PM	4	9	19	32		9	101	2	112		0	11	38	49		26	79	6	111		81	223	304
4:15 PM - 4:30 PM	2	11	20	33		6	103	4	113		1	15	55	71		23	121	17	161		104	274	378
4:30 PM - 4:45 PM	3	11	19	33		8	115	1	124		1	19	64	84		39	100	6	145		117	269	386
4:45 PM - 5:00 PM	5	16	16	37		12	113	4	129		1	15	46	62		31	136	12	179		99	308	407
5:00 PM - 5:15 PM	2	16	15	33		5	118	5	128		1	20	61	82		31	156	10	197		115	325	440
5:15 PM - 5:30 PM	3	10	13	26		9	123	3	135		2	15	61	78		24	175	14	213		104	348	452
5:30 PM - 5:45 PM	1	12	16	29		10	133	2	145		1	18	61	80		39	136	12	187		109	332	441
5:45 PM - 6:00 PM	3	14	12	29		3	107	1	111		2	18	33	53		32	152	9	193		82	304	386
6:00 PM - 6:15 PM	5	10	12	27		8	113	2	123		0	13	45	58		24	130	14	168		85	291	376
6:15 PM - 6:30 PM	4	13	17	34		7	107	2	116		2	16	56	74		40	126	16	182		108	298	406
6:30 PM - 6:45 PM	2	9	14	25		12	108	4	124		1	15	42	58		27	154	10	191		83	315	398
6:45 PM - 7:00 PM	1	13	13	27		6	87	2	95		1	8	26	35		24	133	8	165		62	260	322
Total	35	144	186	365		95	1328	32	1455		13	183	588	784		360	1598	134	2092		1149	3547	4696
PM One Hour Volumes																							
4:00 PM - 5:00 PM	14	47	74	135	0.91	35	432	11	478	0.93	3	60	203	266	0.79	119	436	41	596	0.83	401	1074	1475
4:15 PM - 5:15 PM	12	54	70	136	0.92	31	449	14	494	0.96	4	69	226	299	0.89	124	513	45	682	0.87	435	1176	1611
4:30 PM - 5:30 PM	13	53	63	129	0.87	34	469	13	516	0.96	5	69	232	306	0.91	125	567	42	734	0.86	435	1250	1685
4:45 PM - 5:45 PM	11	54	60	125	0.84	36	487	14	537	0.93	5	68	229	302	0.92	125	603	48	776	0.91	427	1313	1740
5:00 PM - 6:00 PM	9	52	56	117	0.89	27	481	11	519	0.89	6	71	216	293	0.89	126	619	45	790	0.93	410	1309	1719
5:15 PM - 6:15 PM	12	46	53	111	0.96	30	476	8	514	0.89	5	64	200	269	0.84	119	593	49	761	0.89	380	1275	1655
5:30 PM - 6:30 PM	13	49	57	119	0.88	28	460	7	495	0.85	5	65	195	265	0.83	135	544	51	730	0.95	384	1225	1609
5:45 PM - 6:45 PM	14	46	55	115	0.85	30	435	9	474	0.96	5	62	176	243	0.82	123	562	49	734	0.95	358	1208	1566
6:00 PM - 7:00 PM	12	45	56	113	0.83	33	415	10	458	0.92	4	52	169	225	0.76	115	543	48	706	0.92	338	1164	1502

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - Bicycles

PROJECT: YMCA Urbana				DATE: 4/25/2018				SOUTHBOUND ROAD: Urbana Pike											
W+A JOB NO: 7510				DAY: Wednesday				NORTHBOUND ROAD: Urbana Pike											
INTERSECTION: MD Route 80 & Urbana Pike				WEATHER: clear				WESTBOUND ROAD: Fingerboard Road 80											
LOCATION: Frederick County,MD				COUNTED BY: Anita				EASTBOUND ROAD: Fingerboard Road 80											
INPUTED BY: agan																			
Time Period	Southbound Urbana Pike				Westbound Fingerboard Road 80				Northbound Urbana Pike				Eastbound Fingerboard Road 80				North & South	East & West	Total
	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total			
AM 15 Minute Volumes																			
6:00 AM - 6:15 AM				0				0				0				0	0	0	0
6:15 AM - 6:30 AM				0				0				0				0	0	0	0
6:30 AM - 6:45 AM				0				0				0				0	0	0	0
6:45 AM - 7:00 AM				0				0				0				0	0	0	0
7:00 AM - 7:15 AM				0				0				0				0	0	0	0
7:15 AM - 7:30 AM				0				0				0				0	0	0	0
7:30 AM - 7:45 AM				0				0				0				0	0	0	0
7:45 AM - 8:00 AM				0				0				0				0	0	0	0
8:00 AM - 8:15 AM				0				0				0				0	0	0	0
8:15 AM - 8:30 AM				0				0				0				0	0	0	0
8:30 AM - 8:45 AM				0				0				0				0	0	0	0
8:45 AM - 9:00 AM				0				0				0				0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM One Hour Volumes																			
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 15 Minute Volumes																			
4:00 PM - 4:15 PM				0				0				0				0	0	0	0
4:15 PM - 4:30 PM				0				0				0				0	0	0	0
4:30 PM - 4:45 PM				0				0				0				0	0	0	0
4:45 PM - 5:00 PM				0				0				0				0	0	0	0
5:00 PM - 5:15 PM				0				0				0				0	0	0	0
5:15 PM - 5:30 PM				0				0				0				0	0	0	0
5:30 PM - 5:45 PM				0				0				0				0	0	0	0
5:45 PM - 6:00 PM				0				0				0				0	0	0	0
6:00 PM - 6:15 PM				0				0				0				0	0	0	0
6:15 PM - 6:30 PM				0				0				0				0	0	0	0
6:30 PM - 6:45 PM				0				0				0				0	0	0	0
6:45 PM - 7:00 PM				0				0				0				0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM One Hour Volumes																			
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wells + Associates, Inc.

McLean, Virginia

Pedestrian Volume Survey

PROJECT: YMCA Urbana W+A JOB NO: 7510 INTERSECTION: MD Route 80 & Urbana Pike LOCATION: Frederick County,MD DATE: 4/25/2018 DAY: Wednesday WEATHER: clear COUNTED BY: Muris INPUTED BY: agan Urbana Pike Fingerboard Road 80 Fingerboard Road 80 Urbana Pike 1 2 3 4 5 6 7 8 North															
Time Period	Movement										1 + 2	3 + 4	5 + 6	7+ 8	Total
	1	2	3	4	5	6	7	8							
AM 15 Minute Volumes															
6:00 AM - 6:15 AM															
6:15 AM - 6:30 AM															
6:30 AM - 6:45 AM															
6:45 AM - 7:00 AM															
7:00 AM - 7:15 AM															
7:15 AM - 7:30 AM															
7:30 AM - 7:45 AM															
7:45 AM - 8:00 AM															
8:00 AM - 8:15 AM															
8:15 AM - 8:30 AM															
8:30 AM - 8:45 AM															
8:45 AM - 9:00 AM															
Total	0	0	0	0	0	0	0	0	0						
AM One Hour Volumes															
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM 15 Minute Volumes															
4:00 PM - 4:15 PM															
4:15 PM - 4:30 PM															
4:30 PM - 4:45 PM								1							
4:45 PM - 5:00 PM															
5:00 PM - 5:15 PM															
5:15 PM - 5:30 PM															
5:30 PM - 5:45 PM								1	1						
5:45 PM - 6:00 PM		2							1						
6:00 PM - 6:15 PM															
6:15 PM - 6:30 PM		1													
6:30 PM - 6:45 PM															
6:45 PM - 7:00 PM	1														
Total	1	3	0	0	0	0	0	2	2						
PM One Hour Volumes															
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	1	
4:15 PM - 5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	1	
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	1	
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	1	1	0	0	0	2	2	
5:00 PM - 6:00 PM	0	2	0	0	0	0	0	1	2	2	0	0	3	5	
5:15 PM - 6:15 PM	0	2	0	0	0	0	0	1	2	2	0	0	3	5	
5:30 PM - 6:30 PM	0	3	0	0	0	0	0	1	2	3	0	0	3	6	
5:45 PM - 6:45 PM	0	3	0	0	0	0	0	0	1	3	0	0	1	4	
6:00 PM - 7:00 PM	1	1	0	0	0	0	0	0	0	2	0	0	0	2	

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - All Vehicles

PROJECT: YMCA Urbana					DATE: 4/25/2018					SOUTHBOUND ROAD: Worthington Boulevard - 355													
W+A JOB NO: 7510					DAY: Wednesday					NORTHBOUND ROAD: Worthington Boulevard - 355													
INTERSECTION: MD Route 355 & MD Route 80					WEATHER: clear					WESTBOUND ROAD: Fingerboard Road 80													
LOCATION: Frederick County,MD					COUNTED BY: Ali,Mujo & Meli					EASTBOUND ROAD: Fingerboard Road 80													
INPUTED BY: agan																							
Time Period	Southbound Worthington Boulevard - 355					Westbound Fingerboard Road 80					Northbound Worthington Boulevard - 355					Eastbound Fingerboard Road 80					North & South	East & West	Total
	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF			
AM 15 Minute Volumes																							
6:00 AM - 6:15 AM	5	107	11	123		4	91	68	163		1	2	1	4		10	12	4	26		127	189	316
6:15 AM - 6:30 AM	3	125	21	149		9	119	54	182		0	2	0	2		9	30	3	42		151	224	375
6:30 AM - 6:45 AM	3	124	32	159		21	128	57	206		2	1	2	5		5	34	9	48		164	254	418
6:45 AM - 7:00 AM	4	135	51	190		22	157	65	244		2	1	3	6		19	50	4	73		196	317	513
7:00 AM - 7:15 AM	3	168	87	258		33	142	114	289		0	22	7	29		22	68	2	92		287	381	668
7:15 AM - 7:30 AM	2	154	74	230		51	213	95	359		6	31	7	44		45	87	5	137		274	496	770
7:30 AM - 7:45 AM	6	116	83	205		44	200	65	309		7	17	5	29		22	79	11	112		234	421	655
7:45 AM - 8:00 AM	4	115	35	154		62	211	76	349		4	11	7	22		17	70	5	92		176	441	617
8:00 AM - 8:15 AM	3	108	43	154		48	197	66	311		1	13	9	23		7	65	7	79		177	390	567
8:15 AM - 8:30 AM	4	95	34	133		31	199	47	277		3	19	12	34		4	59	6	69		167	346	513
8:30 AM - 8:45 AM	4	104	38	146		38	194	44	276		3	32	6	41		9	75	7	91		187	367	554
8:45 AM - 9:00 AM	3	96	34	133		29	172	41	242		1	11	1	13		6	68	13	87		146	329	475
Total	44	1447	543	2034		392	2023	792	3207		30	162	60	252		175	697	76	948		2286	4155	6441
AM One Hour Volumes																							
6:00 AM - 7:00 AM	15	491	115	621	0.82	56	495	244	795	0.81	5	6	6	17	0.71	43	126	20	189	0.65	638	984	1622
6:15 AM - 7:15 AM	13	552	191	756	0.73	85	546	290	921	0.80	4	26	12	42	0.36	55	182	18	255	0.69	798	1176	1974
6:30 AM - 7:30 AM	12	581	244	837	0.81	127	640	331	1098	0.76	10	55	19	84	0.48	91	239	20	350	0.64	921	1448	2369
6:45 AM - 7:45 AM	15	573	295	883	0.86	150	712	339	1201	0.84	15	71	22	108	0.61	108	284	22	414	0.76	991	1615	2606
7:00 AM - 8:00 AM	15	553	279	847	0.82	190	766	350	1306	0.91	17	81	26	124	0.70	106	304	23	433	0.79	971	1739	2710
7:15 AM - 8:15 AM	15	493	235	743	0.81	205	821	302	1328	0.92	18	72	28	118	0.67	91	301	28	420	0.77	861	1748	2609
7:30 AM - 8:30 AM	17	434	195	646	0.79	185	807	254	1246	0.89	15	60	33	108	0.79	50	273	29	352	0.79	754	1598	2352
7:45 AM - 8:45 AM	15	422	150	587	0.95	179	801	233	1213	0.87	11	75	34	120	0.73	37	269	25	331	0.90	707	1544	2251
8:00 AM - 9:00 AM	14	403	149	566	0.92	146	762	198	1106	0.89	8	75	28	111	0.68	26	267	33	326	0.90	677	1432	2109
PM 15 Minute Volumes																							
4:00 PM - 4:15 PM	2	37	41	80		43	82	37	162		20	106	26	152		13	118	9	140		232	302	534
4:15 PM - 4:30 PM	2	46	59	107		55	84	25	164		26	80	26	132		7	158	15	180		239	344	583
4:30 PM - 4:45 PM	4	41	56	101		78	100	31	209		42	115	31	188		6	115	11	132		289	341	630
4:45 PM - 5:00 PM	0	58	77	135		50	91	21	162		31	123	22	176		13	186	25	224		311	386	697
5:00 PM - 5:15 PM	6	44	55	105		68	114	44	226		48	131	18	197		3	183	19	205		302	431	733
5:15 PM - 5:30 PM	3	56	78	137		58	94	33	185		31	121	21	173		9	218	24	251		310	436	746
5:30 PM - 5:45 PM	2	19	72	93		61	119	38	218		27	86	13	126		8	216	37	261		219	479	698
5:45 PM - 6:00 PM	5	36	67	108		79	84	41	204		31	98	27	156		8	217	23	248		264	452	716
6:00 PM - 6:15 PM	0	36	75	111		58	115	33	206		47	88	8	143		10	170	21	201		254	407	661
6:15 PM - 6:30 PM	4	45	72	121		57	105	42	204		43	80	3	126		6	180	17	203		247	407	654
6:30 PM - 6:45 PM	0	41	70	111		46	89	26	161		58	83	7	148		10	191	20	221		259	382	641
6:45 PM - 7:00 PM	2	43	54	99		41	85	25	151		23	55	16	94		5	148	13	166		193	317	510
Total	30	502	776	1308		694	1162	396	2252		427	1166	218	1811		98	2100	234	2432		3119	4684	7803
PM One Hour Volumes																							
4:00 PM - 5:00 PM	8	182	233	423	0.78	226	357	114	697	0.83	119	424	105	648	0.86	39	577	60	676	0.75	1071	1373	2444
4:15 PM - 5:15 PM	12	189	247	448	0.83	251	389	121	761	0.84	147	449	97	693	0.88	29	642	70	741	0.83	1141	1502	2643
4:30 PM - 5:30 PM	13	199	266	478	0.87	254	399	129	782	0.87	152	490	92	734	0.93	31	702	79	812	0.81	1212	1594	2806
4:45 PM - 5:45 PM	11	177	282	470	0.86	237	418	136	791	0.88	137	461	74	672	0.85	33	803	105	941	0.90	1142	1732	2874
5:00 PM - 6:00 PM	16	155	272	443	0.81	266	411	156	833	0.92	137	436	79	652	0.83	28	834	103	965	0.92	1095	1798	2893
5:15 PM - 6:15 PM	10	147	292	449	0.82	256	412	145	813	0.93	136	393	69	598	0.86	35	821	105	961	0.92	1047	1774	2821
5:30 PM - 6:30 PM	11	136	286	433	0.89	255	423	154	832	0.95	148	352	51	551	0.88	32	783	98	913	0.87	984	1745	2729
5:45 PM - 6:45 PM	9	158	284	451	0.93	240	393	142	775	0.94	179	349	45	573	0.92	34	758	81	873	0.88	1024	1648	2672
6:00 PM - 7:00 PM	6	165	271	442	0.91	202	394	126	722	0.88	171	306	34	511	0.86	31	689	71	791	0.89	953	1513	2466

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - Bicycles

PROJECT: YMCA Urbana				DATE: 4/25/2018				SOUTHBOUND ROAD: Worthington Boulevard - 355											
W+A JOB NO: 7510				DAY: Wednesday				NORTHBOUND ROAD: Worthington Boulevard - 355											
INTERSECTION: MD Route 355 & MD Route 80				WEATHER: clear				WESTBOUND ROAD: Fingerboard Road 80											
LOCATION: Frederick County,MD				COUNTED BY: Mujo				EASTBOUND ROAD: Fingerboard Road 80											
				INPUTED BY: agan															
Time Period	Southbound Worthington Boulevard - 355				Westbound Fingerboard Road 80				Northbound Worthington Boulevard - 355				Eastbound Fingerboard Road 80				North & South	East & West	Total
	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total			
AM 15 Minute Volumes																			
6:00 AM - 6:15 AM				0				0				0				0	0	0	0
6:15 AM - 6:30 AM				0				0				0				0	0	0	0
6:30 AM - 6:45 AM				0				0				0				0	0	0	0
6:45 AM - 7:00 AM				0				0				0				0	0	0	0
7:00 AM - 7:15 AM				0				0				0				0	0	0	0
7:15 AM - 7:30 AM				0				0				0				0	0	0	0
7:30 AM - 7:45 AM				0				0				0				0	0	0	0
7:45 AM - 8:00 AM				0				0				0				0	0	0	0
8:00 AM - 8:15 AM				0				0				0				0	0	0	0
8:15 AM - 8:30 AM				0				0				0				0	0	0	0
8:30 AM - 8:45 AM				0				0				0				0	0	0	0
8:45 AM - 9:00 AM				0				0				0				0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM One Hour Volumes																			
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 15 Minute Volumes																			
4:00 PM - 4:15 PM				0				0				0				0	0	0	0
4:15 PM - 4:30 PM				0				0				0				0	0	0	0
4:30 PM - 4:45 PM				0				0				0				0	0	0	0
4:45 PM - 5:00 PM				0				0				0				0	0	0	0
5:00 PM - 5:15 PM				0				0				0				0	0	0	0
5:15 PM - 5:30 PM				0				0				0				0	0	0	0
5:30 PM - 5:45 PM				0				0				0				0	0	0	0
5:45 PM - 6:00 PM				0				0				0				0	0	0	0
6:00 PM - 6:15 PM				0				0				0				0	0	0	0
6:15 PM - 6:30 PM				0				0				0				0	0	0	0
6:30 PM - 6:45 PM				0				0				0				0	0	0	0
6:45 PM - 7:00 PM				0				0				0				0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM One Hour Volumes																			
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wells + Associates, Inc.

McLean, Virginia

Pedestrian Volume Survey

PROJECT: YMCA Urbana W+A JOB NO: 7510 INTERSECTION: MD Route 355 & MD Route 80 LOCATION: Frederick County,MD DATE: 4/25/2018 DAY: Wednesday WEATHER: clear COUNTED BY: Ali INPUTED BY: agan														
Time Period	Movement													
	1	2	3	4	5	6	7	8		1 + 2	3 + 4	5 + 6	7 + 8	Total
AM 15 Minute Volumes														
6:00 AM - 6:15 AM														
6:15 AM - 6:30 AM		1												
6:30 AM - 6:45 AM														
6:45 AM - 7:00 AM														
7:00 AM - 7:15 AM					1									
7:15 AM - 7:30 AM		1												
7:30 AM - 7:45 AM			1					1						
7:45 AM - 8:00 AM														
8:00 AM - 8:15 AM														
8:15 AM - 8:30 AM														
8:30 AM - 8:45 AM														
8:45 AM - 9:00 AM														
Total	0	2	1	0	1	1	0	0						
AM One Hour Volumes														
6:00 AM - 7:00 AM	0	1	0	0	0	0	0	0		1	0	0	0	1
6:15 AM - 7:15 AM	0	1	0	0	1	0	0	0		1	0	1	0	2
6:30 AM - 7:30 AM	0	1	0	0	1	0	0	0		1	0	1	0	2
6:45 AM - 7:45 AM	0	1	1	0	1	1	0	0		1	1	2	0	4
7:00 AM - 8:00 AM	0	1	1	0	1	1	0	0		1	1	2	0	4
7:15 AM - 8:15 AM	0	1	1	0	0	1	0	0		1	1	1	0	3
7:30 AM - 8:30 AM	0	0	1	0	0	1	0	0		0	1	1	0	2
7:45 AM - 8:45 AM	0	0	0	0	0	0	0	0		0	0	0	0	0
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0		0	0	0	0	0
PM 15 Minute Volumes														
4:00 PM - 4:15 PM	1							3						
4:15 PM - 4:30 PM		1						1						
4:30 PM - 4:45 PM		1												
4:45 PM - 5:00 PM				2										
5:00 PM - 5:15 PM														
5:15 PM - 5:30 PM														
5:30 PM - 5:45 PM														
5:45 PM - 6:00 PM														
6:00 PM - 6:15 PM		2												
6:15 PM - 6:30 PM		2												
6:30 PM - 6:45 PM														
6:45 PM - 7:00 PM	1													
Total	2	6	0	2	0	0	1	3						
PM One Hour Volumes														
4:00 PM - 5:00 PM	1	2	0	2	0	0	1	3		3	2	0	4	9
4:15 PM - 5:15 PM	0	2	0	2	0	0	1	0		2	2	0	1	5
4:30 PM - 5:30 PM	0	1	0	2	0	0	0	0		1	2	0	0	3
4:45 PM - 5:45 PM	0	0	0	2	0	0	0	0		0	2	0	0	2
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0		0	0	0	0	0
5:15 PM - 6:15 PM	0	2	0	0	0	0	0	0		2	0	0	0	2
5:30 PM - 6:30 PM	0	4	0	0	0	0	0	0		4	0	0	0	4
5:45 PM - 6:45 PM	0	4	0	0	0	0	0	0		4	0	0	0	4
6:00 PM - 7:00 PM	1	4	0	0	0	0	0	0		5	0	0	0	5

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - Bicycles

PROJECT: YMCA Urbana				DATE: 4/25/2018				SOUTHBOUND ROAD: Campus Drive											
W+A JOB NO: 7510				DAY: Wednesday				NORTHBOUND ROAD: Campus Drive											
INTERSECTION: MD Route 80 & Campus Dr.				WEATHER: rain				WESTBOUND ROAD: Fingerboard Road - 80											
LOCATION: Frederick County,MD				COUNTED BY: Selvedina				EASTBOUND ROAD: Fingerboard Road - 80											
				INPUTED BY: agan															
Time Period	Southbound Campus Drive				Westbound Fingerboard Road - 80				Northbound Campus Drive				Eastbound Fingerboard Road - 80				North & South	East & West	Total
	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total			
AM 15 Minute Volumes																			
6:00 AM - 6:15 AM				0				0				0				0	0	0	0
6:15 AM - 6:30 AM				0				0				0				0	0	0	0
6:30 AM - 6:45 AM				0				0				0				0	0	0	0
6:45 AM - 7:00 AM				0				0				0				0	0	0	0
7:00 AM - 7:15 AM		1		1				0				0				0	1	0	1
7:15 AM - 7:30 AM		1		1				0				0				0	1	0	1
7:30 AM - 7:45 AM		1		1				0				0		1		1	1	1	2
7:45 AM - 8:00 AM				0				0				0				0	0	0	0
8:00 AM - 8:15 AM				0				0				0				0	0	0	0
8:15 AM - 8:30 AM				0				0				0				0	0	0	0
8:30 AM - 8:45 AM				0				0				0				0	0	0	0
8:45 AM - 9:00 AM				0				0				0				0	0	0	0
Total	0	3	0	3	0	0	0	0	0	0	0	0	0	1	0	1	3	1	4
AM One Hour Volumes																			
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM - 7:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
6:30 AM - 7:30 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
6:45 AM - 7:45 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	1	0	1	3	1	4
7:00 AM - 8:00 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	1	0	1	3	1	4
7:15 AM - 8:15 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	1	0	1	2	1	3
7:30 AM - 8:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	2
7:45 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 15 Minute Volumes																			
2:00 PM - 2:15 PM				0				0		3		3				0	3	0	3
2:15 PM - 2:30 PM				0				0				0				0	0	0	0
2:30 PM - 2:45 PM				0				0				0				0	0	0	0
2:45 PM - 3:00 PM				0				0				0				0	0	0	0
3:00 PM - 3:15 PM				0		2		2		1		1				0	1	2	3
3:15 PM - 3:30 PM				0				0				0				0	0	0	0
3:30 PM - 3:45 PM				0				0				0				0	0	0	0
3:45 PM - 4:00 PM				0				0				0				0	0	0	0
4:00 PM - 4:15 PM				0				0				0				0	0	0	0
4:15 PM - 4:30 PM				0				0				0				0	0	0	0
4:30 PM - 4:45 PM				0				0				0				0	0	0	0
4:45 PM - 5:00 PM				0				0				0				0	0	0	0
5:00 PM - 5:15 PM				0				0				0				0	0	0	0
5:15 PM - 5:30 PM				0				0				0				0	0	0	0
5:30 PM - 5:45 PM				0				0				0				0	0	0	0
5:45 PM - 6:00 PM				0				0				0				0	0	0	0
6:00 PM - 6:15 PM				0				0				0				0	0	0	0
6:15 PM - 6:30 PM				0				0				0				0	0	0	0
6:30 PM - 6:45 PM				0				0				0				0	0	0	0
6:45 PM - 7:00 PM				0				0				0				0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM One Hour Volumes																			
2:00 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3	0	3
2:15 PM - 3:15 PM	0	0	0	0	0	2	0	2	0	1	0	1	0	0	0	0	1	2	3
2:30 PM - 3:30 PM	0	0	0	0	0	2	0	2	0	1	0	1	0	0	0	0	1	2	3
2:45 PM - 3:45 PM	0	0	0	0	0	2	0	2	0	1	0	1	0	0	0	0	1	2	3
3:00 PM - 4:00 PM	0	0	0	0	0	2	0	2	0	1	0	1	0	0	0	0	1	2	3
3:15 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wells + Associates, Inc.

McLean, Virginia

Pedestrian Volume Survey

PROJECT: YMCA Urbana W+A JOB NO: 7510 INTERSECTION: MD Route 80 & Campus Dr. LOCATION: Frederick County,MD DATE: 4/25/2018 DAY: Wednesday WEATHER: rain COUNTED BY: lbro INPUTED BY: agan														
Time Period	Movement													
	1	2	3	4	5	6	7	8		1 + 2	3 + 4	5 + 6	7 + 8	Total
AM 15 Minute Volumes														
6:00 AM - 6:15 AM					1			1						
6:15 AM - 6:30 AM		1												
6:30 AM - 6:45 AM		1							1					
6:45 AM - 7:00 AM	4			4				3						
7:00 AM - 7:15 AM	5							25						
7:15 AM - 7:30 AM	3	1						30						
7:30 AM - 7:45 AM	1	3												
7:45 AM - 8:00 AM		1												
8:00 AM - 8:15 AM		2						1						
8:15 AM - 8:30 AM														
8:30 AM - 8:45 AM	1													
8:45 AM - 9:00 AM														
Total	14	9	0	4	1	1	0	60						
AM One Hour Volumes														
6:00 AM - 7:00 AM	4	2	0	4	1	1	0	4		6	4	2	4	16
6:15 AM - 7:15 AM	9	2	0	4	0	0	0	29		11	4	0	29	44
6:30 AM - 7:30 AM	12	2	0	4	0	0	0	59		14	4	0	59	77
6:45 AM - 7:45 AM	13	4	0	4	0	0	0	58		17	4	0	58	79
7:00 AM - 8:00 AM	9	5	0	0	0	0	0	55		14	0	0	55	69
7:15 AM - 8:15 AM	4	7	0	0	0	0	0	31		11	0	0	31	42
7:30 AM - 8:30 AM	1	6	0	0	0	0	0	1		7	0	0	1	8
7:45 AM - 8:45 AM	1	3	0	0	0	0	0	1		4	0	0	1	5
8:00 AM - 9:00 AM	1	2	0	0	0	0	0	1		3	0	0	1	4
PM 15 Minute Volumes														
2:00 PM - 2:15 PM				1				1						
2:15 PM - 2:30 PM		15						220						
2:30 PM - 2:45 PM		1						6						
2:45 PM - 3:00 PM	6	2						5	1					
3:00 PM - 3:15 PM	7	37			1			5	1					
3:15 PM - 3:30 PM	13	1						10						
3:30 PM - 3:45 PM		1						17						
3:45 PM - 4:00 PM								6						
4:00 PM - 4:15 PM								2						
4:15 PM - 4:30 PM														
4:30 PM - 4:45 PM														
4:45 PM - 5:00 PM		1						1						
5:00 PM - 5:15 PM								2						
5:15 PM - 5:30 PM								2						
5:30 PM - 5:45 PM	1													
5:45 PM - 6:00 PM								2	2					
6:00 PM - 6:15 PM														
6:15 PM - 6:30 PM														
6:30 PM - 6:45 PM														
6:45 PM - 7:00 PM														
Total	1	1	0	0	0	0	0	7	4					
PM One Hour Volumes														
2:00 PM - 3:00 PM	6	18	0	1	0	0	232	1		24	1	0	233	258
2:15 PM - 3:15 PM	13	55	0	0	1	0	236	2		68	0	1	238	307
2:30 PM - 3:30 PM	26	41	0	0	1	0	26	2		67	0	1	28	96
2:45 PM - 3:45 PM	26	41	0	0	1	0	37	2		67	0	1	39	107
3:00 PM - 4:00 PM	20	39	0	0	1	0	38	1		59	0	1	39	99
3:15 PM - 4:15 PM	13	2	0	0	0	0	33	2		15	0	0	35	50
3:30 PM - 4:30 PM	0	1	0	0	0	0	23	2		1	0	0	25	26
3:45 PM - 4:45 PM	0	0	0	0	0	0	6	2		0	0	0	8	8
4:00 PM - 5:00 PM	0	1	0	0	0	0	1	2		1	0	0	3	4
4:15 PM - 5:15 PM	0	1	0	0	0	0	3	0		1	0	0	3	4
4:30 PM - 5:30 PM	0	1	0	0	0	0	5	0		1	0	0	5	6
4:45 PM - 5:45 PM	1	1	0	0	0	0	5	0		2	0	0	5	7
5:00 PM - 6:00 PM	1	0	0	0	0	0	6	2		1	0	0	8	9
5:15 PM - 6:15 PM	1	0	0	0	0	0	4	2		1	0	0	6	7
5:30 PM - 6:30 PM	1	0	0	0	0	0	2	2		1	0	0	4	5
5:45 PM - 6:45 PM	0	0	0	0	0	0	2	2		0	0	0	4	4
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0		0	0	0	0	0

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - All Vehicles

PROJECT: YMCA Urbana					DATE: 4/25/2018					SOUTHBOUND ROAD: Worthington Boulevard - 355													
W+A JOB NO: 7510					DAY: Wednesday					NORTHBOUND ROAD: Urbana Pike													
INTERSECTION: MD Route 355 & Urbana Pike					WEATHER: clear					WESTBOUND ROAD: Urbana Pike													
LOCATION: Frederick County,MD					COUNTED BY: James & Initia					EASTBOUND ROAD: Plaza Driveway													
					INPUTED BY: agan																		
Time Period	Southbound Worthington Boulevard - 355					Westbound Urbana Pike					Northbound Urbana Pike					Eastbound Plaza Driveway					North & South	East & West	Total
	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF			
AM 15 Minute Volumes																							
6:00 AM - 6:15 AM	1	163	4	168		0	1	0	1		0	4	5	9		34	4	1	39		177	40	217
6:15 AM - 6:30 AM	1	166	0	167		0	1	0	1		0	3	6	9		46	0	0	46		176	47	223
6:30 AM - 6:45 AM	2	149	1	152		0	0	0	0		0	3	9	12		30	1	1	32		164	32	196
6:45 AM - 7:00 AM	1	192	2	195		2	0	0	2		0	1	5	6		62	0	1	63		201	65	266
7:00 AM - 7:15 AM	2	279	3	284		0	0	1	1		2	13	22	37		75	0	2	77		321	78	399
7:15 AM - 7:30 AM	10	227	4	241		1	0	0	1		1	47	41	89		71	1	4	76		330	77	407
7:30 AM - 7:45 AM	4	162	3	169		2	1	1	4		0	7	29	36		46	1	2	49		205	53	258
7:45 AM - 8:00 AM	3	145	6	154		1	3	0	4		1	20	22	43		53	1	3	57		197	61	258
8:00 AM - 8:15 AM	2	117	4	123		0	0	1	1		1	18	21	40		48	0	1	49		163	50	213
8:15 AM - 8:30 AM	2	125	1	128		2	0	1	3		0	34	29	63		28	2	3	33		191	36	227
8:30 AM - 8:45 AM	2	127	4	133		1	0	0	1		1	19	23	43		43	1	2	46		176	47	223
8:45 AM - 9:00 AM	7	95	6	108		0	5	1	6		2	24	31	57		63	0	1	64		165	70	235
Total	37	1947	38	2022		9	11	5	25		8	193	243	444		599	11	21	631		2466	656	3122
AM One Hour Volumes																							
6:00 AM - 7:00 AM	5	670	7	682	0.87	2	2	0	4	0.50	0	11	25	36	0.75	172	5	3	180	0.71	718	184	902
6:15 AM - 7:15 AM	6	786	6	798	0.70	2	1	1	4	0.50	2	20	42	64	0.43	213	1	4	218	0.71	862	222	1084
6:30 AM - 7:30 AM	15	847	10	872	0.77	3	0	1	4	0.50	3	64	77	144	0.40	238	2	8	248	0.81	1016	252	1268
6:45 AM - 7:45 AM	17	860	12	889	0.78	5	1	2	8	0.50	3	68	97	168	0.47	254	2	9	265	0.86	1057	273	1330
7:00 AM - 8:00 AM	19	813	16	848	0.75	4	4	2	10	0.63	4	87	114	205	0.58	245	3	11	259	0.84	1053	269	1322
7:15 AM - 8:15 AM	19	651	17	687	0.71	4	4	2	10	0.63	3	92	113	208	0.58	218	3	10	231	0.76	895	241	1136
7:30 AM - 8:30 AM	11	549	14	574	0.85	5	4	3	12	0.75	2	79	101	182	0.72	175	4	9	188	0.82	756	200	956
7:45 AM - 8:45 AM	9	514	15	538	0.87	4	3	2	9	0.56	3	91	95	189	0.75	172	4	9	185	0.81	727	194	921
8:00 AM - 9:00 AM	13	464	15	492	0.92	3	5	3	11	0.46	4	95	104	203	0.81	182	3	7	192	0.75	695	203	898
PM 15 Minute Volumes																							
4:00 PM - 4:15 PM	5	38	24	67		10	7	2	19		3	126	72	201		23	7	6	36		268	55	323
4:15 PM - 4:30 PM	11	42	12	65		12	6	2	20		2	127	53	182		22	2	7	31		247	51	298
4:30 PM - 4:45 PM	8	45	13	66		6	6	1	13		2	150	73	225		35	3	4	42		291	55	346
4:45 PM - 5:00 PM	10	49	18	77		11	6	3	20		3	152	63	218		27	5	1	33		295	53	348
5:00 PM - 5:15 PM	10	36	31	77		15	3	1	19		4	136	73	213		35	7	7	49		290	68	358
5:15 PM - 5:30 PM	4	48	13	65		19	5	4	28		4	141	59	204		23	1	4	28		269	56	325
5:30 PM - 5:45 PM	9	23	20	52		12	4	2	18		5	134	50	189		25	6	4	35		241	53	294
5:45 PM - 6:00 PM	6	38	25	69		15	6	1	22		2	129	42	173		16	6	4	26		242	48	290
6:00 PM - 6:15 PM	4	32	24	60		10	5	2	17		9	82	41	132		18	2	7	27		192	44	236
6:15 PM - 6:30 PM	5	45	18	68		5	2	1	8		1	95	38	134		21	7	7	35		202	43	245
6:30 PM - 6:45 PM	6	30	28	64		22	5	2	29		4	84	28	116		14	7	5	26		180	55	235
6:45 PM - 7:00 PM	5	25	34	64		14	6	5	25		2	72	25	99		23	4	2	29		163	54	217
Total	83	451	260	794		151	61	26	238		41	1428	617	2086		282	57	58	397		2880	635	3515
PM One Hour Volumes																							
4:00 PM - 5:00 PM	34	174	67	275	0.89	39	25	8	72	0.90	10	555	261	826	0.92	107	17	18	142	0.85	1101	214	1315
4:15 PM - 5:15 PM	39	172	74	285	0.93	44	21	7	72	0.90	11	565	262	838	0.93	119	17	19	155	0.79	1123	227	1350
4:30 PM - 5:30 PM	32	178	75	285	0.93	51	20	9	80	0.71	13	579	268	860	0.96	120	16	16	152	0.78	1145	232	1377
4:45 PM - 5:45 PM	33	156	82	271	0.88	57	18	10	85	0.76	16	563	245	824	0.94	110	19	16	145	0.74	1095	230	1325
5:00 PM - 6:00 PM	29	145	89	263	0.85	61	18	8	87	0.78	15	540	224	779	0.91	99	20	19	138	0.70	1042	225	1267
5:15 PM - 6:15 PM	23	141	82	246	0.89	56	20	9	85	0.76	20	486	192	698	0.86	82	15	19	116	0.83	944	201	1145
5:30 PM - 6:30 PM	24	138	87	249	0.90	42	17	6	65	0.74	17	440	171	628	0.83	80	21	22	123	0.88	877	188	1065
5:45 PM - 6:45 PM	21	145	95	261	0.95	52	18	6	76	0.66	16	390	149	555	0.80	69	22	23	114	0.81	816	190	1006
6:00 PM - 7:00 PM	20	132	104	256	0.94	51	18	10	79	0.68	16	333	132	481	0.90	76	20	21	117	0.84	737	196	933

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - Bicycles

PROJECT: YMCA Urbana				DATE: 4/25/2018				SOUTHBOUND ROAD: Worthington Boulevard - 355											
W+A JOB NO: 7510				DAY: Wednesday				NORTHBOUND ROAD: Urbana Pike											
INTERSECTION: MD Route 355 & Urbana Pike				WEATHER: clear				WESTBOUND ROAD: Urbana Pike											
LOCATION: Frederick County,MD				COUNTED BY: Inita				EASTBOUND ROAD: Plaza Driveway											
				INPUTED BY: agan															
Time Period	Southbound Worthington Boulevard - 355				Westbound Urbana Pike				Northbound Urbana Pike				Eastbound Plaza Driveway				North & South	East & West	Total
	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total			
AM 15 Minute Volumes																			
6:00 AM - 6:15 AM				0				0				0				0	0	0	0
6:15 AM - 6:30 AM				0				0				0				0	0	0	0
6:30 AM - 6:45 AM				0				0				0				0	0	0	0
6:45 AM - 7:00 AM				0				0				0				0	0	0	0
7:00 AM - 7:15 AM				0				0				0				0	0	0	0
7:15 AM - 7:30 AM				0				0				0				0	0	0	0
7:30 AM - 7:45 AM				0				0				0				0	0	0	0
7:45 AM - 8:00 AM				0				0				0				0	0	0	0
8:00 AM - 8:15 AM				0				0				0				0	0	0	0
8:15 AM - 8:30 AM				0				0				0				0	0	0	0
8:30 AM - 8:45 AM				0				0				0				0	0	0	0
8:45 AM - 9:00 AM				0				0				0				0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM One Hour Volumes																			
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 15 Minute Volumes																			
4:00 PM - 4:15 PM				0				0				0				0	0	0	0
4:15 PM - 4:30 PM				0				0				0				0	0	0	0
4:30 PM - 4:45 PM				0				0				0				0	0	0	0
4:45 PM - 5:00 PM				0				0				0				0	0	0	0
5:00 PM - 5:15 PM				0				0				0				0	0	0	0
5:15 PM - 5:30 PM				0				0				0				0	0	0	0
5:30 PM - 5:45 PM				0				0				0				0	0	0	0
5:45 PM - 6:00 PM				0				0				0				0	0	0	0
6:00 PM - 6:15 PM				0				0				0				0	0	0	0
6:15 PM - 6:30 PM				0				0				0				0	0	0	0
6:30 PM - 6:45 PM				0				0				0				0	0	0	0
6:45 PM - 7:00 PM				0				0				0				0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM One Hour Volumes																			
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wells + Associates, Inc.

McLean, Virginia

Pedestrian Volume Survey

PROJECT: YMCA Urbana W+A JOB NO: 7510 INTERSECTION: MD Route 355 & Urbana Pike LOCATION: Frederick County,MD DATE: 4/25/2018 DAY: Wednesday WEATHER: clear COUNTED BY: James & Initia INPUTED BY: agan Worthington Boulevard - 355 Plaza Driveway 1 2 8 7 5 6 4 3 Urbana Pike North														
Time Period	Movement													
	1	2	3	4	5	6	7	8			1 + 2	3 + 4	5 + 6	7+ 8 Total
AM 15 Minute Volumes														
6:00 AM - 6:15 AM														
6:15 AM - 6:30 AM														
6:30 AM - 6:45 AM														
6:45 AM - 7:00 AM														
7:00 AM - 7:15 AM		1												
7:15 AM - 7:30 AM		2												
7:30 AM - 7:45 AM														
7:45 AM - 8:00 AM														
8:00 AM - 8:15 AM														
8:15 AM - 8:30 AM														
8:30 AM - 8:45 AM														
8:45 AM - 9:00 AM														
Total	0	3	0	0	0	0	0	0						
AM One Hour Volumes														
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0			0	0	0	0
6:15 AM - 7:15 AM	0	1	0	0	0	0	0	0			1	0	0	1
6:30 AM - 7:30 AM	0	3	0	0	0	0	0	0			3	0	0	3
6:45 AM - 7:45 AM	0	3	0	0	0	0	0	0			3	0	0	3
7:00 AM - 8:00 AM	0	3	0	0	0	0	0	0			3	0	0	3
7:15 AM - 8:15 AM	0	2	0	0	0	0	0	0			2	0	0	2
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0			0	0	0	0
7:45 AM - 8:45 AM	0	0	0	0	0	0	0	0			0	0	0	0
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0			0	0	0	0
PM 15 Minute Volumes														
4:00 PM - 4:15 PM														
4:15 PM - 4:30 PM														
4:30 PM - 4:45 PM														
4:45 PM - 5:00 PM				1										
5:00 PM - 5:15 PM				1										
5:15 PM - 5:30 PM														
5:30 PM - 5:45 PM														
5:45 PM - 6:00 PM														
6:00 PM - 6:15 PM														
6:15 PM - 6:30 PM														
6:30 PM - 6:45 PM														
6:45 PM - 7:00 PM					1									
Total	0	0	0	2	1	0	0	0						
PM One Hour Volumes														
4:00 PM - 5:00 PM	0	0	0	1	0	0	0	0			0	1	0	1
4:15 PM - 5:15 PM	0	0	0	2	0	0	0	0			0	2	0	2
4:30 PM - 5:30 PM	0	0	0	2	0	0	0	0			0	2	0	2
4:45 PM - 5:45 PM	0	0	0	2	0	0	0	0			0	2	0	2
5:00 PM - 6:00 PM	0	0	0	1	0	0	0	0			0	1	0	1
5:15 PM - 6:15 PM	0	0	0	0	0	0	0	0			0	0	0	0
5:30 PM - 6:30 PM	0	0	0	0	0	0	0	0			0	0	0	0
5:45 PM - 6:45 PM	0	0	0	0	0	0	0	0			0	0	0	0
6:00 PM - 7:00 PM	0	0	0	0	1	0	0	0			0	0	1	1

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - All Vehicles

PROJECT: YMCA Urbana					DATE: 4/25/2018					SOUTHBOUND ROAD: Sugarloaf Parkway													
W+A JOB NO: 7510					DAY: Wednesday					NORTHBOUND ROAD: Sugarloaf Parkway													
INTERSECTION: MD Route 355 & Sugarloaf Pkwy.					WEATHER: clear					WESTBOUND ROAD: Worthington Boulevard - 355													
LOCATION: Frederick County,MD					COUNTED BY: Sale & Amela					EASTBOUND ROAD: Worthington Boulevard - 355													
INPUTED BY: agan																							
Time Period	Southbound Sugarloaf Parkway					Westbound Worthington Boulevard - 355					Northbound Sugarloaf Parkway					Eastbound Worthington Boulevard - 355					North & South	East & West	Total
	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF			
AM 15 Minute Volumes																							
6:00 AM - 6:15 AM	2	14	1	17		1	10	1	12		1	3	0	4		18	120	4	142		21	154	175
6:15 AM - 6:30 AM	0	27	2	29		5	12	2	19		2	1	0	3		20	135	3	158		32	177	209
6:30 AM - 6:45 AM	1	41	3	45		6	20	4	30		3	2	2	7		57	129	3	189		52	219	271
6:45 AM - 7:00 AM	1	41	6	48		6	17	2	25		2	1	5	8		46	169	0	215		56	240	296
7:00 AM - 7:15 AM	1	89	9	99		10	44	5	59		5	8	3	16		56	215	6	277		115	336	451
7:15 AM - 7:30 AM	2	74	45	121		29	54	3	86		4	11	3	18		41	175	11	227		139	313	452
7:30 AM - 7:45 AM	1	61	32	94		24	47	4	75		8	14	7	29		66	148	15	229		123	304	427
7:45 AM - 8:00 AM	0	49	28	77		16	58	5	79		0	4	4	8		45	135	7	187		85	266	351
8:00 AM - 8:15 AM	0	41	16	57		13	48	6	67		2	13	8	23		50	95	6	151		80	218	298
8:15 AM - 8:30 AM	2	44	15	61		8	40	5	53		4	8	5	17		43	109	13	165		78	218	296
8:30 AM - 8:45 AM	1	62	19	82		10	52	7	69		5	11	8	24		45	109	15	169		106	238	344
8:45 AM - 9:00 AM	6	51	11	68		17	61	6	84		3	19	9	31		60	105	10	175		99	259	358
Total	17	594	187	798		145	463	50	658		39	95	54	188		547	1644	93	2284		986	2942	3928
AM One Hour Volumes																							
6:00 AM - 7:00 AM	4	123	12	139	0.72	18	59	9	86	0.72	8	7	7	22	0.69	141	553	10	704	0.82	161	790	951
6:15 AM - 7:15 AM	3	198	20	221	0.56	27	93	13	133	0.56	12	12	10	34	0.53	179	648	12	839	0.76	255	972	1227
6:30 AM - 7:30 AM	5	245	63	313	0.65	51	135	14	200	0.58	14	22	13	49	0.68	200	688	20	908	0.82	362	1108	1470
6:45 AM - 7:45 AM	5	265	92	362	0.75	69	162	14	245	0.71	19	34	18	71	0.61	209	707	32	948	0.86	433	1193	1626
7:00 AM - 8:00 AM	4	273	114	391	0.81	79	203	17	299	0.87	17	37	17	71	0.61	208	673	39	920	0.83	462	1219	1681
7:15 AM - 8:15 AM	3	225	121	349	0.72	82	207	18	307	0.89	14	42	22	78	0.67	202	553	39	794	0.87	427	1101	1528
7:30 AM - 8:30 AM	3	195	91	289	0.77	61	193	20	274	0.87	14	39	24	77	0.66	204	487	41	732	0.80	366	1006	1372
7:45 AM - 8:45 AM	3	196	78	277	0.84	47	198	23	268	0.85	11	36	25	72	0.75	183	448	41	672	0.90	349	940	1289
8:00 AM - 9:00 AM	9	198	61	268	0.82	48	201	24	273	0.81	14	51	30	95	0.77	198	418	44	660	0.94	363	933	1296
PM 15 Minute Volumes																							
4:00 PM - 4:15 PM	3	46	16	65		32	97	10	139		1	31	18	50		19	75	16	110		115	249	364
4:15 PM - 4:30 PM	7	36	19	62		44	101	11	156		2	38	12	52		28	71	13	112		114	268	382
4:30 PM - 4:45 PM	6	39	21	66		36	112	13	161		3	29	18	50		28	83	20	131		116	292	408
4:45 PM - 5:00 PM	2	44	24	70		43	124	18	185		2	42	12	56		30	104	14	148		126	333	459
5:00 PM - 5:15 PM	0	45	17	62		41	108	20	169		0	63	28	91		26	75	15	116		153	285	438
5:15 PM - 5:30 PM	14	38	21	73		38	129	19	186		3	61	33	97		46	103	20	169		170	355	525
5:30 PM - 5:45 PM	15	31	26	72		43	121	17	181		3	48	26	77		28	86	20	134		149	315	464
5:45 PM - 6:00 PM	13	29	30	72		32	109	16	157		3	55	30	88		49	95	21	165		160	322	482
6:00 PM - 6:15 PM	10	31	16	57		46	96	10	152		3	53	21	77		42	93	15	150		134	302	436
6:15 PM - 6:30 PM	11	32	18	61		34	87	9	130		2	54	24	80		22	101	11	134		141	264	405
6:30 PM - 6:45 PM	9	34	15	58		35	89	8	132		2	30	17	49		26	82	9	117		107	249	356
6:45 PM - 7:00 PM	8	29	19	56		27	71	6	104		4	49	7	60		17	73	9	99		116	203	319
Total	98	434	242	774		451	1244	157	1852		28	553	246	827		361	1041	183	1585		1601	3437	5038
PM One Hour Volumes																							
4:00 PM - 5:00 PM	18	165	80	263	0.94	155	434	52	641	0.87	8	140	60	208	0.93	105	333	63	501	0.85	471	1142	1613
4:15 PM - 5:15 PM	15	164	81	260	0.93	164	445	62	671	0.91	7	172	70	249	0.68	112	333	62	507	0.86	509	1178	1687
4:30 PM - 5:30 PM	22	166	83	271	0.93	158	473	70	701	0.94	8	195	91	294	0.76	130	365	69	564	0.83	565	1265	1830
4:45 PM - 5:45 PM	31	158	88	277	0.95	165	482	74	721	0.97	8	214	99	321	0.83	130	368	69	567	0.84	598	1288	1886
5:00 PM - 6:00 PM	42	143	94	279	0.96	154	467	72	693	0.93	9	227	117	353	0.91	149	359	76	584	0.86	632	1277	1909
5:15 PM - 6:15 PM	52	129	93	274	0.94	159	455	62	676	0.91	12	217	110	339	0.87	165	377	76	618	0.91	613	1294	1907
5:30 PM - 6:30 PM	49	123	90	262	0.91	155	413	52	620	0.86	11	210	101	322	0.91	141	375	67	583	0.88	584	1203	1787
5:45 PM - 6:45 PM	43	126	79	248	0.86	147	381	43	571	0.91	10	192	92	294	0.84	139	371	56	566	0.86	542	1137	1679
6:00 PM - 7:00 PM	38	126	68	232	0.95	142	343	33	518	0.85	11	186	69	266	0.83	107	349	44	500	0.83	498	1018	1516

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - Bicycles

PROJECT: YMCA Urbana		DATE: 4/25/2018				SOUTHBOUND ROAD: Sugarloaf Parkway															
W+A JOB NO: 7510		DAY: Wednesday				NORTHBOUND ROAD: Sugarloaf Parkway															
INTERSECTION: MD Route 355 & Sugarloaf Pkwy.		WEATHER: clear				WESTBOUND ROAD: Worthington Boulevard - 355															
LOCATION: Frederick County,MD		COUNTED BY: Amela				EASTBOUND ROAD: Worthington Boulevard - 355															
		INPUTED BY: agan																			
Time Period	Southbound Sugarloaf Parkway				Westbound Worthington Boulevard - 355				Northbound Sugarloaf Parkway				Eastbound Worthington Boulevard - 355				North & South	East & West	Total		
	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total					
AM 15 Minute Volumes																					
6:00 AM - 6:15 AM				0				0				0		1			1	0	1	1	
6:15 AM - 6:30 AM				0				0				0					0	0	0	0	
6:30 AM - 6:45 AM				0				0				0					0	0	0	0	
6:45 AM - 7:00 AM				0				0				0					0	0	0	0	
7:00 AM - 7:15 AM			1	1				0				0					0	1	0	1	
7:15 AM - 7:30 AM				0				0				0					0	0	0	0	
7:30 AM - 7:45 AM			1	1				0				0				1	1	1	1	2	
7:45 AM - 8:00 AM				0				0				0			1		1	0	1	1	
8:00 AM - 8:15 AM				0				0				0					0	0	0	0	
8:15 AM - 8:30 AM				0				0				0					0	0	0	0	
8:30 AM - 8:45 AM				0				0				0					0	0	0	0	
8:45 AM - 9:00 AM				0				0				0					0	0	0	0	
Total		0	2	0	2		0	0	0	0		0	0	0	1	1	1	3	2	3	5
AM One Hour Volumes																					
6:00 AM - 7:00 AM		0	0	0	0		0	0	0	0		0	0	0	1	0	0	1	0	1	1
6:15 AM - 7:15 AM		0	1	0	1		0	0	0	0		0	0	0	0	0	0	0	1	0	1
6:30 AM - 7:30 AM		0	1	0	1		0	0	0	0		0	0	0	0	0	0	0	1	0	1
6:45 AM - 7:45 AM		0	2	0	2		0	0	0	0		0	0	0	0	0	1	1	2	1	3
7:00 AM - 8:00 AM		0	2	0	2		0	0	0	0		0	0	0	0	1	1	2	2	2	4
7:15 AM - 8:15 AM		0	1	0	1		0	0	0	0		0	0	0	0	1	1	2	1	2	3
7:30 AM - 8:30 AM		0	1	0	1		0	0	0	0		0	0	0	0	1	1	2	1	2	3
7:45 AM - 8:45 AM		0	0	0	0		0	0	0	0		0	0	0	0	1	0	1	0	1	1
8:00 AM - 9:00 AM		0	0	0	0		0	0	0	0		0	0	0	0	0	0	0	0	0	0
PM 15 Minute Volumes																					
4:00 PM - 4:15 PM				0				0				0					0	0	0	0	0
4:15 PM - 4:30 PM				0				0				0					0	0	0	0	0
4:30 PM - 4:45 PM				0				0				0					0	0	0	0	0
4:45 PM - 5:00 PM				0				0				0					0	0	0	0	0
5:00 PM - 5:15 PM				0				0			1	1					0	1	0	1	1
5:15 PM - 5:30 PM				0				0				0					0	0	0	0	0
5:30 PM - 5:45 PM				0				0				0					0	0	0	0	0
5:45 PM - 6:00 PM				0				0				0					0	0	0	0	0
6:00 PM - 6:15 PM				0				0				0					0	0	0	0	0
6:15 PM - 6:30 PM				0				0				0					0	0	0	0	0
6:30 PM - 6:45 PM				0				0				0					0	0	0	0	0
6:45 PM - 7:00 PM				0				0				0					0	0	0	0	0
Total		0	0	0	0		0	0	0	0		0	0	1	1	0	0	0	1	0	1
PM One Hour Volumes																					
4:00 PM - 5:00 PM		0	0	0	0		0	0	0	0		0	0	0	0	0	0	0	0	0	0
4:15 PM - 5:15 PM		0	0	0	0		0	0	0	0		0	0	1	1	0	0	0	1	0	1
4:30 PM - 5:30 PM		0	0	0	0		0	0	0	0		0	0	1	1	0	0	0	1	0	1
4:45 PM - 5:45 PM		0	0	0	0		0	0	0	0		0	0	1	1	0	0	0	1	0	1
5:00 PM - 6:00 PM		0	0	0	0		0	0	0	0		0	0	1	1	0	0	0	1	0	1
5:15 PM - 6:15 PM		0	0	0	0		0	0	0	0		0	0	0	0	0	0	0	0	0	0
5:30 PM - 6:30 PM		0	0	0	0		0	0	0	0		0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:45 PM		0	0	0	0		0	0	0	0		0	0	0	0	0	0	0	0	0	0
6:00 PM - 7:00 PM		0	0	0	0		0	0	0	0		0	0	0	0	0	0	0	0	0	0

Wells + Associates, Inc.

McLean, Virginia

Pedestrian Volume Survey

PROJECT: YMCA Urbana W+A JOB NO: 7510 INTERSECTION: MD Route 355 & Sugarloaf Pkwy. LOCATION: Frederick County, MD DATE: 4/25/2018 DAY: Wednesday WEATHER: clear COUNTED BY: Sale INPUTED BY: agan														
Time Period	Movement													
	1	2	3	4	5	6	7	8		1 + 2	3 + 4	5 + 6	7 + 8	Total
AM 15 Minute Volumes														
6:00 AM - 6:15 AM		1												
6:15 AM - 6:30 AM		1												
6:30 AM - 6:45 AM		1												
6:45 AM - 7:00 AM		2						1						
7:00 AM - 7:15 AM					1									
7:15 AM - 7:30 AM														
7:30 AM - 7:45 AM														
7:45 AM - 8:00 AM		2												
8:00 AM - 8:15 AM														
8:15 AM - 8:30 AM														
8:30 AM - 8:45 AM														
8:45 AM - 9:00 AM														
Total	0	7	0	0	1	1	0	0						
AM One Hour Volumes														
6:00 AM - 7:00 AM	0	5	0	0	0	1	0	0		5	0	1	0	6
6:15 AM - 7:15 AM	0	4	0	0	1	1	0	0		4	0	2	0	6
6:30 AM - 7:30 AM	0	3	0	0	1	1	0	0		3	0	2	0	5
6:45 AM - 7:45 AM	0	2	0	0	1	1	0	0		2	0	2	0	4
7:00 AM - 8:00 AM	0	2	0	0	1	0	0	0		2	0	1	0	3
7:15 AM - 8:15 AM	0	2	0	0	0	0	0	0		2	0	0	0	2
7:30 AM - 8:30 AM	0	2	0	0	0	0	0	0		2	0	0	0	2
7:45 AM - 8:45 AM	0	2	0	0	0	0	0	0		2	0	0	0	2
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0		0	0	0	0	0
PM 15 Minute Volumes														
4:00 PM - 4:15 PM	1		3											
4:15 PM - 4:30 PM														
4:30 PM - 4:45 PM		2	3											
4:45 PM - 5:00 PM														
5:00 PM - 5:15 PM	1													
5:15 PM - 5:30 PM	1													
5:30 PM - 5:45 PM			3											
5:45 PM - 6:00 PM		2	1	1										
6:00 PM - 6:15 PM														
6:15 PM - 6:30 PM			1	2										
6:30 PM - 6:45 PM				1										
6:45 PM - 7:00 PM			1	1										
Total	3	4	12	5	0	0	0	0						
PM One Hour Volumes														
4:00 PM - 5:00 PM	1	2	6	0	0	0	0	0		3	6	0	0	9
4:15 PM - 5:15 PM	1	2	3	0	0	0	0	0		3	3	0	0	6
4:30 PM - 5:30 PM	2	2	3	0	0	0	0	0		4	3	0	0	7
4:45 PM - 5:45 PM	2	0	3	0	0	0	0	0		2	3	0	0	5
5:00 PM - 6:00 PM	2	2	4	1	0	0	0	0		4	5	0	0	9
5:15 PM - 6:15 PM	1	2	4	1	0	0	0	0		3	5	0	0	8
5:30 PM - 6:30 PM	0	2	5	3	0	0	0	0		2	8	0	0	10
5:45 PM - 6:45 PM	0	2	2	4	0	0	0	0		2	6	0	0	8
6:00 PM - 7:00 PM	0	0	2	4	0	0	0	0		0	6	0	0	6

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - All Vehicles

PROJECT: YMCA Urbana					DATE: 4/25/2018					SOUTHBOUND ROAD: Sugarloaf Parkway													
W+A JOB NO: 7510					DAY: Wednesday					NORTHBOUND ROAD: Sugarloaf Parkway													
INTERSECTION: MD Route 80 & Sugarloaf Pkwy.					WEATHER: clear					WESTBOUND ROAD: Fingerboard Road 80													
LOCATION: Frederick County,MD					COUNTED BY: Katy,Luz & Vic					EASTBOUND ROAD: Fingerboard Road 80													
					INPUTED BY: agan																		
Time Period	Southbound Sugarloaf Parkway					Westbound Fingerboard Road 80					Northbound Sugarloaf Parkway					Eastbound Fingerboard Road 80					North & South	East & West	Total
	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF			
AM 15 Minute Volumes																							
6:00 AM - 6:15 AM	24	4	5	33		5	87	4	96		6	5	4	15		0	38	9	47		48	143	191
6:15 AM - 6:30 AM	37	3	2	42		0	118	6	124		1	1	4	6		2	51	8	61		48	185	233
6:30 AM - 6:45 AM	76	5	5	86		2	107	9	118		1	2	9	12		6	52	15	73		98	191	289
6:45 AM - 7:00 AM	43	1	2	46		0	131	4	135		0	0	8	8		5	95	19	119		54	254	308
7:00 AM - 7:15 AM	53	5	2	60		0	156	8	164		1	0	6	7		4	112	17	133		67	297	364
7:15 AM - 7:30 AM	75	2	1	78		0	186	11	197		3	3	11	17		2	130	24	156		95	353	448
7:30 AM - 7:45 AM	78	6	2	86		0	155	7	162		1	5	6	12		2	139	16	157		98	319	417
7:45 AM - 8:00 AM	68	8	4	80		1	190	13	204		0	0	4	4		8	139	28	175		84	379	463
8:00 AM - 8:15 AM	59	7	1	67		5	178	13	196		0	5	10	15		7	91	28	126		82	322	404
8:15 AM - 8:30 AM	67	10	5	82		0	172	23	195		1	12	8	21		3	82	27	112		103	307	410
8:30 AM - 8:45 AM	61	6	2	69		5	143	5	153		4	13	9	26		19	98	16	133		95	286	381
8:45 AM - 9:00 AM	62	6	5	73		2	135	15	152		1	8	2	11		29	101	38	168		84	320	404
Total	703	63	36	802		20	1758	118	1896		19	54	81	154		87	1128	245	1460		956	3356	4312
AM One Hour Volumes																							
6:00 AM - 7:00 AM	180	13	14	207	0.60	7	443	23	473	0.88	8	8	25	41	0.68	13	236	51	300	0.63	248	773	1021
6:15 AM - 7:15 AM	209	14	11	234	0.68	2	512	27	541	0.82	3	3	27	33	0.69	17	310	59	386	0.73	267	927	1194
6:30 AM - 7:30 AM	247	13	10	270	0.78	2	580	32	614	0.78	5	5	34	44	0.65	17	389	75	481	0.77	314	1095	1409
6:45 AM - 7:45 AM	249	14	7	270	0.78	0	628	30	658	0.84	5	8	31	44	0.65	13	476	76	565	0.90	314	1223	1537
7:00 AM - 8:00 AM	274	21	9	304	0.88	1	687	39	727	0.89	5	8	27	40	0.59	16	520	85	621	0.89	344	1348	1692
7:15 AM - 8:15 AM	280	23	8	311	0.90	6	709	44	759	0.93	4	13	31	48	0.71	19	499	96	614	0.88	359	1373	1732
7:30 AM - 8:30 AM	272	31	12	315	0.92	6	695	56	757	0.93	2	22	28	52	0.62	20	451	99	570	0.81	367	1327	1694
7:45 AM - 8:45 AM	255	31	12	298	0.91	11	683	54	748	0.92	5	30	31	66	0.63	37	410	99	546	0.78	364	1294	1658
8:00 AM - 9:00 AM	249	29	13	291	0.89	12	628	56	696	0.89	6	38	29	73	0.70	58	372	109	539	0.80	364	1235	1599
PM 15 Minute Volumes																							
4:00 PM - 4:15 PM	40	1	3	44		3	106	4	113		6	8	21	35		5	140	52	197		79	310	389
4:15 PM - 4:30 PM	28	4	0	32		2	102	3	107		5	6	10	21		3	147	53	203		53	310	363
4:30 PM - 4:45 PM	33	0	2	35		3	140	8	151		0	4	17	21		2	149	64	215		56	366	422
4:45 PM - 5:00 PM	36	6	3	45		2	106	4	112		1	9	9	19		3	173	60	236		64	348	412
5:00 PM - 5:15 PM	39	2	4	45		0	107	6	113		9	22	31	62		1	177	81	259		107	372	479
5:15 PM - 5:30 PM	31	4	1	36		4	100	10	114		13	5	21	39		2	199	111	312		75	426	501
5:30 PM - 5:45 PM	26	2	1	29		3	106	7	116		8	10	21	39		1	191	77	269		68	385	453
5:45 PM - 6:00 PM	24	3	7	34		3	103	7	113		7	9	16	32		0	171	75	246		66	359	425
6:00 PM - 6:15 PM	36	4	0	40		5	70	12	87		8	5	13	26		10	167	73	250		66	337	403
6:15 PM - 6:30 PM	22	2	0	24		2	73	15	90		5	4	3	12		11	171	76	258		36	348	384
6:30 PM - 6:45 PM	27	1	1	29		0	75	4	79		0	5	6	11		6	186	54	246		40	325	365
6:45 PM - 7:00 PM	24	2	4	30		0	83	3	86		1	2	8	11		2	146	83	231		41	317	358
Total	366	31	26	423		27	1171	83	1281		63	89	176	328		46	2017	859	2922		751	4203	4954
PM One Hour Volumes																							
4:00 PM - 5:00 PM	137	11	8	156	0.87	10	454	19	483	0.80	12	27	57	96	0.69	13	609	229	851	0.90	252	1334	1586
4:15 PM - 5:15 PM	136	12	9	157	0.87	7	455	21	483	0.80	15	41	67	123	0.50	9	646	258	913	0.88	280	1396	1676
4:30 PM - 5:30 PM	139	12	10	161	0.89	9	453	28	490	0.81	23	40	78	141	0.57	8	698	316	1022	0.82	302	1512	1814
4:45 PM - 5:45 PM	132	14	9	155	0.86	9	419	27	455	0.98	31	46	82	159	0.64	7	740	329	1076	0.86	314	1531	1845
5:00 PM - 6:00 PM	120	11	13	144	0.80	10	416	30	456	0.98	37	46	89	172	0.69	4	738	344	1086	0.87	316	1542	1858
5:15 PM - 6:15 PM	117	13	9	139	0.87	15	379	36	430	0.93	36	29	71	136	0.87	13	728	336	1077	0.86	275	1507	1782
5:30 PM - 6:30 PM	108	11	8	127	0.79	13	352	41	406	0.88	28	28	53	109	0.70	22	700	301	1023	0.95	236	1429	1665
5:45 PM - 6:45 PM	109	10	8	127	0.79	10	321	38	369	0.82	20	23	38	81	0.63	27	695	278	1000	0.97	208	1369	1577
6:00 PM - 7:00 PM	109	9	5	123	0.77	7	301	34	342	0.95	14	16	30	60	0.58	29	670	286	985	0.95	183	1327	1510

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - Bicycles

PROJECT: YMCA Urbana				DATE: 4/25/2018				SOUTHBOUND ROAD: Sugarloaf Parkway											
W+A JOB NO: 7510				DAY: Wednesday				NORTHBOUND ROAD: Sugarloaf Parkway											
INTERSECTION: MD Route 80 & Sugarloaf Pkwy.				WEATHER: clear				WESTBOUND ROAD: Fingerboard Road 80											
LOCATION: Frederick County,MD				COUNTED BY: Vic				EASTBOUND ROAD: Fingerboard Road 80											
INPUTED BY: agan																			
Time Period	Southbound Sugarloaf Parkway				Westbound Fingerboard Road 80				Northbound Sugarloaf Parkway				Eastbound Fingerboard Road 80				North & South	East & West	Total
	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total			
AM 15 Minute Volumes																			
6:00 AM - 6:15 AM				0				0				0				0	0	0	0
6:15 AM - 6:30 AM				0				0				0				0	0	0	0
6:30 AM - 6:45 AM				0				0				0				0	0	0	0
6:45 AM - 7:00 AM				0				0				0				0	0	0	0
7:00 AM - 7:15 AM				0				0				0				0	0	0	0
7:15 AM - 7:30 AM				0				0				0				0	0	0	0
7:30 AM - 7:45 AM				0				0				0				0	0	0	0
7:45 AM - 8:00 AM				0				0				0				0	0	0	0
8:00 AM - 8:15 AM				0				0				0				0	0	0	0
8:15 AM - 8:30 AM				0				0				0				0	0	0	0
8:30 AM - 8:45 AM				0				0				0				0	0	0	0
8:45 AM - 9:00 AM				0				0				0				0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM One Hour Volumes																			
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 15 Minute Volumes																			
4:00 PM - 4:15 PM				0				0				0				0	0	0	0
4:15 PM - 4:30 PM				0				0				0				0	0	0	0
4:30 PM - 4:45 PM				0				0				0				0	0	0	0
4:45 PM - 5:00 PM				0				0				0				0	0	0	0
5:00 PM - 5:15 PM				0				0				0				0	0	0	0
5:15 PM - 5:30 PM				0				0				0				0	0	0	0
5:30 PM - 5:45 PM				0				0				0				0	0	0	0
5:45 PM - 6:00 PM				0				0				0				0	0	0	0
6:00 PM - 6:15 PM				0				0				0				0	0	0	0
6:15 PM - 6:30 PM				0				0				0				0	0	0	0
6:30 PM - 6:45 PM				0				0				0				0	0	0	0
6:45 PM - 7:00 PM				0				0				0				0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM One Hour Volumes																			
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wells + Associates, Inc.

McLean, Virginia

Pedestrian Volume Survey

PROJECT: YMCA Urbana W+A JOB NO: 7510 INTERSECTION: MD Route 80 & Sugarloaf Pkwy. LOCATION: Frederick County,MD DATE: 4/25/2018 DAY: Wednesday WEATHER: clear COUNTED BY: Luz INPUTED BY: agan Sugarloaf Parkway Fingerboard Road 80 Fingerboard Road 80 Sugarloaf Parkway North														
Time Period	Movement													
	1	2	3	4	5	6	7	8	1 + 2	3 + 4	5 + 6	7+ 8	Total	
AM 15 Minute Volumes														
6:00 AM - 6:15 AM														
6:15 AM - 6:30 AM														
6:30 AM - 6:45 AM														
6:45 AM - 7:00 AM														
7:00 AM - 7:15 AM														
7:15 AM - 7:30 AM														
7:30 AM - 7:45 AM														
7:45 AM - 8:00 AM														
8:00 AM - 8:15 AM														
8:15 AM - 8:30 AM														
8:30 AM - 8:45 AM														
8:45 AM - 9:00 AM														
Total	0	0	0	0	0	0	0	0						
AM One Hour Volumes														
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM 15 Minute Volumes														
4:00 PM - 4:15 PM														
4:15 PM - 4:30 PM														
4:30 PM - 4:45 PM														
4:45 PM - 5:00 PM														
5:00 PM - 5:15 PM														
5:15 PM - 5:30 PM														
5:30 PM - 5:45 PM														
5:45 PM - 6:00 PM														
6:00 PM - 6:15 PM														
6:15 PM - 6:30 PM														
6:30 PM - 6:45 PM														
6:45 PM - 7:00 PM														
Total	0	0	0	0	0	0	0	0						
PM One Hour Volumes														
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM - 6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM - 6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM - 6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	

Appendix B: Traffic Count Data

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - All Vehicles

PROJECT: YMCA Urbana					DATE: 4/25/2018					SOUTHBOUND ROAD: Urbana Pike - 355													
W+A JOB NO: 7510					DAY: Wednesday					NORTHBOUND ROAD: Urbana Pike - 355													
INTERSECTION: MD Route 355 & Campus Dr.					WEATHER: clear					WESTBOUND ROAD: Campus Drive													
LOCATION: Frederick County,MD					COUNTED BY: Muha & Teuta					EASTBOUND ROAD: Knowledge Farm Drive													
INPUT BY: agan																							
Time Period	Southbound Urbana Pike - 355					Westbound Campus Drive					Northbound Urbana Pike - 355					Eastbound Knowledge Farm Drive					North & South	East & West	Total
	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF			
AM 15 Minute Volumes																							
6:00 AM - 6:15 AM	0	209	0	209		0	0	2	2		3	13	0	16		1	0	1	2		225	4	229
6:15 AM - 6:30 AM	2	226	1	229		0	0	0	0		1	14	0	15		0	0	0	0		244	0	244
6:30 AM - 6:45 AM	1	173	2	176		0	0	2	2		1	21	0	22		0	0	0	0		198	2	200
6:45 AM - 7:00 AM	5	215	32	252		0	0	0	0		16	26	0	42		0	0	0	0		294	0	294
7:00 AM - 7:15 AM	1	182	138	321		29	0	1	30		98	34	0	132		0	0	0	0		453	30	483
7:15 AM - 7:30 AM	8	194	145	347		65	1	9	75		68	41	0	109		0	0	0	0		456	75	531
7:30 AM - 7:45 AM	13	199	3	215		8	0	1	9		2	37	1	40		0	0	3	3		255	12	267
7:45 AM - 8:00 AM	7	226	2	235		2	0	0	2		1	45	2	48		0	0	1	1		283	3	286
8:00 AM - 8:15 AM	14	179	1	194		2	0	3	5		4	44	0	48		1	0	4	5		242	10	252
8:15 AM - 8:30 AM	8	139	3	150		1	0	4	5		0	61	0	61		0	1	3	4		211	9	220
8:30 AM - 8:45 AM	10	173	2	185		0	1	1	2		1	57	1	59		1	0	3	4		244	6	250
8:45 AM - 9:00 AM	11	146	7	164		2	0	2	4		2	52	0	54		1	0	5	6		218	10	228
Total	80	2261	336	2677		109	2	25	136		197	445	4	646		4	1	20	25		3323	161	3484
AM One Hour Volumes																							
6:00 AM - 7:00 AM	8	823	35	866	0.86	0	0	4	4	0.50	21	74	0	95	0.57	1	0	1	2	0.25	961	6	967
6:15 AM - 7:15 AM	9	796	173	978	0.76	29	0	3	32	0.27	116	95	0	211	0.40	0	0	0	0	0.00	1189	32	1221
6:30 AM - 7:30 AM	15	764	317	1096	0.79	94	1	12	107	0.36	183	122	0	305	0.58	0	0	0	0	0.00	1401	107	1508
6:45 AM - 7:45 AM	27	790	318	1135	0.82	102	1	11	114	0.38	184	138	1	323	0.61	0	0	3	3	0.25	1458	117	1575
7:00 AM - 8:00 AM	29	801	288	1118	0.81	104	1	11	116	0.39	169	157	3	329	0.62	0	0	4	4	0.33	1447	120	1567
7:15 AM - 8:15 AM	42	798	151	991	0.71	77	1	13	91	0.30	75	167	3	245	0.56	1	0	8	9	0.45	1236	100	1336
7:30 AM - 8:30 AM	42	743	9	794	0.84	13	0	8	21	0.58	7	187	3	197	0.81	1	1	11	13	0.65	991	34	1025
7:45 AM - 8:45 AM	39	717	8	764	0.81	5	1	8	14	0.70	6	207	3	216	0.89	2	1	11	14	0.70	980	28	1008
8:00 AM - 9:00 AM	43	637	13	693	0.89	5	1	10	16	0.80	7	214	1	222	0.91	3	1	15	19	0.79	915	35	950
PM 15 Minute Volumes																							
4:00 PM - 4:15 PM	5	61	3	69		2	0	4	6		7	202	4	213		1	1	11	13		282	19	301
4:15 PM - 4:30 PM	5	67	5	77		10	0	2	12		4	185	0	189		1	1	10	12		266	24	290
4:30 PM - 4:45 PM	4	80	9	93		14	0	5	19		8	204	2	214		0	0	8	8		307	27	334
4:45 PM - 5:00 PM	2	60	14	76		7	0	1	8		7	223	1	231		1	1	14	16		307	24	331
5:00 PM - 5:15 PM	4	70	5	79		19	0	10	29		10	200	2	212		5	2	16	23		291	52	343
5:15 PM - 5:30 PM	1	75	18	94		7	0	3	10		14	208	1	223		1	0	4	5		317	15	332
5:30 PM - 5:45 PM	2	41	11	54		4	0	1	5		11	194	2	207		0	1	7	8		261	13	274
5:45 PM - 6:00 PM	3	50	7	60		3	0	0	3		12	171	1	184		2	3	1	6		244	9	253
6:00 PM - 6:15 PM	4	51	4	59		4	0	3	7		9	134	1	144		1	0	5	6		203	13	216
6:15 PM - 6:30 PM	2	65	7	74		6	0	1	7		8	140	1	149		0	1	3	4		223	11	234
6:30 PM - 6:45 PM	2	49	4	55		4	0	3	7		7	125	0	132		0	0	3	3		187	10	197
6:45 PM - 7:00 PM	0	48	9	57		5	0	2	7		3	96	1	100		0	1	3	4		157	11	168
Total	34	717	96	847		85	0	35	120		100	2082	16	2198		12	11	85	108		3045	228	3273
PM One Hour Volumes																							
4:00 PM - 5:00 PM	16	268	31	315	0.85	33	0	12	45	0.59	26	814	7	847	0.92	3	3	43	49	0.77	1162	94	1256
4:15 PM - 5:15 PM	15	277	33	325	0.87	50	0	18	68	0.59	29	812	5	846	0.92	7	4	48	59	0.64	1171	127	1298
4:30 PM - 5:30 PM	11	285	46	342	0.91	47	0	19	66	0.57	39	835	6	880	0.95	7	3	42	52	0.57	1222	118	1340
4:45 PM - 5:45 PM	9	246	48	303	0.81	37	0	15	52	0.45	42	825	6	873	0.94	7	4	41	52	0.57	1176	104	1280
5:00 PM - 6:00 PM	10	236	41	287	0.76	33	0	14	47	0.41	47	773	6	826	0.93	8	6	28	42	0.46	1113	89	1202
5:15 PM - 6:15 PM	10	217	40	267	0.71	18	0	7	25	0.63	46	707	5	758	0.85	4	4	17	25	0.78	1025	50	1075
5:30 PM - 6:30 PM	11	207	29	247	0.83	17	0	5	22	0.79	40	639	5	684	0.83	3	5	16	24	0.75	931	46	977
5:45 PM - 6:45 PM	11	215	22	248	0.84	17	0	7	24	0.86	36	570	3	609	0.83	3	4	12	19	0.79	857	43	900
6:00 PM - 7:00 PM	8	213	24	245	0.83	19	0	9	28	1.00	27	495	3	525	0.88	1	2	14	17	0.71	770	45	815

Maryland Department of Transportation
State Highway Administration Data Services Engineering Division
Turning Movement Count Study - Field Sheet

Comments:

County: Frederick

Station ID: S2011100004

Date: Tuesday 02/13/2018

Town: none

Location: MD 80 at RAMPS 3&4 TO & FR IS 2

Weather: Cloudy/Cold

Interval (dd): 15 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Start		LOS	V/C	PM PERIOD 12:00PM-19:00P		End	Frede	Volume	LOS	V/C
		08:15	Frede			17:00	Frede					
				A	0.43					2377	A	0.55

Hour Ending	Ramps 3&4 TO & FR IS 270 NB					ENT TO PARK & RIDE					MD 80					MD 80					Grand Total
	From North			TOTAL		From South			TOTAL		From East			TOTAL		From West			TOTAL		
	U.Turn	Left	Through	Right		U.Turn	Left	Through	Right		U.Turn	Left	Through	Right		U.Turn	Left	Through	Right		
6:15	0	17	0	2	19	0	3	0	0	3	0	7	97	42	146	0	6	48	3	57	226
6:30	0	18	0	2	20	0	2	1	1	4	0	13	109	43	165	0	11	61	1	73	200
6:45	1	46	0	5	52	0	1	1	0	2	0	19	97	64	180	0	16	67	1	84	315
7:00	0	29	0	4	33	0	4	1	2	7	0	16	97	64	177	0	19	60	4	83	300
7:15	0	47	0	3	50	0	2	1	1	4	1	13	112	105	231	0	27	84	4	115	404
7:30	0	47	0	10	57	0	4	0	5	9	0	11	121	114	246	0	32	74	5	111	423
7:45	0	29	0	7	36	0	0	0	1	1	0	9	131	124	264	0	33	66	3	102	403
8:00	0	47	0	9	56	0	2	2	4	8	1	4	117	112	234	0	32	65	0	97	395
8:15	0	58	0	10	68	0	0	0	1	1	0	1	145	115	261	0	25	90	0	115	445
8:30	0	31	0	10	41	0	0	0	0	0	1	0	121	119	241	0	24	99	0	123	405
8:45	0	62	0	10	72	0	0	0	0	0	0	1	102	137	240	0	31	118	0	149	461
9:00	0	44	1	12	57	0	0	1	0	1	0	0	92	124	216	0	25	111	0	136	410
9:15	0	43	0	4	47	0	0	0	0	0	0	2	107	92	201	0	22	78	1	101	349
9:30	0	37	0	2	39	0	0	0	0	0	0	1	97	92	190	0	12	91	1	104	333
9:45	0	31	0	7	38	0	0	0	3	3	0	2	93	93	188	0	22	103	0	125	354
10:00	0	41	0	4	45	0	0	0	0	0	0	1	88	72	161	0	13	88	0	101	307
10:15	0	43	0	1	44	0	0	0	1	1	1	0	71	95	167	0	18	73	1	92	304
10:30	0	42	0	1	43	0	0	0	0	0	0	0	63	76	139	0	18	90	1	109	291
10:45	0	33	1	10	44	0	0	0	0	0	1	0	60	91	152	0	19	76	0	95	291
11:00	0	36	0	4	40	0	0	0	0	0	0	0	26	81	107	0	14	65	0	79	226

Station ID: S2011100004

Date: Tuesday 02/13/2018

Location: MD 80 at RAMPS 3&4 TO & FR IS 2

Interval (dd): 15 min

County: Frederick

Town: none

Weather: Cloudy/Cold

Comments:

PEAK HOURS	AM PERIOD 6:00AM-12:00PM		Start 08:15	End Frede	Volume 1720	LOS A	V/C 0.43	PM PERIOD 12:00PM-19:00P		Start 17:00	End Frede	Volume 2377	LOS A	V/C 0.55

11:15	0	48	0	4	52	0	0	0	0	1	1	60	99	161	0	12	79	1	92	306
11:30	0	46	0	0	46	0	0	0	0	0	0	46	74	120	0	14	77	0	91	257
11:45	0	25	0	4	29	0	0	0	0	3	3	39	73	113	0	29	46	3	78	223
12:00	0	38	0	4	42	0	1	0	0	0	1	42	96	138	0	13	71	0	84	265
12:15	0	39	1	3	43	0	0	0	0	1	1	58	91	150	0	17	81	0	98	292
12:30	0	65	0	3	68	0	0	0	0	0	1	67	94	162	1	12	88	0	100	330
12:45	0	65	1	5	71	0	0	1	0	1	0	63	95	158	0	11	90	1	102	330
13:00	0	52	1	5	58	0	1	0	0	0	0	52	70	122	0	20	96	0	116	290
13:15	0	72	1	15	88	0	0	1	1	1	2	53	91	144	0	14	82	1	97	330
13:30	0	56	0	9	65	0	0	0	3	1	4	56	132	191	1	15	115	0	130	390
13:45	0	70	0	15	85	0	0	0	0	0	0	64	176	241	0	26	77	1	104	430
14:00	0	93	1	14	108	0	0	0	0	1	1	41	191	233	0	24	106	0	130	470
14:15	0	69	0	15	84	0	0	0	1	0	1	65	215	280	0	42	127	2	171	530
14:30	0	96	1	5	102	0	0	1	2	3	0	82	218	302	2	22	119	0	141	540
14:45	0	99	0	15	114	0	0	1	1	2	0	70	206	277	0	19	121	9	149	540
15:00	0	81	4	22	107	0	0	4	2	6	0	75	186	261	1	11	129	1	142	510
15:15	0	86	3	17	106	0	2	4	2	8	2	73	149	224	0	16	112	2	130	468
15:30	0	85	4	8	97	0	0	8	4	12	0	5	126	252	0	18	133	4	155	516
15:45	0	103	2	31	136	0	2	5	2	9	0	93	146	240	0	11	134	1	146	531
16:00	0	104	1	23	128	0	0	6	0	6	0	4	104	258	0	11	117	0	128	520
16:15	0	119	8	13	140	0	4	9	21	34	0	1	102	262	0	8	120	2	130	566
16:30	0	86	3	18	107	0	2	1	5	8	0	2	98	228	0	15	157	1	173	516
16:45	0	102	3	17	122	0	0	8	13	21	0	0	102	228	0	13	155	0	168	539
17:00	0	126	6	21	153	0	2	2	13	17	2	3	114	214	0	30	136	1	167	551
17:15	0	129	10	13	152	0	0	12	14	26	0	2	100	235	0	6	163	1	170	583
17:30	0	118	7	11	136	0	2	19	21	42	0	3	142	264	0	5	174	1	180	622

Station ID:

S2011100004

County:

Frederick

Comments:

Date:

Tuesday 02/13/2018

Town:

none

Location:

MD 80 at RAMPS 3&4 TO & FR IS 2

Weather:

Cloudy/Cold

Interval (dd):

15 min

17:45	0	121	4	14	139	0	0	4	21	25	1	3	164	91	249	0	17	192	2	211	624
18:00	0	148	4	17	169	0	3	4	10	17	0	1	96	78	175	0	12	174	1	187	548
18:15	0	119	2	8	129	0	0	0	12	12	1	6	79	114	200	0	22	143	0	165	506
18:30	0	109	3	17	129	0	1	8	14	23	0	1	102	110	213	0	10	180	1	191	556
18:45	0	125	3	14	142	0	0	6	7	13	1	5	70	82	158	0	16	115	0	131	444
19:00	0	119	1	22	142	0	1	2	18	21	0	2	86	77	165	0	11	132	1	144	472
TOTAL:	1	3594	76	519	4190	0	39	117	209	365	17	147	4520	5840	10524	1	941	5448	62	6452	21536
AM Peak:	0	195	1	42	238	0	0	1	1	2	1	2	460	495	957	0	105	418	0	523	1720
PM Peak:	0	494	27	59	580	0	4	37	69	110	3	11	510	438	959	0	58	665	5	728	2372

B: Traffic Count Data

106 AM 422 AM
54 PM 672 PM

464 AM 500 AM
515 PM 442 PM

197 AM 42 AM
449 PM 60 PM

Appendix B: Traffic Count Data

Station ID: S2011100004 **County:** Frederick **Comments:**
Date: Tuesday 02/13/2018 **Town:** none
Location: MD 80 at RAMPS 3&4 TO & FR IS 2 **Weather:** Cloudy/Cold
Interval (dd): 15 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Start	End	Volume	LOS	V/C	PM PERIOD 12:00PM-19:00P	Start	End	Volume	LOS	V/C
		08:15	Frede	1720	A	0.43		17:00	Frede	2377	A	0.55

Hour Ending	Ramps 3&4 TO & FR IS 270 NB				ENT TO PARK & RIDE				MD 80 East Leg				MD 80 West Leg			
	School Children	Pedestrians	Bicycles		School Children	Pedestrians	Bicycles		School Children	Pedestrians	Bicycles		School Children	Pedestrians	Bicycles	
6:15	0	0	0		0	0	0		0	0	0		0	0	0	
6:30	0	0	0		0	0	0		0	0	0		0	0	0	
6:45	0	0	0		0	0	0		0	0	0		0	0	0	
7:00	0	0	0		0	0	0		0	0	0		0	0	0	
7:15	0	0	0		0	0	0		0	0	0		0	0	0	
7:30	0	0	0		0	1	0		0	1	0		0	0	0	
7:45	0	0	0		0	0	0		0	0	0		0	0	0	
8:00	0	0	0		0	0	0		0	0	0		0	0	0	
8:15	0	0	0		0	0	0		0	0	0		0	0	0	
8:30	0	0	0		0	0	0		0	0	0		0	0	0	
8:45	0	0	0		0	0	0		0	0	0		0	0	0	
9:00	0	0	0		0	0	0		0	0	0		0	0	0	
9:15	0	0	0		0	0	0		0	0	0		0	0	0	
9:30	0	0	0		0	0	0		0	0	0		0	0	0	
9:45	0	0	0		0	0	0		0	0	0		0	0	0	
10:00	0	0	0		0	0	0		0	0	0		0	0	0	
10:15	0	0	0		0	0	0		0	0	0		0	0	0	
10:30	0	0	0		0	0	0		0	0	0		0	0	0	
10:45	0	0	0		0	0	0		0	0	0		0	0	0	
11:00	0	0	0		0	0	0		0	0	0		0	0	0	
11:15	0	0	0		0	0	0		0	0	0		0	0	0	
11:30	0	0	0		0	0	0		0	0	0		0	0	0	
11:45	0	0	0		0	0	0		0	0	0		0	0	0	
12:00	0	0	0		0	0	0		0	0	0		0	0	0	
12:15	0	0	0		0	0	0		0	0	0		0	0	0	
12:30	0	0	0		0	0	0		0	0	0		0	0	0	
12:45	0	0	0		0	0	0		0	0	0		0	0	0	
13:00	0	0	0		0	0	0		0	0	0		0	0	0	

Appendix B: Traffic Count Data

Station ID:

S2011100004

County: Frederick

Comments:

Date: Tuesday 02/13/2018

Town: none

Weather: Cloudy/Cold

Location: MD 80 at RAMPS 3&4 TO & FR IS 2

Interval: 15 min

(dd):	PEAK HOURS	AM PERIOD 6:00AM-12:00PM		Start 08:15	End Frede	Volume 1720	LOS A	V/C 0.43	PM PERIOD 12:00PM-19:00P		Start 17:00	End Frede	Volume 2377	LOS A	V/C 0.55					
13:15																				
13:30																				
13:45																				
14:00																				
14:15																				
14:30																				
14:45																				
15:00																				
15:15																				
15:30									1											
15:45																				
16:00																				
16:15																				
16:30																				
16:45																				
17:00																				
17:15																				
17:30																				
17:45									1											
18:00																				
18:15									1											
18:30																				
18:45																				
19:00																				
Total:				1					4											
AM Pe																				
PM Pe									1											

Appendix B: Traffic Count Data

Wells + Associates, Inc

Tysons, Virginia

Turning Movement Count - Total Vehicles

PROJECT: Knowledge Farms W+A JOB NO: 8513 INTERSECTION: Urbana Pike & Urbana Pkwy. LOCATION: Frederick County,MD						DATE: 11/16/2021 DAY: Tuesday WEATHER: clear COUNTED BY: Agan INPUTED BY: agan						SOUTHBOUND ROAD: Urbana Pike - 355 NORTHBOUND ROAD: Urbana Pike - 355 WESTBOUND ROAD: 0 EASTBOUND ROAD: Urbana Parkway															
Time Period	Southbound Urbana Pike - 355					Westbound 0					Northbound Urbana Pike - 355					Eastbound Urbana Parkway					North & South	East & West	Total				
	Right	Thru	Left	U-Turn	Total	PHF	Right	Thru	Left	U-Turn	Total	PHF	Right	Thru	Left	U-Turn	Total	PHF									
15 Minute Volumes																											
6:00 AM - 6:15 AM	0	94	0	0	94		0	0	0	0	0		0	4	3	0	7		2	0	1	0	3		101	3	104
6:15 AM - 6:30 AM	2	205	0	0	207		0	0	0	0	0		0	11	3	0	14		4	0	0	0	4		221	4	225
6:30 AM - 6:45 AM	2	214	0	0	216		0	0	0	0	0		0	16	2	0	18		1	0	1	0	2		234	2	236
6:45 AM - 7:00 AM	3	233	0	0	236		0	0	0	0	0		0	31	1	0	32		6	0	0	0	6		268	6	274
7:00 AM - 7:15 AM	3	314	0	0	317		0	0	0	0	0		0	92	6	0	98		19	0	1	0	20		415	20	435
7:15 AM - 7:30 AM	3	275	0	0	278		0	0	0	0	0		0	165	10	0	175		14	0	1	0	15		453	15	468
7:30 AM - 7:45 AM	9	175	0	0	184		0	0	0	0	0		0	84	6	0	90		6	0	0	0	6		274	6	280
7:45 AM - 8:00 AM	11	152	0	0	163		0	0	0	0	0		0	54	4	0	58		8	0	0	0	8		221	8	229
8:00 AM - 8:15 AM	6	170	0	0	176		0	0	0	0	0		0	44	7	0	51		4	0	1	0	5		227	5	232
8:15 AM - 8:30 AM	7	165	0	0	172		0	0	0	0	0		0	47	2	0	49		2	0	5	0	7		221	7	228
8:30 AM - 8:45 AM	3	134	0	0	137		0	0	0	0	0		0	43	4	0	47		5	0	2	0	7		184	7	191
8:45 AM - 9:00 AM	10	156	0	0	166		0	0	0	0	0		0	39	2	0	41		7	0	6	0	13		207	13	220
4:00 PM - 4:15 PM	3	63	0	0	66		0	0	0	0	0		0	163	8	0	171		4	0	8	0	12		237	12	249
4:15 PM - 4:30 PM	9	72	0	0	81		0	0	0	0	0		0	172	8	0	180		6	0	9	0	15		261	15	276
4:30 PM - 4:45 PM	8	90	0	0	98		0	0	0	0	0		0	163	8	0	171		4	0	6	0	10		269	10	279
4:45 PM - 5:00 PM	11	90	0	0	101		0	0	0	0	0		0	188	7	0	195		7	0	8	0	15		296	15	311
5:00 PM - 5:15 PM	8	78	0	0	86		0	0	0	0	0		0	216	15	0	231		7	0	11	0	18		317	18	335
5:15 PM - 5:30 PM	8	83	0	0	91		0	0	0	0	0		0	148	5	0	153		4	0	3	0	7		244	7	251
5:30 PM - 5:45 PM	8	68	0	0	76		0	0	0	0	0		0	131	4	0	135		6	0	5	0	11		211	11	222
5:45 PM - 6:00 PM	2	64	0	0	66		0	0	0	0	0		0	125	4	0	129		6	0	6	0	12		195	12	207
6:00 PM - 6:15 PM	3	68	0	0	71		0	0	0	0	0		0	121	5	0	126		8	0	3	0	11		197	11	208
6:15 PM - 6:30 PM	1	42	0	0	43		0	0	0	0	0		0	86	0	0	86		4	0	2	0	6		129	6	135
6:30 PM - 6:45 PM	2	44	0	0	46		0	0	0	0	0		0	61	2	0	63		7	0	3	0	10		109	10	119
6:45 PM - 7:00 PM	0	49	0	0	49		0	0	0	0	0		0	56	1	0	57		1	0	1	0	2		106	2	108
Total	325	5518	0	0	5843		0	0	0	0	0		0	4501	225	0	4726		287	0	261	0	548		10569	548	11117
One Hour Volumes																											
6:00 AM - 7:00 AM	7	746	0	0	753	0.798	0	0	0	0	0		0	62	9	0	71	0.555	13	0	2	0	15	0.625	824	15	839
6:15 AM - 7:15 AM	10	966	0	0	976	0.77	0	0	0	0	0		0	150	12	0	162	0.413	30	0	2	0	32	0.4	1138	32	1170
6:30 AM - 7:30 AM	11	1036	0	0	1047	0.826	0	0	0	0	0		0	304	19	0	323	0.461	40	0	3	0	43	0.538	1370	43	1413
6:45 AM - 7:45 AM	18	997	0	0	1015	0.8	0	0	0	0	0		0	372	23	0	395	0.564	45	0	2	0	47	0.588	1410	47	1457
7:00 AM - 8:00 AM	26	916	0	0	942	0.743	0	0	0	0	0		0	395	26	0	421	0.601	47	0	2	0	49	0.613	1363	49	1412
7:15 AM - 8:15 AM	29	772	0	0	801	0.72	0	0	0	0	0		0	347	27	0	374	0.534	32	0	2	0	34	0.567	1175	34	1209
7:30 AM - 8:30 AM	33	662	0	0	695	0.944	0	0	0	0	0		0	229	19	0	248	0.689	20	0	6	0	26	0.813	943	26	969
7:45 AM - 8:45 AM	27	621	0	0	648	0.92	0	0	0	0	0		0	188	17	0	205	0.884	19	0	8	0	27	0.844	853	27	880
8:00 AM - 9:00 AM	26	625	0	0	651	0.925	0	0	0	0	0		0	173	15	0	188	0.922	18	0	14	0	32	0.615	839	32	871
4:00 PM - 5:00 PM	31	315	0	0	346	0.856	0	0	0	0	0		0	686	31	0	717	0.919	21	0	31	0	52	0.867	1063	52	1115
4:15 PM - 5:15 PM	36	330	0	0	366	0.906	0	0	0	0	0		0	739	38	0	777	0.841	24	0	34	0	58	0.806	1143	58	1201
4:30 PM - 5:30 PM	35	341	0	0	376	0.931	0	0	0	0	0		0	715	35	0	750	0.812	22	0	28	0	50	0.694	1126	50	1176
4:45 PM - 5:45 PM	35	319	0	0	354	0.876	0	0	0	0	0		0	683	31	0	714	0.773	24	0	27	0	51	0.708	1068	51	1119
5:00 PM - 6:00 PM	26	293	0	0	319	0.876	0	0	0	0	0		0	620	28	0	648	0.701	23	0	25	0	48	0.667	967	48	1015
5:15 PM - 6:15 PM	21	283	0	0	304	0.835	0	0	0	0	0		0	525	18	0	543	0.887	24	0	17	0	41	0.854	847	41	888
5:30 PM - 6:30 PM	14	242	0	0	256	0.842	0	0	0	0	0		0	463	13	0	476	0.881	24	0	16	0	40	0.833	732	40	772
5:45 PM - 6:45 PM	8	218	0	0	226	0.796	0	0	0	0	0		0	393	11	0	404	0.783	25	0	14	0	39	0.813	630	39	669
6:00 PM - 7:00 PM	6	203	0	0	209	0.736	0	0	0	0	0		0	324	8	0	332	0.659	20	0	9	0	29	0.659	541	29	570

Appendix B: Traffic Count Data

Wells + Associates, Inc.

Tysons, Virginia

Turning Movement Count - Bicycles

PROJECT: Knowledge Farms		DATE: 11/16/2021		SOUTHBOUND ROAD: Urbana Pike - 355															
W+A JOB NO: 8513		DAY: Tuesday		NORTHBOUND ROAD: Urbana Pike - 355															
INTERSECTION: Urbana Pike & Urbana Pkwy.		WEATHER: clear		WESTBOUND ROAD: 0															
LOCATION: Frederick County,MD		COUNTED BY: Agan		EASTBOUND ROAD: Urbana Parkway															
		INPUTED BY: agan																	
Time Period	Southbound Urbana Pike - 355				Westbound 0				Northbound Urbana Pike - 355				Eastbound Urbana Parkway				North & South	East & West	Total
	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total			
15 Minute Volumes																			
6:00 AM - 6:15 AM			0				0				0				0		0	0	0
6:15 AM - 6:30 AM			0				0				0				0		0	0	0
6:30 AM - 6:45 AM			0				0				0				0		0	0	0
6:45 AM - 7:00 AM			0				0				0				0		0	0	0
7:00 AM - 7:15 AM			0				0				0				0		0	0	0
7:15 AM - 7:30 AM			0				0				0				0		0	0	0
7:30 AM - 7:45 AM			0				0				0				0		0	0	0
7:45 AM - 8:00 AM			0				0				0				0		0	0	0
8:00 AM - 8:15 AM			0				0				0				0		0	0	0
8:15 AM - 8:30 AM			0				0				0				0		0	0	0
8:30 AM - 8:45 AM			0				0				0				0		0	0	0
8:45 AM - 9:00 AM			0				0				0				0		0	0	0
4:00 PM - 4:15 PM			0				0				0				0		0	0	0
4:15 PM - 4:30 PM			0				0				0				0		0	0	0
4:30 PM - 4:45 PM			0				0				0				0		0	0	0
4:45 PM - 5:00 PM			0				0				0				0		0	0	0
5:00 PM - 5:15 PM			0				0				0				0		0	0	0
5:15 PM - 5:30 PM			0				0				0				0		0	0	0
5:30 PM - 5:45 PM			0				0				0				0		0	0	0
5:45 PM - 6:00 PM			0				0				0				0		0	0	0
6:00 PM - 6:15 PM			0				0				0				0		0	0	0
6:15 PM - 6:30 PM			0				0				0				0		0	0	0
6:30 PM - 6:45 PM			0				0				0				0		0	0	0
6:45 PM - 7:00 PM			0				0				0				0		0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix B: Traffic Count Data

Wells + Associates, Inc.

Tysons, Virginia

Turning Movement Count - Bicycles

PROJECT: Knowledge Farms				DATE: 11/16/2021				SOUTHBOUND ROAD: Urbana Pike - 355											
W+A JOB NO: 8513				DAY: Tuesday				NORTHBOUND ROAD: Urbana Pike - 355											
INTERSECTION: Urbana Pike & Urbana Pkwy.				WEATHER: clear				WESTBOUND ROAD: 0											
LOCATION: Frederick County,MD				COUNTED BY: Agan				EASTBOUND ROAD: Urbana Parkway											
				INPUTED BY: agan															
Time Period	Southbound Urbana Pike - 355				Westbound 0				Northbound Urbana Pike - 355				Eastbound Urbana Parkway				North & South	East & West	Total
	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total			
One Hour Volumes																			
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM - 6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM - 6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM - 6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

APPENDIX C

EXISTING CLVs WORKSHETS, HCM REPORTS, AND SIDRA REPORTS

Appendix C: Existing CLVs Worksheets, HCM Reports, and SIDRA Reports

01. MD 80 / Urbana Pike Critical Lane Volume Level of Service Calculations	Intersection: <u>01. MD 80 / Urbana Pike</u> Jurisdiction: <u>Frederick County, Maryland</u> Scenario/Design Year: <u>Existing Conditions</u> Computed by: <u>Wells + Associates</u>	
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AM Peak

Lane Configuration

PM Peak

Intersection Control: Signal: x Stop:
 Split: N/S Ways:

RTOR/Overlap (AM): NB 0 SB 8 EB 0 WB 0
 RTOR/Overlap (PM): NB 0 SB 11 EB 0 WB 0

PCE (AM): NB 1 SB 1 EB 1 WB 1
 PCE (PM): NB 1 SB 1 EB 1 WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume
<199	1.10	1	1.00	A ≤ 1,000
200-599	2.00	2	0.55	B ≤ 1,150
600-799	3.00	3	0.40	C ≤ 1,300
800-999	4.00	4	0.30	D ≤ 1,450
>999	5.00	5	0.25	E ≤ 1,600
		2 lefts	0.60	F > 1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	427	0.55	235	9	1.00	9	244	
WB	TR	871	0.55	479	25	1.00	25	504	*
NB	LTR	149	0.60	89	55	0.00	0	89	*
SB	TR	84	1.00	84	126	0.00	0	84	*
SUM								677	
								<u>A</u>	

Note: The Free-Flow right-turn lane is not long enough to be considered a separate lane and the southbound Urbana Pike approach was analyzed with a shared through-right.

C-1

Appendix C: Existing CLVs Worksheets, HCM Reports, and SIDRA Reports

02. MD 80 / MD 355 (Worthington Boulevard) Critical Lane Volume Level of Service Calculations	Intersection: <u>02. MD 80 / MD 355 (Worthington Boulevard)</u> Jurisdiction: <u>Frederick County, Maryland</u> Scenario/Design Year: <u>Existing Conditions</u> Computed by: <u>Wells + Associates</u>	
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AM Peak

Intersection Control: Signal: x Stop:
 Split: Ways:

Lane Configuration

PM Peak

RTOR/Overlap (AM): NB <u> 17 </u> SB <u> 0 </u> EB <u> 16 </u> WB <u> 167 </u> RTOR/Overlap (PM): NB <u> 137 </u> SB <u> 0 </u> EB <u> 28 </u> WB <u> 163 </u>	PCE (AM): NB <u> 1 </u> SB <u> 1 </u> EB <u> 1 </u> WB <u> 1 </u> PCE (PM): NB <u> 1 </u> SB <u> 1 </u> EB <u> 1 </u> WB <u> 1 </u>	
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Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume	
<199	1.10	1	1.00	A ≤	1,000
200-599	2.00	2	0.55	B ≤	1,150
600-799	3.00	3	0.40	C ≤	1,300
800-999	4.00	4	0.30	D ≤	1,450
>999	5.00	5	0.25	E ≤	1,600
		2 lefts	0.60	F >	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	313	0.55	172	350	1.00	350	522	*
WB	T	789	0.55	434	23	1.00	23	457	
NB	T	83	0.55	46	279	0.60	167	213	
SB	TR	585	0.55	322	26	0.60	16	338	*
							SUM	860	
								<u> A </u>	

Note:

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	859	0.55	472	156	1.00	156	628	*
WB	T	423	0.55	233	103	1.00	103	336	
NB	T	449	0.55	247	272	0.60	163	410	*
SB	TR	176	0.55	97	79	0.60	47	144	
							SUM	1038	
								<u> B </u>	

Note:

Appendix C: Existing CLVs Worksheets, HCM Reports, and SIDRA Reports

03. MD 80 / Campus Drive Critical Lane Volume Level of Service Calculations	Intersection: <u>03. MD 80 / Campus Drive</u> Jurisdiction: <u>Frederick County, Maryland</u> Scenario/Design Year: <u>Existing Conditions</u> Computed by: <u>Wells + Associates</u>	
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AM Peak

Lane Configuration

PM Peak

Intersection Control: Signal: x Stop:
 Split: Ways:

RTOR/Overlap (AM): NB 99 SB 42 EB 130 WB 0
 RTOR/Overlap (PM): NB 58 SB 54 EB 23 WB 0

PCE (AM): NB 2 SB 1.1 EB 1 WB 1
 PCE (PM): NB 1.1 SB 1.1 EB 1 WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume
<199	1.10	1	1.00	A ≤ 1,000
200-599	2.00	2	0.55	B ≤ 1,150
600-799	3.00	3	0.40	C ≤ 1,300
800-999	4.00	4	0.30	D ≤ 1,450
>999	5.00	5	0.25	E ≤ 1,600
		2 lefts	0.60	F > 1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	380	1.00	380	130	1.00	130	510	
WB	TR	1,046	0.55	575	42	1.00	42	617	*
NB	TL	298	1.00	298	12	1.00	12	310	*
SB	TL	153	1.00	153	130	1.00	130	283	
Note:								SUM <u> 927 </u> <u> A </u>	

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	1,023	1.00	1023	117	1.00	117	1140	*
WB	TR	650	0.55	358	112	1.00	112	470	*
NB	TL	47	1.00	47	22	1.00	22	69	*
SB	TL	32	1.00	32	24	1.00	24	56	
Note:								SUM <u> 1209 </u> <u> C </u>	

Appendix C: Existing CLVs Worksheets, HCM Reports, and SIDRA Reports

08. MD 80 / I-270 NB Ramps Critical Lane Volume Level of Service Calculations	Intersection: <u>08. MD 80 / I-270 NB Ramps</u> Jurisdiction: <u>Frederick County, Maryland</u> Scenario/Design Year: <u>Existing Conditions</u> Computed by: <u>Wells + Associates</u>	
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AM Peak

Lane Configuration

PM Peak

Intersection Control: Signal: x Stop:
 Split: N/S Ways: NB/SB

RTOR/Overlap (AM): NB 1 SB 42 EB 0 WB 118
 RTOR/Overlap (PM): NB 14 SB 59 EB 0 WB 299

PCE (AM): NB 1 SB 1 EB 1 WB 1
 PCE (PM): NB 1 SB 1 EB 1 WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume
<199	1.10	1	1.00	A ≤ 1,000
200-599	2.00	2	0.55	B ≤ 1,150
600-799	3.00	3	0.40	C ≤ 1,300
800-999	4.00	4	0.30	D ≤ 1,450
>999	5.00	5	0.25	E ≤ 1,600
		2 lefts	0.60	F > 1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	435	0.55	239	3	1.00	3	242	
WB	T	478	1.00	478	106	1.00	106	584	*
NB	TL	1	1.00	1	0	0.55	0	1	*
SB	TL	198	0.60	119	0	1.00	0	119	*
Note:								SUM <u>704</u>	<u>A</u>

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	697	0.55	383	14	1.00	14	397	
WB	T	530	1.00	530	59	1.00	59	589	*
NB	R	55	1.00	55	0	0.55	0	55	*
SB	TL	526	0.60	316	0	1.00	0	316	*
Note:								SUM <u>960</u>	<u>A</u>

HCM Unsignalized Intersection Capacity Analysis

4: Urbana Pike & Plaza Driveway

08/09/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	2	254	2	1	5	97	70	3	12	886	17
Future Volume (Veh/h)	9	2	254	2	1	5	97	70	3	12	886	17
Sign Control	Stop				Stop				Free			
Grade	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)	10	2	276	2	1	5	105	76	3	13	963	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	6											
Median type							Raised			Raised		
Median storage veh							1			1		
Upstream signal (ft)										506		
pX, platoon unblocked	0.84	0.84	0.84	0.84	0.84		0.84					
vC, conflicting volume	1242	1278	482	794	1293	38	981	79				
vC1, stage 1 conf vol	989	989		286	286							
vC2, stage 2 conf vol	254	289		508	1007							
vCu, unblocked vol	913	955	10	381	973	38	603	79				
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1	4.1				
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	96	99	69	99	100	100	87	99				
cM capacity (veh/h)	283	297	901	362	243	1026	818	1517				
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4	
Volume Total	288	3	5	105	38	38	3	13	482	482	18	
Volume Left	10	2	0	105	0	0	0	13	0	0	0	
Volume Right	276	0	5	0	0	0	3	0	0	0	18	
cSH	940	311	1026	818	1700	1700	1700	1517	1700	1700	1700	
Volume to Capacity	0.31	0.01	0.00	0.13	0.02	0.02	0.00	0.01	0.28	0.28	0.01	
Queue Length 95th (ft)	33	1	0	11	0	0	0	1	0	0	0	
Control Delay (s)	11.1	16.7	8.5	10.1	0.0	0.0	0.0	7.4	0.0	0.0	0.0	
Lane LOS	B	C	A	B	A							
Approach Delay (s)	11.1	11.6		5.7	0.1							
Approach LOS	B	B										
Intersection Summary												
Average Delay	3.0											
Intersection Capacity Utilization	53.6%			ICU Level of Service					A			
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

7: Urbana Pike & Knowledge Farms Drive/Campus Drive

08/09/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	0	0	11	1	102	1	142	184	318	814	27
Future Volume (Veh/h)	3	0	0	11	1	102	1	142	184	318	814	27
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)	3	0	0	12	1	111	1	154	200	346	885	29
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						6						
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1734	1933	885	1733	1762	154	914			354		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1734	1933	885	1733	1762	154	914			354		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	94	100	100	78	98	88	100			71		
cM capacity (veh/h)	46	47	344	54	60	892	746			1205		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	3	124	1	154	200	346	885	29				
Volume Left	3	12	1	0	0	346	0	0				
Volume Right	0	111	0	0	200	0	0	29				
cSH	46	516	746	1700	1700	1205	1700	1700				
Volume to Capacity	0.06	0.24	0.00	0.09	0.12	0.29	0.52	0.02				
Queue Length 95th (ft)	5	23	0	0	0	30	0	0				
Control Delay (s)	88.1	18.2	9.8	0.0	0.0	9.2	0.0	0.0				
Lane LOS	F	C	A			A						
Approach Delay (s)	88.1	18.2	0.0			2.5						
Approach LOS	F	C										
Intersection Summary												
Average Delay			3.3									
Intersection Capacity Utilization			59.5%		ICU Level of Service			B				
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

4: Urbana Pike & Plaza Driveway

08/09/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	16	120	9	20	51	268	596	13	75	183	32
Future Volume (Veh/h)	16	16	120	9	20	51	268	596	13	75	183	32
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	17	130	10	22	55	291	648	14	82	199	35
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	6											
Median type							Raised			Raised		
Median storage veh							1			1		
Upstream signal (ft)										506		
pX, platoon unblocked												
vC, conflicting volume	1335	1607	100	1502	1628	324	234				662	
vC1, stage 1 conf vol	363	363		1230	1230							
vC2, stage 2 conf vol	972	1244		272	398							
vCu, unblocked vol	1335	1607	100	1502	1628	324	234				662	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1				4.1	
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	79	83	86	90	83	92	78				91	
cM capacity (veh/h)	82	97	937	105	133	672	1331				922	
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4	
Volume Total	164	32	55	291	324	324	14	82	100	100	35	
Volume Left	17	10	0	291	0	0	0	82	0	0	0	
Volume Right	130	0	55	0	0	0	14	0	0	0	35	
cSH	432	123	672	1331	1700	1700	1700	922	1700	1700	1700	
Volume to Capacity	0.38	0.26	0.08	0.22	0.19	0.19	0.01	0.09	0.06	0.06	0.02	
Queue Length 95th (ft)	44	24	7	21	0	0	0	7	0	0	0	
Control Delay (s)	21.6	44.5	10.8	8.5	0.0	0.0	0.0	9.3	0.0	0.0	0.0	
Lane LOS	C	E	B	A								
Approach Delay (s)	21.6	23.2		2.6								
Approach LOS	C	C										
Intersection Summary												
Average Delay	5.8											
Intersection Capacity Utilization	39.0%			ICU Level of Service					A			
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

7: Urbana Pike & Thornapple Drive/Campus Drive

08/09/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	3	7	19	0	47	6	860	39	46	294	11
Future Volume (Veh/h)	42	3	7	19	0	47	6	860	39	46	294	11
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)	46	3	8	21	0	51	7	935	42	50	320	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						6						
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1369	1411	320	1378	1381	935	332			977		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1369	1411	320	1378	1381	935	332			977		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	53	98	99	81	100	84	99			93		
cM capacity (veh/h)	98	128	721	112	133	322	1227			706		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	57	72	7	935	42	50	320	12				
Volume Left	46	21	7	0	0	50	0	0				
Volume Right	8	51	0	0	42	0	0	12				
cSH	113	382	1227	1700	1700	706	1700	1700				
Volume to Capacity	0.50	0.19	0.01	0.55	0.02	0.07	0.19	0.01				
Queue Length 95th (ft)	57	17	0	0	0	6	0	0				
Control Delay (s)	65.4	26.0	7.9	0.0	0.0	10.5	0.0	0.0				
Lane LOS	F	D	A			B						
Approach Delay (s)	65.4	26.0	0.1			1.4						
Approach LOS	F	D										
Intersection Summary												
Average Delay			4.1									
Intersection Capacity Utilization			61.9%		ICU Level of Service			B				
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

9: Worthington Boulevard & Urbana Parkway

11/30/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	2	45	23	372	997	18	
Future Volume (Veh/h)	2	45	23	372	997	18	
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	49	25	404	1084	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)							
pX, platoon unblocked							
vC, conflicting volume	1346	552	1104				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1346	552	1104				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	99	90	96				
cM capacity (veh/h)	137	477	628				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	2	49	25	202	202	723	381
Volume Left	2	0	25	0	0	0	0
Volume Right	0	49	0	0	0	0	20
cSH	137	477	628	1700	1700	1700	1700
Volume to Capacity	0.01	0.10	0.04	0.12	0.12	0.43	0.22
Queue Length 95th (ft)	1	9	3	0	0	0	0
Control Delay (s)	31.7	13.4	11.0	0.0	0.0	0.0	0.0
Lane LOS	D	B	B				
Approach Delay (s)	14.1		0.6	0.0			
Approach LOS	B						
Intersection Summary							
Average Delay	0.6						
Intersection Capacity Utilization	38.1%			ICU Level of Service		A	
Analysis Period (min)	15						

HCM Unsignalized Intersection Capacity Analysis

9: Worthington Boulevard & Urbana Parkway

11/30/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	34	24	38	739	330	36	
Future Volume (Veh/h)	34	24	38	739	330	36	
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)	37	26	41	803	359	39	
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	862	199	398				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	862	199	398				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	87	97	96				
cM capacity (veh/h)	284	809	1157				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	37	26	41	402	402	239	159
Volume Left	37	0	41	0	0	0	0
Volume Right	0	26	0	0	0	0	39
cSH	284	809	1157	1700	1700	1700	1700
Volume to Capacity	0.13	0.03	0.04	0.24	0.24	0.14	0.09
Queue Length 95th (ft)	11	2	3	0	0	0	0
Control Delay (s)	19.6	9.6	8.2	0.0	0.0	0.0	0.0
Lane LOS	C	A	A				
Approach Delay (s)	15.5		0.4	0.0			
Approach LOS	C						
Intersection Summary							
Average Delay			1.0				
Intersection Capacity Utilization			30.4%		ICU Level of Service		A
Analysis Period (min)			15				

MOVEMENT SUMMARY**Site: 05. (EX_AM) MD 355 and Sugarloaf Pkwy**

Urbana YMCA
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sugarloaf Pkwy											
3	L2	18	3.0	0.070	7.5	LOS A	0.2	4.6	0.53	1.05	24.6
8	T1	40	3.0	0.070	7.4	LOS A	0.2	4.6	0.51	1.03	25.3
18	R2	18	3.0	0.070	7.2	LOS A	0.2	4.4	0.50	1.00	26.1
Approach		77	3.0	0.070	7.4	LOS A	0.2	4.6	0.51	0.51	25.3
East: MD 355											
1	L2	18	3.0	0.173	5.4	LOS A	0.5	12.1	0.18	0.20	25.5
6	T1	227	3.0	0.173	5.4	LOS A	0.5	12.1	0.18	0.19	25.5
16	R2	86	3.0	0.173	5.4	LOS A	0.4	11.3	0.17	0.19	25.5
Approach		332	3.0	0.173	5.4	LOS A	0.5	12.1	0.18	0.10	25.5
North: Sugarloaf Pkwy											
7	L2	124	3.0	0.248	6.9	LOS A	0.7	18.5	0.33	0.53	20.2
4	T1	297	3.0	0.248	6.8	LOS A	0.7	18.5	0.31	0.51	21.5
14	R2	4	3.0	0.248	6.8	LOS A	0.7	17.4	0.31	0.50	22.2
Approach		425	3.0	0.248	6.8	LOS A	0.7	18.5	0.32	0.26	21.1
West: MD 355											
5	L2	42	3.0	0.672	17.4	LOS C	3.7	95.0	0.63	1.36	18.6
2	T1	753	3.0	0.672	17.2	LOS C	3.7	95.0	0.62	1.34	18.6
12	R2	226	3.0	0.672	17.1	LOS C	3.5	90.6	0.61	1.31	18.6
Approach		1022	3.0	0.672	17.2	LOS C	3.7	95.0	0.62	0.67	18.6
All Vehicles		1855	3.0	0.672	12.3	LOS B	3.7	95.0	0.47	0.46	20.4

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

Roundabout LOS Method: Same as Sign Control.

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

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

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

Roundabout Capacity Model: US HCM 2010.

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

Gap-Acceptance Capacity: Traditional M1.

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

Processed: Monday, August 09, 2021 11:50:19 AM

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INTERSECTION 6

MOVEMENT SUMMARY**Site: 05. (EX_PM) MD 355 and Sugarloaf Pkwy**

Urbana YMCA
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sugarloaf Pkwy											
3	L2	127	3.0	0.279	8.7	LOS A	0.8	20.8	0.48	0.96	23.4
8	T1	247	3.0	0.279	8.6	LOS A	0.8	20.8	0.46	0.93	25.0
18	R2	10	3.0	0.279	8.5	LOS A	0.8	19.8	0.46	0.92	25.7
Approach		384	3.0	0.279	8.6	LOS A	0.8	20.8	0.47	0.47	24.4
East: MD 355											
1	L2	78	3.0	0.511	12.4	LOS B	2.1	53.8	0.53	1.12	20.7
6	T1	523	3.0	0.511	12.3	LOS B	2.1	53.8	0.52	1.10	20.9
16	R2	167	3.0	0.511	12.1	LOS B	2.0	51.2	0.51	1.07	21.1
Approach		768	3.0	0.511	12.2	LOS B	2.1	53.8	0.52	0.55	20.9
North: Sugarloaf Pkwy											
7	L2	102	3.0	0.242	8.9	LOS A	0.7	17.5	0.51	1.02	18.8
4	T1	155	3.0	0.242	8.7	LOS A	0.7	17.5	0.49	0.99	20.0
14	R2	46	3.0	0.242	8.6	LOS A	0.7	16.8	0.49	0.98	20.6
Approach		303	3.0	0.242	8.8	LOS A	0.7	17.5	0.50	0.50	19.6
West: MD 355											
5	L2	83	3.0	0.396	9.3	LOS A	1.3	33.7	0.42	0.78	22.2
2	T1	402	3.0	0.396	9.3	LOS A	1.3	33.7	0.41	0.76	22.4
12	R2	162	3.0	0.396	9.2	LOS A	1.2	32.0	0.40	0.74	22.7
Approach		647	3.0	0.396	9.3	LOS A	1.3	33.7	0.41	0.38	22.4
All Vehicles		2102	3.0	0.511	10.2	LOS B	2.1	53.8	0.48	0.47	21.9

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

Roundabout LOS Method: Same as Sign Control.

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

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

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

Roundabout Capacity Model: US HCM 2010.

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

Gap-Acceptance Capacity: Traditional M1.

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

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MOVEMENT SUMMARY**Site: 06. (EX_AM) MD 80 and Sugarloaf Pkwy**

Urbana YMCA
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sugarloaf Pkwy											
3	L2	34	3.0	0.071	6.1	LOS A	0.2	4.5	0.42	0.83	23.1
8	T1	14	3.0	0.071	6.1	LOS A	0.2	4.5	0.42	0.83	23.1
18	R2	4	3.0	0.007	5.6	LOS A	0.0	0.4	0.43	0.66	25.4
Approach		52	3.0	0.071	6.0	LOS A	0.2	4.5	0.42	0.41	23.3
East: MD 80											
1	L2	48	3.0	0.452	9.2	LOS A	2.3	60.0	0.41	0.58	23.0
6	T1	793	3.0	0.452	9.2	LOS A	2.3	60.0	0.41	0.58	23.2
16	R2	7	3.0	0.452	9.2	LOS A	2.3	60.0	0.41	0.58	23.5
Approach		848	3.0	0.452	9.2	LOS A	2.3	60.0	0.41	0.29	23.2
North: Sugarloaf Pkwy											
7	L2	9	3.0	0.058	6.8	LOS A	0.1	3.6	0.48	0.96	22.3
4	T1	25	3.0	0.058	6.8	LOS A	0.1	3.6	0.48	0.96	22.3
14	R2	304	3.0	0.182	0.0	LOS A	0.0	0.0	0.00	0.00	30.0
Approach		338	3.0	0.182	0.7	LOS A	0.1	3.6	0.05	0.05	29.0
West: MD 80											
5	L2	104	3.0	0.339	7.1	LOS A	1.6	40.5	0.26	0.28	24.1
2	T1	559	3.0	0.339	7.1	LOS A	1.6	40.5	0.26	0.28	24.9
12	R2	21	3.0	0.339	7.1	LOS A	1.6	40.5	0.26	0.28	25.5
Approach		684	3.0	0.339	7.1	LOS A	1.6	40.5	0.26	0.14	24.8
All Vehicles		1922	3.0	0.452	6.9	LOS A	2.3	60.0	0.29	0.20	24.5

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

Roundabout LOS Method: Same as Sign Control.

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

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

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

Roundabout Capacity Model: US HCM 2010.

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

Gap-Acceptance Capacity: Traditional M1.

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

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MOVEMENT SUMMARY**Site: 06. (EX_PM) MD 80 and Sugarloaf Pkwy**

Urbana YMCA
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sugarloaf Pkwy											
3	L2	97	3.0	0.321	13.2	LOS B	0.9	23.7	0.67	1.38	19.6
8	T1	50	3.0	0.321	13.2	LOS B	0.9	23.7	0.67	1.38	19.6
18	R2	40	3.0	0.094	9.7	LOS A	0.2	6.1	0.63	1.26	22.4
Approach		187	3.0	0.321	12.4	LOS B	0.9	23.7	0.66	0.68	20.1
East: MD 80											
1	L2	33	3.0	0.396	11.2	LOS B	1.7	43.8	0.61	1.26	21.6
6	T1	465	3.0	0.396	11.2	LOS B	1.7	43.8	0.61	1.26	21.8
16	R2	11	3.0	0.396	11.2	LOS B	1.7	43.8	0.61	1.26	22.0
Approach		509	3.0	0.396	11.2	LOS B	1.7	43.8	0.61	0.63	21.8
North: Sugarloaf Pkwy											
7	L2	14	3.0	0.038	5.6	LOS A	0.1	2.3	0.39	0.69	22.1
4	T1	12	3.0	0.038	5.6	LOS A	0.1	2.3	0.39	0.69	22.1
14	R2	130	3.0	0.078	0.0	LOS A	0.0	0.0	0.00	0.00	30.0
Approach		157	3.0	0.078	0.9	LOS A	0.1	2.3	0.07	0.06	28.1
West: MD 80											
5	L2	374	3.0	0.583	11.2	LOS B	4.1	104.2	0.32	0.32	20.7
2	T1	826	3.0	0.583	11.2	LOS B	4.1	104.2	0.32	0.32	22.0
12	R2	4	3.0	0.583	11.2	LOS B	4.1	104.2	0.32	0.32	22.6
Approach		1204	3.0	0.583	11.2	LOS B	4.1	104.2	0.32	0.16	21.5
All Vehicles		2057	3.0	0.583	10.5	LOS B	4.1	104.2	0.40	0.32	21.8

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

Roundabout LOS Method: Same as Sign Control.

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

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

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

Roundabout Capacity Model: US HCM 2010.

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

Gap-Acceptance Capacity: Traditional M1.

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

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INTERSECTION 6

APPENDIX D

INDIVIDUAL PIPELINE TRAFFIC ASSIGNMENTS

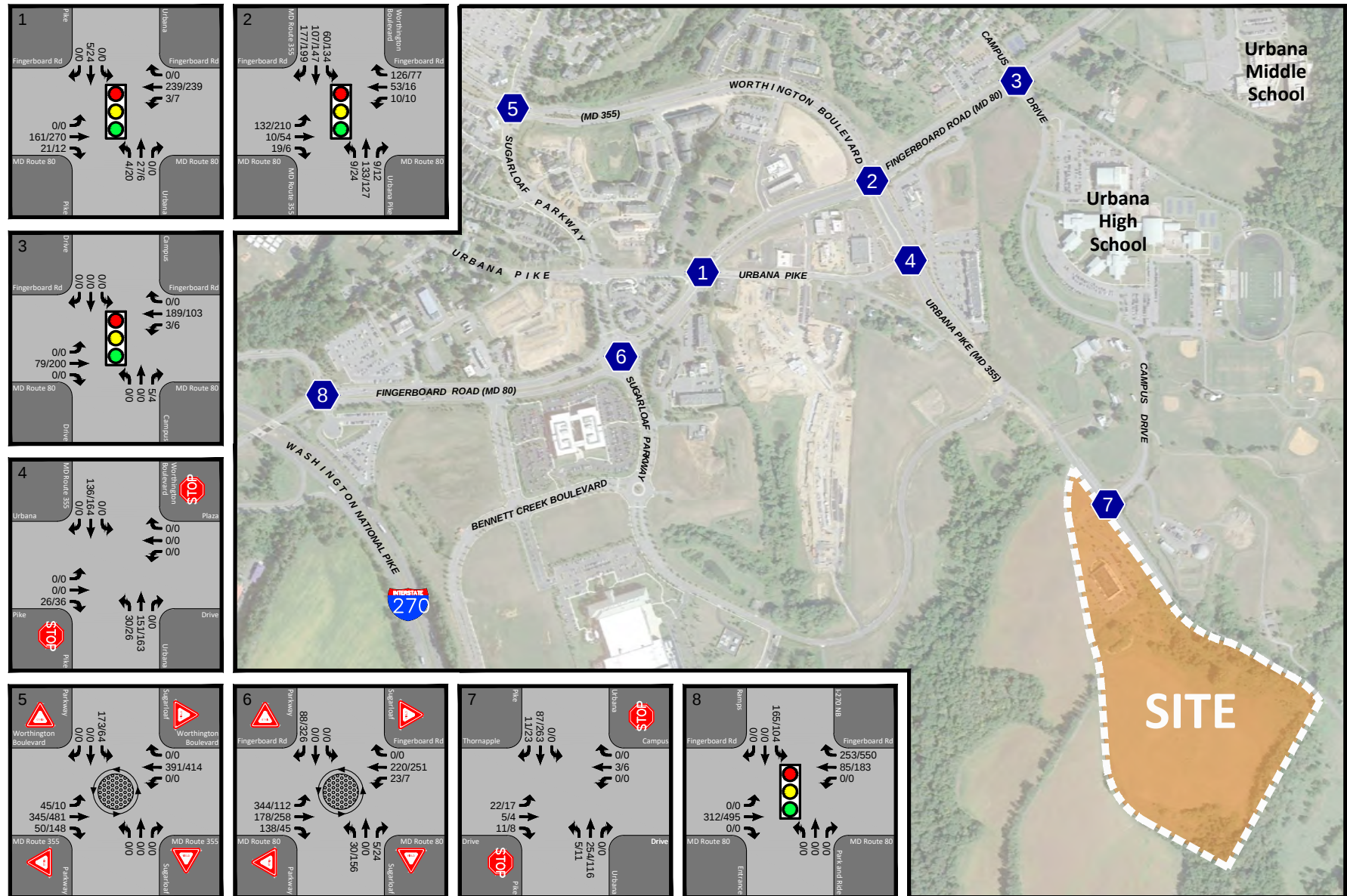


Figure 4-2A
Individual Pipeline Development Traffic Assignments
Monocacy Land Company (Urbana Properties)

AM PEAK HOUR
PM PEAK HOUR
000 / 000



Knowledge Farms
Frederick County, Maryland

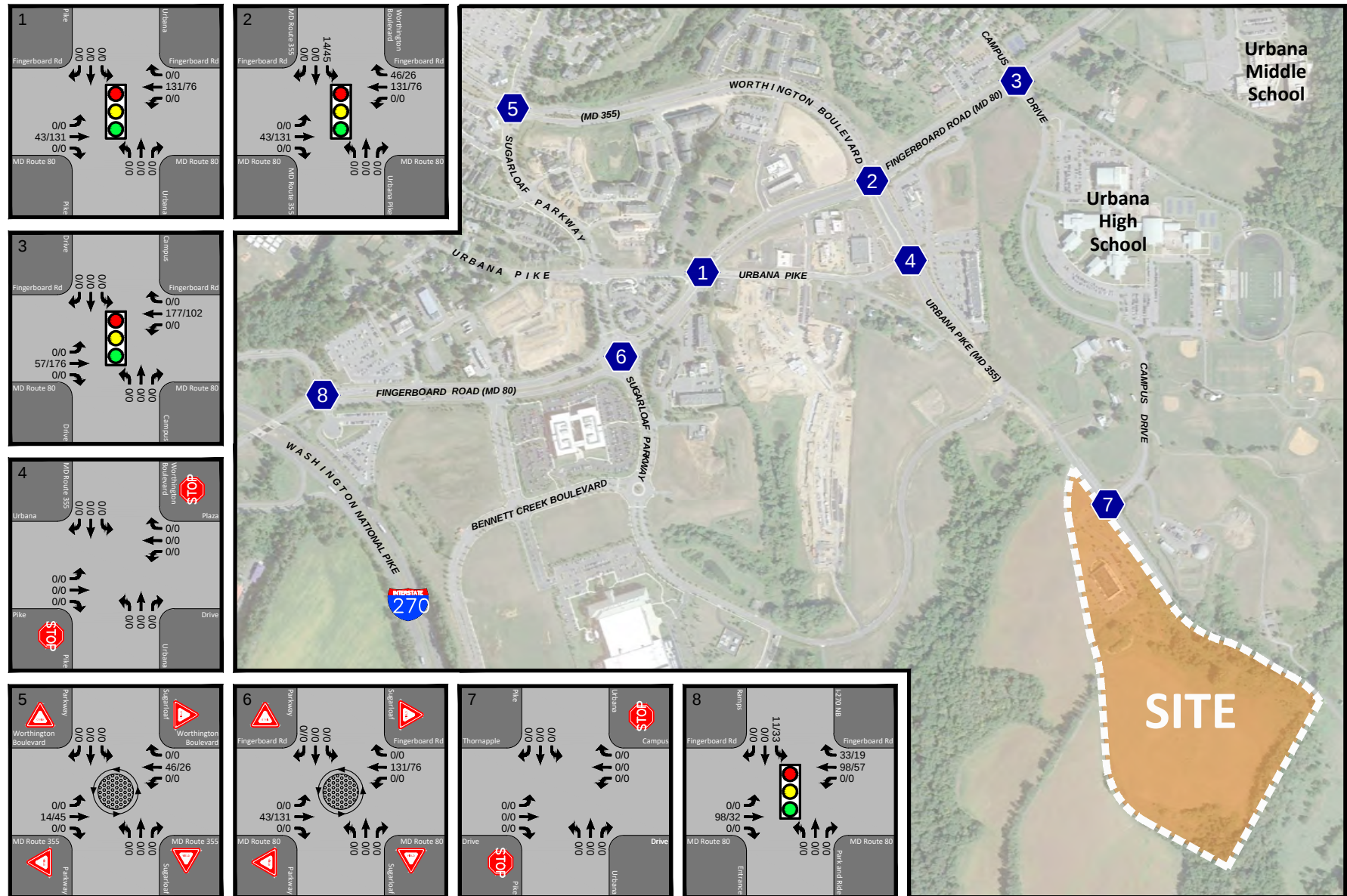


Figure 4-2B
Individual Pipeline Development Traffic Assignments
Landsdale

AM PEAK HOUR
PM PEAK HOUR
000 / 000



Knowledge Farms
Frederick County, Maryland

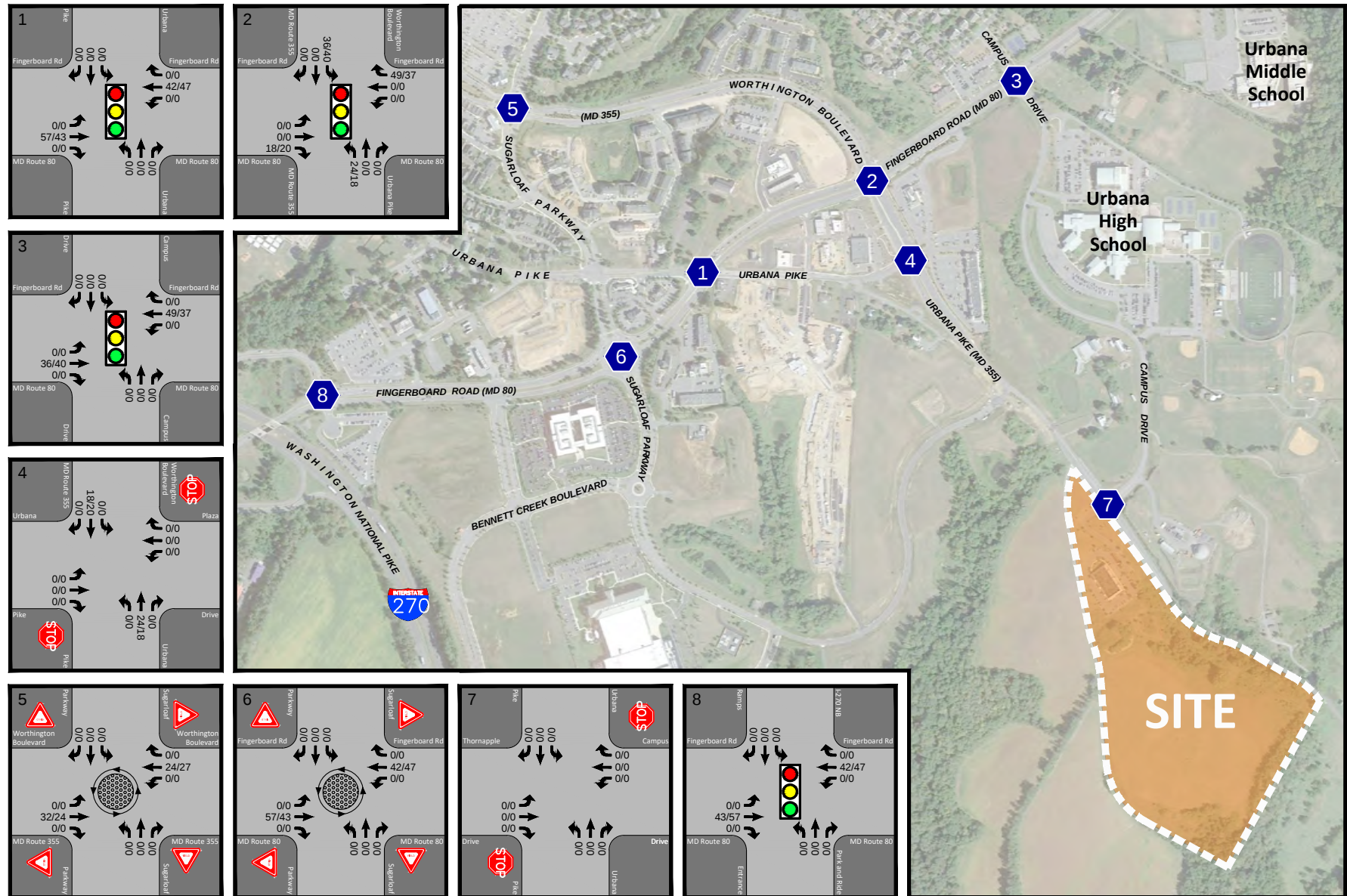


Figure 4-2C
Individual Pipeline Development Traffic Assignments
Urbana Commons

AM PEAK HOUR
PM PEAK HOUR
000 / 000



Knowledge Farms
Frederick County, Maryland

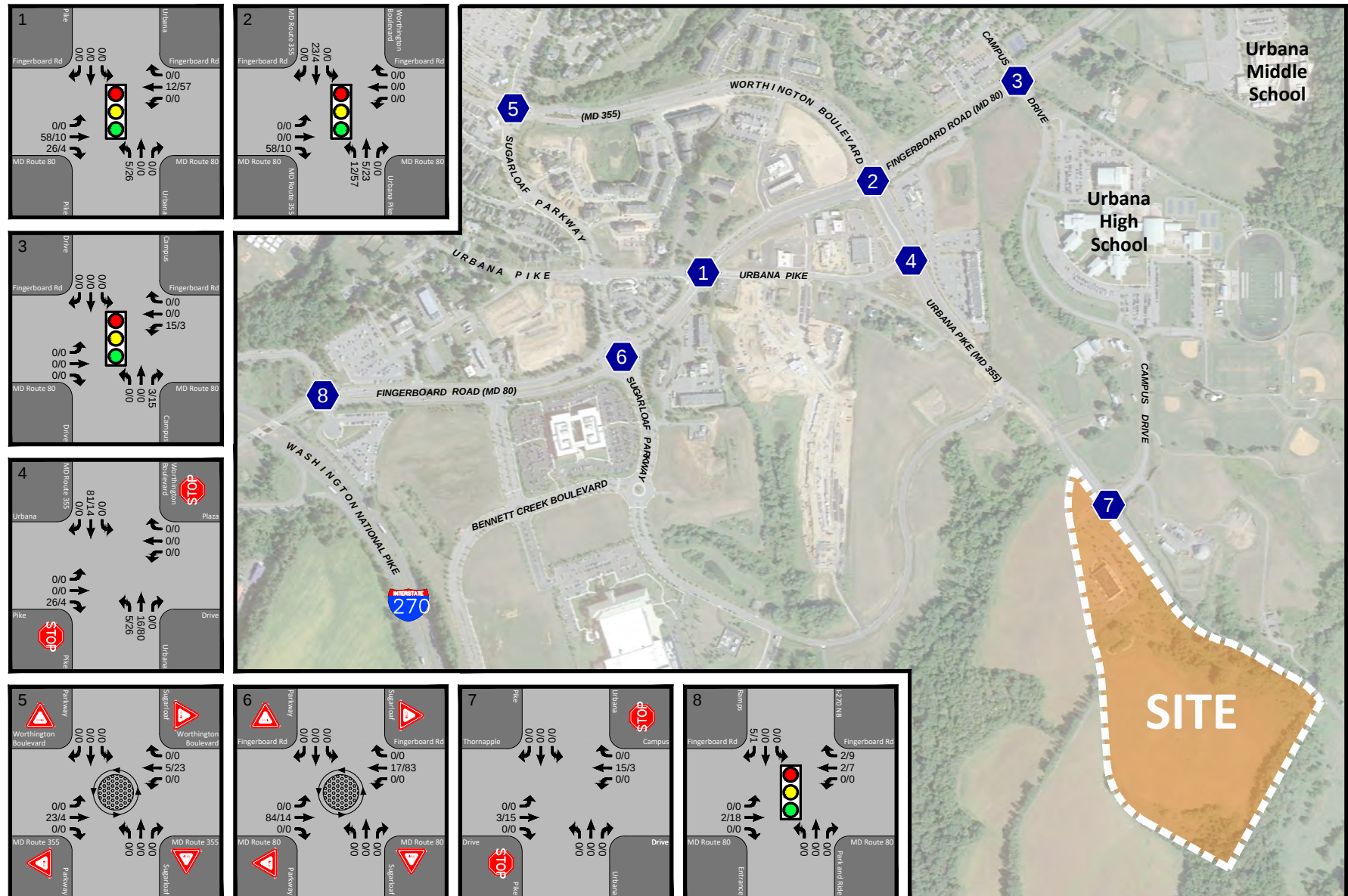


Figure 4-2D

Individual Pipeline Development Traffic Assignments
Approved Knowledge Farms (Research & Development)

AM PEAK HOUR
000 / 000
PM PEAK HOUR



Knowledge Farms
Frederick County, Maryland

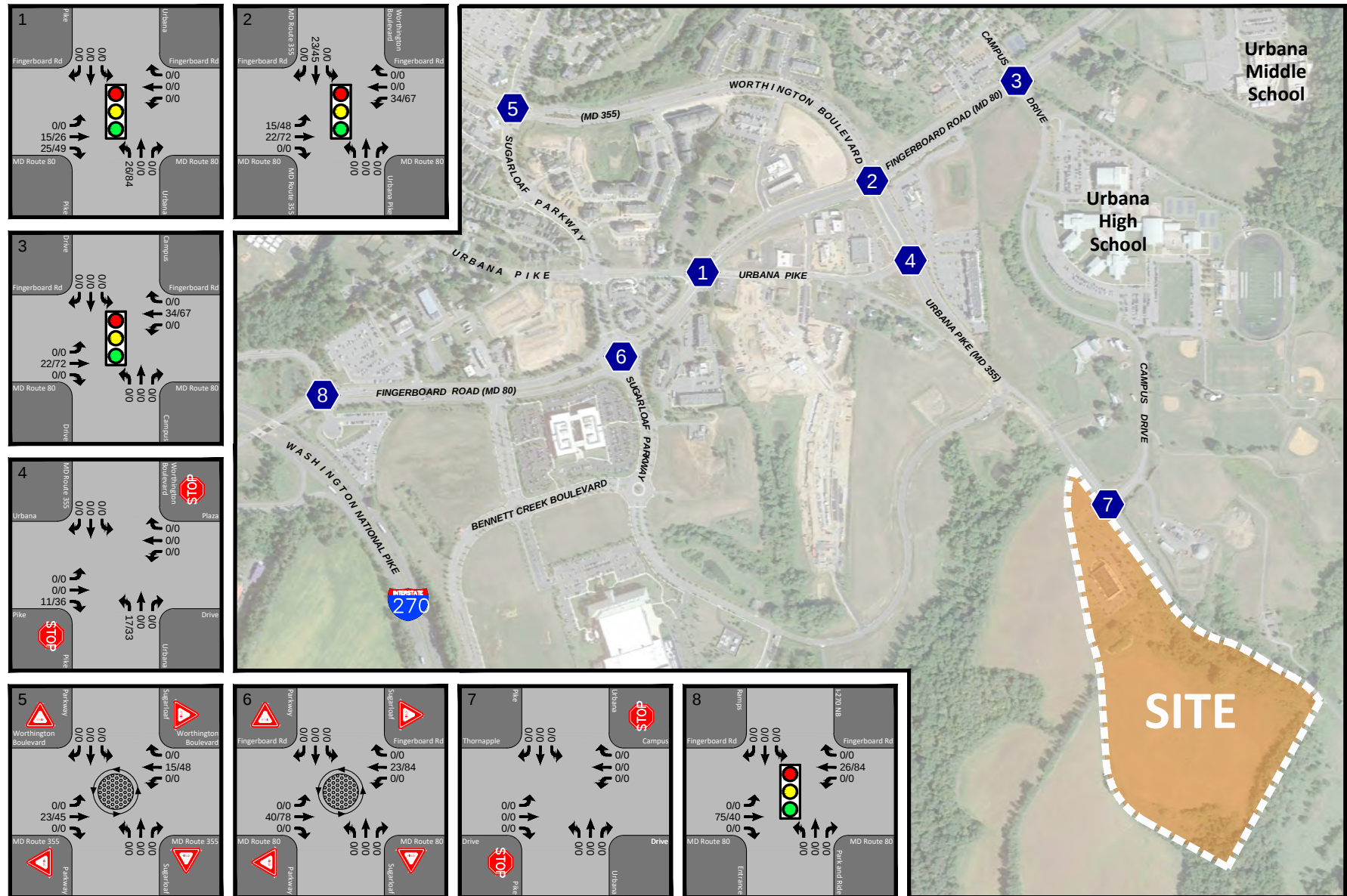


Figure 4-2E
Individual Pipeline Development Traffic Assignments
Urbana Village Center

AM PEAK HOUR
PM PEAK HOUR
000 / 000



Knowledge Farms
Frederick County, Maryland

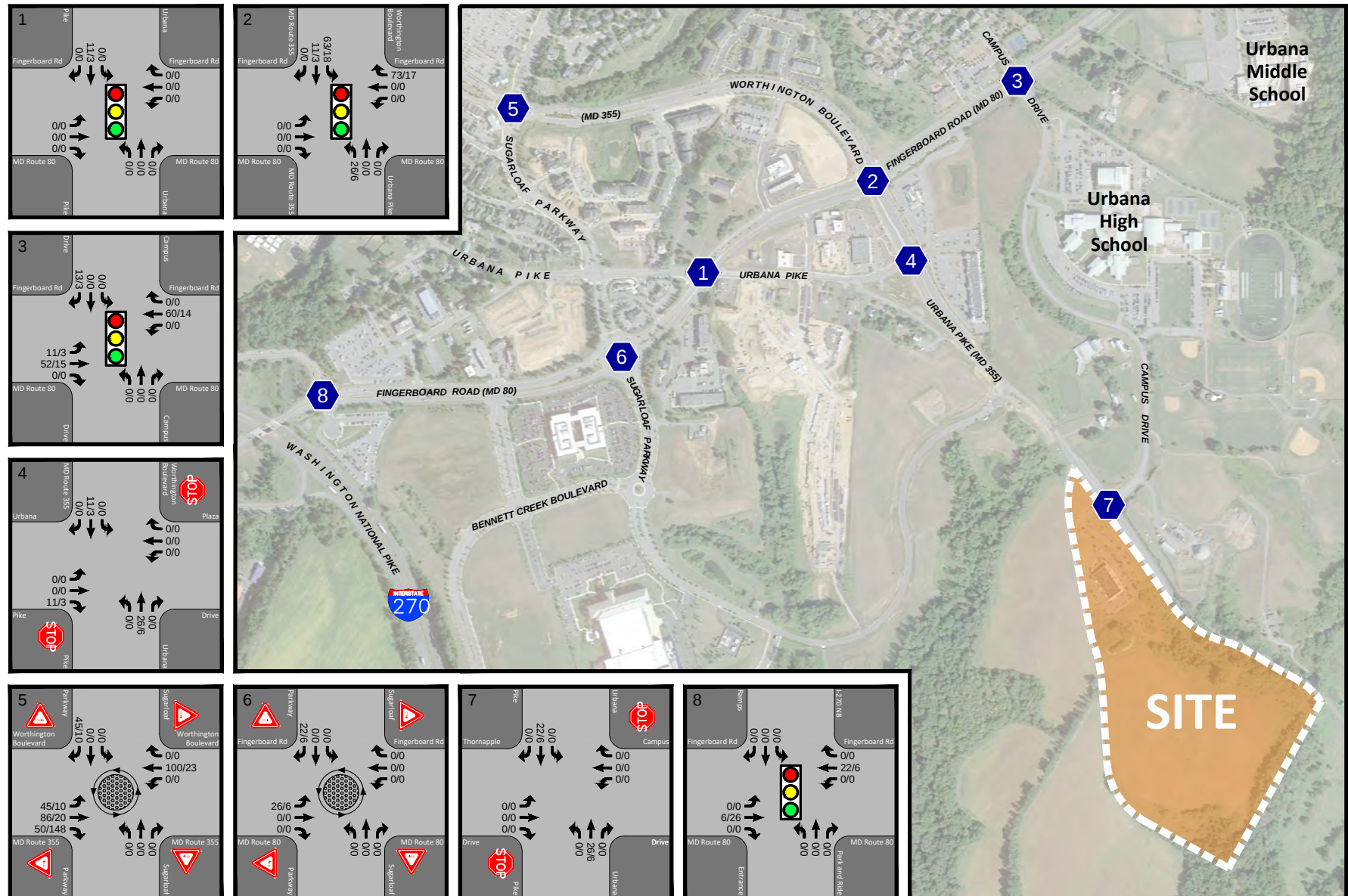


Figure 4-2F
Individual Pipeline Development Traffic Assignments
Sugarloaf Elementary School

AM PEAK HOUR
PM PEAK HOUR
000 / 000



Knowledge Farms
Frederick County, Maryland

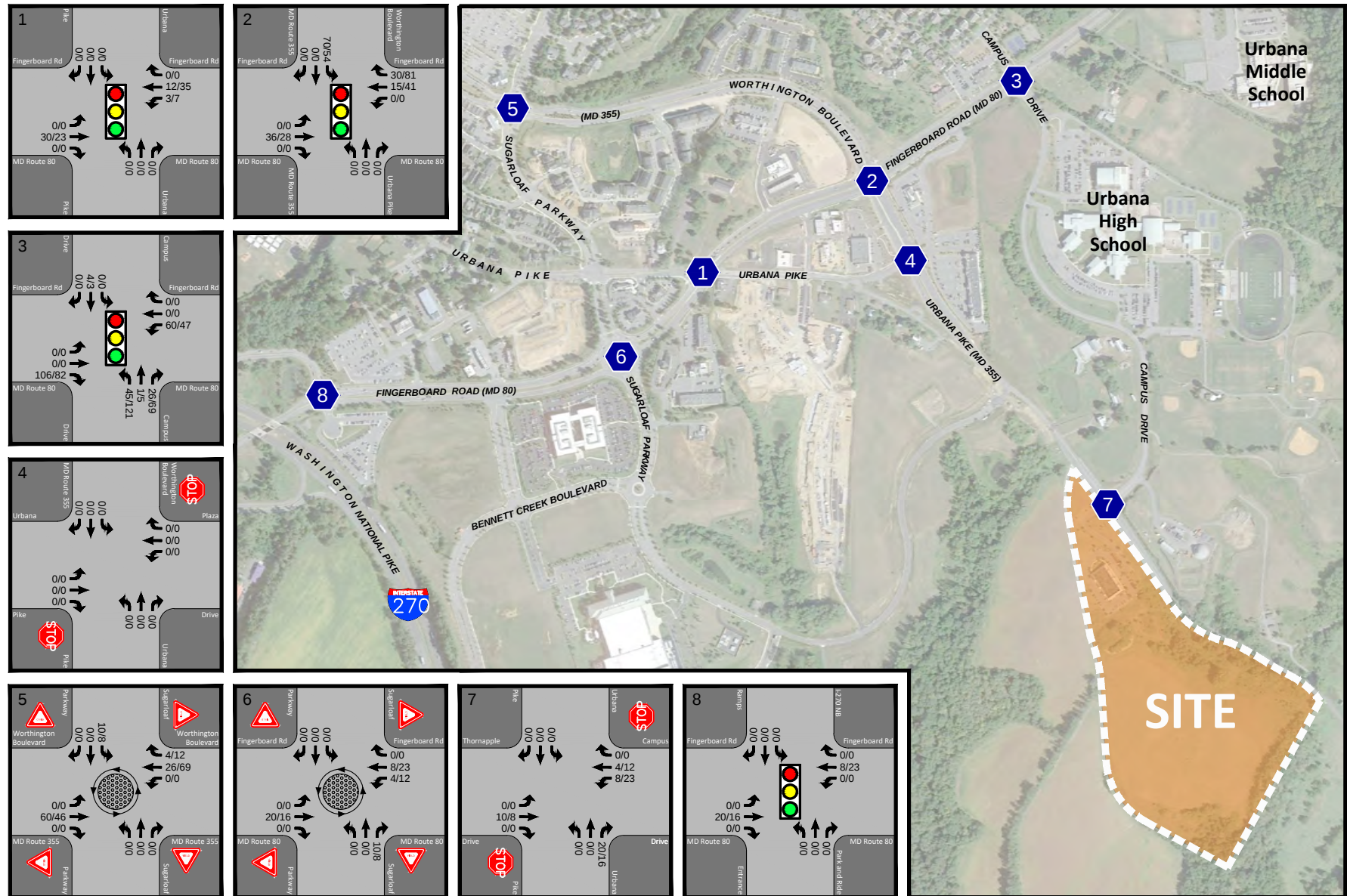


Figure 4-2G
Individual Pipeline Development Traffic Assignments
YMCA & Medical Office Building

AM PEAK HOUR
000 / 000
PM PEAK HOUR



Knowledge Farms
Frederick County, Maryland

APPENDIX E
BACKGROUND CLVs WORKSHETS, HCM REPORTS, AND SIDRA
REPORTS

Appendix E: Background CLVs Worksheets, HCM Reports, and SIDRA Reports

01. MD 80 / Urbana Pike Critical Lane Volume Level of Service Calculations	Intersection: <u>01. MD 80 / Urbana Pike</u> Jurisdiction: <u>Frederick County, Maryland</u> Scenario/Design Year: <u>2026 Background Future Conditions</u> Computed by: <u>Wells + Associates</u>	
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AM Peak 	Lane Configuration 	PM Peak
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Intersection Control: Signal: x Stop:
 Split: N/S Ways:

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume
<199	1.10	1	1.00	A ≤ 1,000
200-599	2.00	2	0.55	B ≤ 1,150
600-799	3.00	3	0.40	C ≤ 1,300
800-999	4.00	4	0.30	D ≤ 1,450
>999	5.00	5	0.25	E ≤ 1,600
		2 lefts	0.60	F > 1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	877	0.55	482	12	1.00	12	494	
WB	TR	1,350	0.55	743	25	1.00	25	768	*
NB	LTR	211	0.60	127	55	0.00	0	127	*
SB	TR	100	1.00	100	161	0.00	0	100	*
SUM								995	
A									

Note: The Free-Flow right-turn lane is not long enough to be considered a separate lane and the southbound Urbana Pike approach was analyzed with a shared through-right.

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	1,346	0.55	740	21	1.00	21	761	*
WB	TR	1,017	0.55	559	48	1.00	48	607	
NB	LTR	438	0.60	263	60	0.00	0	263	*
SB	TR	92	1.00	92	359	0.00	0	92	*
SUM								1116	
B									

Note: The Free-Flow right-turn lane is not long enough to be considered a separate lane and the southbound Urbana Pike approach was analyzed with a shared through-right.

Appendix E: Background CLVs Worksheets, HCM Reports, and SIDRA Reports

02. MD 80 / MD 355 (Worthington Boulevard) Critical Lane Volume Level of Service Calculations	Intersection: <u>02. MD 80 / MD 355 (Worthington Boulevard)</u> Jurisdiction: <u>Frederick County, Maryland</u> Scenario/Design Year: <u>2026 Background Future Conditions</u> Computed by: <u>Wells + Associates</u>	
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AM Peak

Lane Configuration

MD 355	1	1	2	MD 80
TR	T	L	R	1
			T	2
			L	1

MD 80	L	T	R	MD 355
	2	2	1	

PM Peak

Intersection Control: Signal: x Stop:
 Split: Ways:

RTOR/Overlap (AM): NB 26 SB 0 EB 0 WB 313
 RTOR/Overlap (PM): NB 149 SB 0 EB 0 WB 338

PCE (AM): NB 1 SB 1 EB 1 WB 1
 PCE (PM): NB 1 SB 1 EB 1 WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume
<199	1.10	1	1.00	A ≤ 1,000
200-599	2.00	2	0.55	B ≤ 1,150
600-799	3.00	3	0.40	C ≤ 1,300
800-999	4.00	4	0.30	D ≤ 1,450
>999	5.00	5	0.25	E ≤ 1,600
		2 lefts	0.60	F > 1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	641	0.40	256	394	1.00	394	650	
WB	T	1,029	0.55	566	170	0.60	102	668	*
NB	T	252	0.55	139	522	0.60	313	452	
SB	TR	955	0.55	525	71	0.60	43	568	*
SUM								1236	
								C	

Note: The future resriping of the eastbound right turn lane to a shared through-right lane (By Others) was included for all future conditions.

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	1,252	0.40	501	233	1.00	233	734	
WB	T	578	0.55	318	361	0.60	217	535	*
NB	T	628	0.55	345	563	0.60	338	683	*
SB	TR	582	0.55	320	178	0.60	107	427	
SUM								1417	
								D	

Note: The future resriping of the eastbound right turn lane to a shared through-right lane (By Others) was included for all future conditions.

Appendix E: Background CLVs Worksheets, HCM Reports, and SIDRA Reports

03. MD 80 / Campus Drive Critical Lane Volume Level of Service Calculations	Intersection: <u>03. MD 80 / Campus Drive</u> Jurisdiction: <u>Frederick County, Maryland</u> Scenario/Design Year: <u>2026 Background Future Conditions</u> Computed by: <u>Wells + Associates</u>	
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AM Peak

Intersection Control: Signal: x Stop: _____
 Split: _____ Ways: _____

Lane Configuration

PM Peak

RTOR/Overlap (AM): NB <u>133</u> SB <u>53</u> EB <u>175</u> WB <u>0</u> RTOR/Overlap (PM): NB <u>146</u> SB <u>57</u> EB <u>105</u> WB <u>0</u>	PCE (AM): NB <u>1</u> SB <u>1.1</u> EB <u>1</u> WB <u>1</u> PCE (PM): NB <u>1</u> SB <u>1.1</u> EB <u>1</u> WB <u>1</u>	
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Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume	
<199	1.10	1	1.00	A ≤	1,000
200-599	2.00	2	0.55	B ≤	1,150
600-799	3.00	3	0.40	C ≤	1,300
800-999	4.00	4	0.30	D ≤	1,450
>999	5.00	5	0.25	E ≤	1,600
		2 lefts	0.60	F >	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	646	0.55	355	208	1.00	208	563	
WB	TR	1,607	0.55	884	53	1.00	53	937	*
NB	T	39	1.00	39	12	1.00	12	51	
SB	TL	157	1.00	157	175	1.00	175	332	*
SUM								1269	
								C	

Note: An additional eastbound through lane is being added at this intersection by Others and was assumed for all future conditions.
 The Applicant proposes to add a dedicated left turn lane on Campus Drive.

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	1,578	0.55	868	173	1.00	173	1041	*
WB	TR	1,006	0.55	553	115	1.00	115	668	
NB	T	26	1.00	26	22	1.00	22	48	
SB	TL	35	1.00	35	145	1.00	145	180	*
SUM								1221	
								C	

Note: An additional eastbound through lane is being added at this intersection by Others and was assumed for all future conditions.
 The Applicant proposes to add a dedicated left turn lane on Campus Drive.

Appendix E: Background CLVs Worksheets, HCM Reports, and SIDRA Reports

07. MD 355 / Campus Drive Critical Lane Volume Level of Service Calculations	Intersection: 07. MD 355 / Campus Drive Jurisdiction: Frederick County, Maryland Scenario/Design Year: 2026 Background Future Conditions Computed by: Wells + Associates	
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AM Peak

Intersection Control: Signal: x (By Others) Stop: _____
 Split: _____ Ways: _____

PM Peak

RTOR/Overlap (AM): NB <u>19</u> SB <u>25</u> EB <u>6</u> WB <u>102</u> RTOR/Overlap (PM): NB <u>42</u> SB <u>34</u> EB <u>15</u> WB <u>28</u>	PCE (AM): NB <u>1</u> SB <u>1</u> EB <u>1.1</u> WB <u>1.1</u> PCE (PM): NB <u>1</u> SB <u>1</u> EB <u>1.1</u> WB <u>1.1</u>	
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Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume
<199	1.10	1	1.00	A ≤ 1,000
200-599	2.00	2	0.55	B ≤ 1,150
600-799	3.00	3	0.40	C ≤ 1,300
800-999	4.00	4	0.30	D ≤ 1,450
>999	5.00	5	0.25	E ≤ 1,600
		2 lefts	0.60	F > 1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TL	46	1.00	46	19	1.00	19	65	
WB	TL	44	1.00	44	25	1.00	25	69	*
NB	T	429	1.00	429	318	1.00	318	747	*
SB	T	965	0.55	531	6	1.00	6	537	
SUM								816	
A									

Note: An additional eastbound egress lane, southbound through lane and a traffic signal are planned to be installed at this intersection (By Others) and were assumed for all future conditions.

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TL	95	1.00	95	42	1.00	42	137	
WB	TL	67	1.00	67	59	1.00	59	126	
NB	T	1,026	1.00	1026	46	1.00	46	1072	*
SB	T	578	0.55	318	17	1.00	17	335	
SUM								1209	
C									

Note: An additional eastbound egress lane, southbound through lane and a traffic signal are planned to be installed at this intersection (By Others) and were assumed for all future conditions.

Appendix E: Background CLVs Worksheets, HCM Reports, and SIDRA Reports

08. MD 80 / I-270 NB Ramps Critical Lane Volume Level of Service Calculations	Intersection: <u>08. MD 80 / I-270 NB Ramps</u> Jurisdiction: <u>Frederick County, Maryland</u> Scenario/Design Year: <u>2026 Background Future Conditions</u> Computed by: <u>Wells + Associates</u>	
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Lane Configuration

AM Peak

Intersection Control: Signal: x Stop: NB/SB
Split: N/S Ways: NB/SB

PM Peak

Intersection Control: Signal: x Stop: NB/SB
Split: N/S Ways: NB/SB

RTOR/Overlap (AM): NB <u>1</u>	SB <u>47</u>	EB <u>0</u>	WB <u>373</u>
RTOR/Overlap (PM): NB <u>14</u>	SB <u>59</u>	EB <u>0</u>	WB <u>382</u>
PCE (AM): NB <u>1</u>	SB <u>1</u>	EB <u>1</u>	WB <u>1</u>
PCE (PM): NB <u>1</u>	SB <u>1</u>	EB <u>1</u>	WB <u>1</u>

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume	
<199	1.10	1	1.00	A ≤	1,000
200-599	2.00	2	0.55	B ≤	1,150
600-799	3.00	3	0.40	C ≤	1,300
800-999	4.00	4	0.30	D ≤	1,450
>999	5.00	5	0.25	E ≤	1,600
		2 lefts	0.60	F >	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	1,013	0.55	557	3	1.00	3	560	
WB	T	786	1.00	786	106	1.00	106	892	*
NB	TL	1	1.00	1	0	0.55	0	1	*
SB	TL	374	0.60	224	0	1.00	0	224	*
SUM								1117	
B									

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	1,417	0.55	779	14	1.00	14	793	
WB	T	965	1.00	965	59	1.00	59	1024	*
NB	R	55	1.00	55	0	0.55	0	55	*
SB	TL	663	0.60	398	0	1.00	0	398	*
SUM								1477	
E									

Appendix E: Background CLVs Worksheets, HCM Reports, and SIDRA Reports

08. MD 80 / I-270 Ramps Critical Lane Volume Level of Service Calculations				Intersection: <u>08. MD 80 / I-270 Ramps</u> Jurisdiction: <u>Frederick County, Maryland</u> Scenario/Design Year: <u>2026 Background Future Conditions with Improvements</u> Computed by: <u>Wells + Associates</u>																																								
Lane Configuration																																												
AM Peak 																																												
Intersection Control: Signal: <u> x </u> Split: <u> N/S </u>					Stop: _____ Ways: <u>NB/SB</u>																																							
RTOR/Overlap (AM): NB <u> 1 </u> SB <u> 47 </u> EB <u> 0 </u> WB <u> 373 </u> RTOR/Overlap (PM): NB <u> 14 </u> SB <u> 59 </u> EB <u> 0 </u> WB <u> 382 </u>					<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Opposing Volume</th> <th>PCE</th> <th>Number of Lanes</th> <th>Lane Use Factor</th> <th>Critical Lane Volume</th> </tr> </thead> <tbody> <tr> <td><199</td> <td>1.10</td> <td>1</td> <td>1.00</td> <td>A ≤ 1,000</td> </tr> <tr> <td>200-599</td> <td>2.00</td> <td>2</td> <td>0.55</td> <td>B ≤ 1,150</td> </tr> <tr> <td>600-799</td> <td>3.00</td> <td>3</td> <td>0.40</td> <td>C ≤ 1,300</td> </tr> <tr> <td>800-999</td> <td>4.00</td> <td>4</td> <td>0.30</td> <td>D ≤ 1,450</td> </tr> <tr> <td>>999</td> <td>5.00</td> <td>5</td> <td>0.25</td> <td>E ≤ 1,600</td> </tr> <tr> <td></td> <td></td> <td>2 lefts</td> <td>0.60</td> <td>F > 1,600</td> </tr> </tbody> </table>					Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume	<199	1.10	1	1.00	A ≤ 1,000	200-599	2.00	2	0.55	B ≤ 1,150	600-799	3.00	3	0.40	C ≤ 1,300	800-999	4.00	4	0.30	D ≤ 1,450	>999	5.00	5	0.25	E ≤ 1,600			2 lefts	0.60	F > 1,600
Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume																																								
<199	1.10	1	1.00	A ≤ 1,000																																								
200-599	2.00	2	0.55	B ≤ 1,150																																								
600-799	3.00	3	0.40	C ≤ 1,300																																								
800-999	4.00	4	0.30	D ≤ 1,450																																								
>999	5.00	5	0.25	E ≤ 1,600																																								
		2 lefts	0.60	F > 1,600																																								
PCE (AM): NB <u> 1 </u> SB <u> 1 </u> EB <u> 1 </u> WB <u> 1 </u> PCE (PM): NB <u> 1 </u> SB <u> 1 </u> EB <u> 1 </u> WB <u> 1 </u>																																												
Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*																																			
EB	TR	1,013	0.55	557	3	1.00	3	560	*																																			
WB	T	786	0.55	432	106	1.00	106	538																																				
NB	TL	1	1.00	1	0	0.55	0	1	*																																			
SB	TL	374	0.60	224	0	1.00	0	224	*																																			
							SUM	785																																				
								A																																				
Note:																																												

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	1,417	0.55	779	14	1.00	14	793	*
WB	T	965	0.55	531	59	1.00	59	590	
NB	R	55	1.00	55	0	0.55	0	55	*
SB	TL	663	0.60	398	0	1.00	0	398	*
							SUM	1246	
								C	
Note:									

HCM Unsignalized Intersection Capacity Analysis

4: Urbana Pike & Plaza Driveway

07/14/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	2	328	2	1	5	149	291	3	12	1177	17
Future Volume (Veh/h)	9	2	328	2	1	5	149	291	3	12	1177	17
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)	10	2	357	2	1	5	162	316	3	13	1279	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	6											
Median type							Raised			Raised		
Median storage veh							1			1		
Upstream signal (ft)										506		
pX, platoon unblocked	0.78	0.78	0.78	0.78	0.78		0.78					
vC, conflicting volume	1792	1948	640	1306	1963	158	1297	319				
vC1, stage 1 conf vol	1305	1305		640	640							
vC2, stage 2 conf vol	488	643		666	1323							
vCu, unblocked vol	1454	1653	0	832	1672	158	820	319				
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1	4.1				
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	94	99	58	99	99	99	74	99				
cM capacity (veh/h)	163	169	847	180	103	859	629	1238				
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4	
Volume Total	369	3	5	162	158	158	3	13	640	640	18	
Volume Left	10	2	0	162	0	0	0	13	0	0	0	
Volume Right	357	0	5	0	0	0	3	0	0	0	18	
cSH	875	144	859	629	1700	1700	1700	1238	1700	1700	1700	
Volume to Capacity	0.42	0.02	0.01	0.26	0.09	0.09	0.00	0.01	0.38	0.38	0.01	
Queue Length 95th (ft)	53	2	0	26	0	0	0	1	0	0	0	
Control Delay (s)	12.8	30.6	9.2	12.7	0.0	0.0	0.0	7.9	0.0	0.0	0.0	
Lane LOS	B	D	A	B								
Approach Delay (s)	12.8	17.2		4.3	0.1							
Approach LOS	B	C										
Intersection Summary												
Average Delay				3.2								
Intersection Capacity Utilization				66.2%	ICU Level of Service				C			
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

4: Urbana Pike & Plaza Driveway

07/14/2021

																			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR							
Lane Configurations																			
Traffic Volume (veh/h)	16	16	199	9	20	51	353	894	13	75	394	32							
Future Volume (Veh/h)	16	16	199	9	20	51	353	894	13	75	394	32							
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	17	216	10	22	55	384	972	14	82	428	35							
Pedestrians																			
Lane Width (ft)																			
Walking Speed (ft/s)																			
Percent Blockage																			
Right turn flare (veh)	6																		
Median type							Raised			Raised									
Median storage veh							1			1									
Upstream signal (ft)										506									
pX, platoon unblocked																			
vC, conflicting volume	1912	2346	214	2126	2367	486	463				986								
vC1, stage 1 conf vol	592	592			1740	1740													
vC2, stage 2 conf vol	1320	1754			386	627													
vCu, unblocked vol	1912	2346	214	2126	2367	486	463				986								
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1				4.1								
tC, 2 stage (s)	6.5	5.5			6.5	5.5													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2								
p0 queue free %	0	17	73	0	25	90	65				88								
cM capacity (veh/h)	10	20	791	4	29	527	1095				696								
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4								
Volume Total	250	32	55	384	486	486	14	82	214	214	35								
Volume Left	17	10	0	384	0	0	0	82	0	0	0								
Volume Right	216	0	55	0	0	0	14	0	0	0	35								
cSH	102	11	527	1095	1700	1700	1700	696	1700	1700	1700								
Volume to Capacity	2.45	2.99	0.10	0.35	0.29	0.29	0.01	0.12	0.13	0.13	0.02								
Queue Length 95th (ft)	566	126	9	40	0	0	0	10	0	0	0								
Control Delay (s)	749.0	1597.1	12.6	10.1	0.0	0.0	0.0	10.9	0.0	0.0	0.0								
Lane LOS	F	F	B	B															
Approach Delay (s)	749.0	595.4			2.8														
Approach LOS	F	F																	
Intersection Summary																			
Average Delay				108.3															
Intersection Capacity Utilization				48.8%	ICU Level of Service				A										
Analysis Period (min)				15															

HCM Unsignalized Intersection Capacity Analysis

9: Worthington Boulevard & Urbana Parkway

11/30/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	2	45	23	660	1368	18	
Future Volume (Veh/h)	2	45	23	660	1368	18	
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	49	25	717	1487	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)				827			
pX, platoon unblocked							
vC, conflicting volume	1906	754	1507				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1906	754	1507				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	96	86	94				
cM capacity (veh/h)	57	352	440				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	2	49	25	358	358	991	516
Volume Left	2	0	25	0	0	0	0
Volume Right	0	49	0	0	0	0	20
cSH	57	352	440	1700	1700	1700	1700
Volume to Capacity	0.04	0.14	0.06	0.21	0.21	0.58	0.30
Queue Length 95th (ft)	3	12	5	0	0	0	0
Control Delay (s)	70.5	16.9	13.7	0.0	0.0	0.0	0.0
Lane LOS	F	C	B				
Approach Delay (s)	19.0		0.5	0.0			
Approach LOS	C						
Intersection Summary							
Average Delay			0.6				
Intersection Capacity Utilization			48.4%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis

9: Urbana Pike & Urbana Parkway

11/30/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	34	24	38	1129	627	36	
Future Volume (Veh/h)	34	24	38	1129	627	36	
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)	37	26	41	1227	682	39	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None	None		
Median storage (veh)							
Upstream signal (ft)				827			
pX, platoon unblocked							
vC, conflicting volume	1397	360	721				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1397	360	721				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	71	96	95				
cM capacity (veh/h)	126	636	877				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	37	26	41	614	614	455	266
Volume Left	37	0	41	0	0	0	0
Volume Right	0	26	0	0	0	0	39
cSH	126	636	877	1700	1700	1700	1700
Volume to Capacity	0.29	0.04	0.05	0.36	0.36	0.27	0.16
Queue Length 95th (ft)	28	3	4	0	0	0	0
Control Delay (s)	45.1	10.9	9.3	0.0	0.0	0.0	0.0
Lane LOS	E	B	A				
Approach Delay (s)	31.0		0.3	0.0			
Approach LOS	D						
Intersection Summary							
Average Delay			1.1				
Intersection Capacity Utilization			41.2%		ICU Level of Service		A
Analysis Period (min)			15				

MOVEMENT SUMMARY**Site: 05. (BG_2026_AM) MD 355 and Sugarloaf Pkwy**Urbana YMCA
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sugarloaf Pkwy											
3	L2	18	3.0	0.103	11.7	LOS B	0.3	6.7	0.70	1.39	22.4
8	T1	40	3.0	0.103	11.3	LOS B	0.3	6.7	0.68	1.37	23.1
18	R2	18	3.0	0.103	10.9	LOS B	0.3	6.5	0.67	1.34	23.9
Approach		77	3.0	0.103	11.3	LOS B	0.3	6.7	0.68	0.68	23.1
East: MD 355											
1	L2	18	3.0	0.535	10.8	LOS B	2.2	57.5	0.32	0.42	22.1
6	T1	899	3.0	0.535	10.8	LOS B	2.2	57.5	0.31	0.41	22.1
16	R2	90	3.0	0.535	10.8	LOS B	2.1	54.1	0.30	0.40	22.1
Approach		1008	3.0	0.535	10.8	LOS B	2.2	57.5	0.31	0.20	22.1
North: Sugarloaf Pkwy											
7	L2	323	3.0	0.617	20.1	LOS C	2.7	68.8	0.73	1.59	14.3
4	T1	297	3.0	0.617	19.3	LOS C	2.7	68.8	0.71	1.54	15.2
14	R2	53	3.0	0.617	19.3	LOS C	2.6	66.6	0.71	1.54	15.2
Approach		673	3.0	0.617	19.7	LOS C	2.7	68.8	0.72	0.78	14.7
West: MD 355											
5	L2	91	3.0	1.351	187.3	LOS F	82.4	2110.5	1.00	7.42	3.8
2	T1	1426	3.0	1.351	186.9	LOS F	84.7	2167.3	1.00	7.49	3.8
12	R2	280	3.0	1.351	186.5	LOS F	84.7	2167.3	1.00	7.58	3.8
Approach		1798	3.0	1.351	186.9	LOS F	84.7	2167.3	1.00	3.75	3.8
All Vehicles		3555	3.0	1.351	101.5	LOS F	84.7	2167.3	0.74	2.12	6.2

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

Roundabout LOS Method: Same as Sign Control.

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

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

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

Roundabout Capacity Model: US HCM 2010.

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

Gap-Acceptance Capacity: Traditional M1.

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

Processed: Friday, November 16, 2018 3:54:56 PM
SIDRA INTERSECTION 6.0.1.3703Project: O:\Projects\8501-9000\8513 Knowledge Farms MXD\Analysis\SIDRA\Roundabout Analyses
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INTERSECTION 6**

MOVEMENT SUMMARY**Site: 05. (BG_2026_PM) MD 355 and Sugarloaf Pkwy**Urbana YMCA
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sugarloaf Pkwy											
3	L2	127	3.0	0.500	21.6	LOS C	1.7	43.1	0.79	1.70	18.3
8	T1	247	3.0	0.500	20.6	LOS C	1.7	43.1	0.78	1.66	19.4
18	R2	10	3.0	0.500	20.3	LOS C	1.6	42.0	0.77	1.65	19.8
Approach		384	3.0	0.500	20.9	LOS C	1.7	43.1	0.78	0.84	19.0
East: MD 355											
1	L2	78	3.0	1.000	56.8	LOS F	19.8	507.6	1.00	2.99	9.9
6	T1	1235	3.0	1.000	56.5	LOS F	19.8	507.6	1.00	2.97	9.9
16	R2	180	3.0	1.000	56.1	LOS F	19.5	499.8	1.00	2.96	9.9
Approach		1493	3.0	1.000	56.4	LOS F	19.8	507.6	1.00	1.49	9.9
North: Sugarloaf Pkwy											
7	L2	180	3.0	0.524	23.1	LOS C	1.8	45.8	0.81	1.73	13.6
4	T1	155	3.0	0.524	21.7	LOS C	1.8	45.8	0.79	1.69	14.3
14	R2	57	3.0	0.524	21.6	LOS C	1.7	44.7	0.79	1.69	14.4
Approach		392	3.0	0.524	22.3	LOS C	1.8	45.8	0.80	0.86	13.9
West: MD 355											
5	L2	93	3.0	1.010	58.3	LOS F	22.5	574.7	1.00	3.05	9.6
2	T1	1147	3.0	1.010	58.1	LOS F	22.5	574.7	1.00	3.04	9.6
12	R2	323	3.0	1.010	57.7	LOS F	22.1	566.6	1.00	3.02	9.6
Approach		1563	3.0	1.010	58.0	LOS F	22.5	574.7	1.00	1.52	9.6
All Vehicles		3833	3.0	1.010	50.0	LOS F	22.5	574.7	0.96	1.37	10.7

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

Roundabout LOS Method: Same as Sign Control.

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

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

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

Roundabout Capacity Model: US HCM 2010.

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

Gap-Acceptance Capacity: Traditional M1.

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

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MOVEMENT SUMMARY**Site: 06. (BG_2026_AM) MD 80 and Sugarloaf Pkwy**

Urbana YMCA
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sugarloaf Pkwy											
3	L2	66	3.0	0.148	13.3	LOS B	0.4	9.6	0.73	1.45	19.3
8	T1	14	3.0	0.148	12.6	LOS B	0.4	9.3	0.71	1.42	20.3
18	R2	21	3.0	0.148	12.6	LOS B	0.4	9.3	0.71	1.42	20.3
Approach		101	3.0	0.148	13.1	LOS B	0.4	9.6	0.72	0.72	19.6
East: MD 80											
1	L2	77	3.0	0.663	18.0	LOS C	3.6	91.8	0.68	1.49	18.0
6	T1	1317	3.0	0.663	17.9	LOS C	3.6	91.8	0.67	1.47	18.3
16	R2	7	3.0	0.663	18.0	LOS C	3.6	91.8	0.68	1.49	18.3
Approach		1401	3.0	0.663	17.9	LOS C	3.6	91.8	0.67	0.73	18.3
North: Sugarloaf Pkwy											
7	L2	9	3.0	0.088	10.8	LOS B	0.2	5.5	0.67	1.34	19.7
4	T1	25	3.0	0.088	10.8	LOS B	0.2	5.5	0.67	1.34	19.7
14	R2	424	3.0	0.254	0.0	LOS A	0.0	0.0	0.00	0.00	30.0
Approach		458	3.0	0.254	0.8	LOS A	0.2	5.5	0.05	0.05	28.8
West: MD 80											
5	L2	507	3.0	0.503	9.7	LOS A	2.3	57.7	0.30	0.37	20.6
2	T1	1046	3.0	0.602	11.8	LOS B	3.2	82.2	0.34	0.44	22.0
12	R2	171	3.0	0.602	11.8	LOS B	3.2	82.2	0.35	0.45	21.8
Approach		1723	3.0	0.602	11.2	LOS B	3.2	82.2	0.33	0.21	21.5
All Vehicles		3683	3.0	0.663	12.5	LOS B	3.6	91.8	0.44	0.40	20.6

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

Roundabout LOS Method: Same as Sign Control.

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

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

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

Roundabout Capacity Model: US HCM 2010.

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

Gap-Acceptance Capacity: Traditional M1.

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

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MOVEMENT SUMMARY**Site: 06. (BG_2026_PM) MD 80 and Sugarloaf Pkwy**

Urbana YMCA
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sugarloaf Pkwy											
3	L2	266	3.0	0.776	55.6	LOS F	3.0	77.8	0.93	2.17	10.3
8	T1	50	3.0	0.776	52.5	LOS F	3.0	77.2	0.93	2.15	10.4
18	R2	75	3.0	0.776	52.5	LOS F	3.0	77.2	0.93	2.15	10.4
Approach		391	3.0	0.776	54.6	LOS F	3.0	77.8	0.93	1.08	10.3
East: MD 80											
1	L2	53	3.0	0.658	20.6	LOS C	3.2	81.6	0.71	1.57	17.1
6	T1	1103	3.0	0.658	20.3	LOS C	3.2	81.6	0.70	1.55	17.3
16	R2	11	3.0	0.658	20.6	LOS C	3.2	81.6	0.71	1.57	17.2
Approach		1167	3.0	0.658	20.3	LOS C	3.2	81.6	0.70	0.78	17.3
North: Sugarloaf Pkwy											
7	L2	14	3.0	0.066	10.1	LOS B	0.2	4.1	0.66	1.31	19.4
4	T1	12	3.0	0.066	10.1	LOS B	0.2	4.1	0.66	1.31	19.4
14	R2	491	3.0	0.294	0.0	LOS A	0.0	0.0	0.00	0.00	30.0
Approach		517	3.0	0.294	0.5	LOS A	0.2	4.1	0.03	0.03	29.1
West: MD 80											
5	L2	502	3.0	0.487	9.2	LOS A	2.2	55.3	0.24	0.27	20.8
2	T1	1455	3.0	0.730	15.9	LOS C	5.4	138.0	0.39	0.45	19.8
12	R2	53	3.0	0.730	15.9	LOS C	5.4	138.0	0.40	0.46	19.7
Approach		2011	3.0	0.730	14.2	LOS B	5.4	138.0	0.35	0.20	20.1
All Vehicles		4087	3.0	0.776	18.1	LOS C	5.4	138.0	0.47	0.43	18.0

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

Roundabout LOS Method: Same as Sign Control.

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

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

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

Roundabout Capacity Model: US HCM 2010.

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

Gap-Acceptance Capacity: Traditional M1.

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

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INTERSECTION 6

APPENDIX F

DETAILED SITE TRIP ASSIGNMENTS

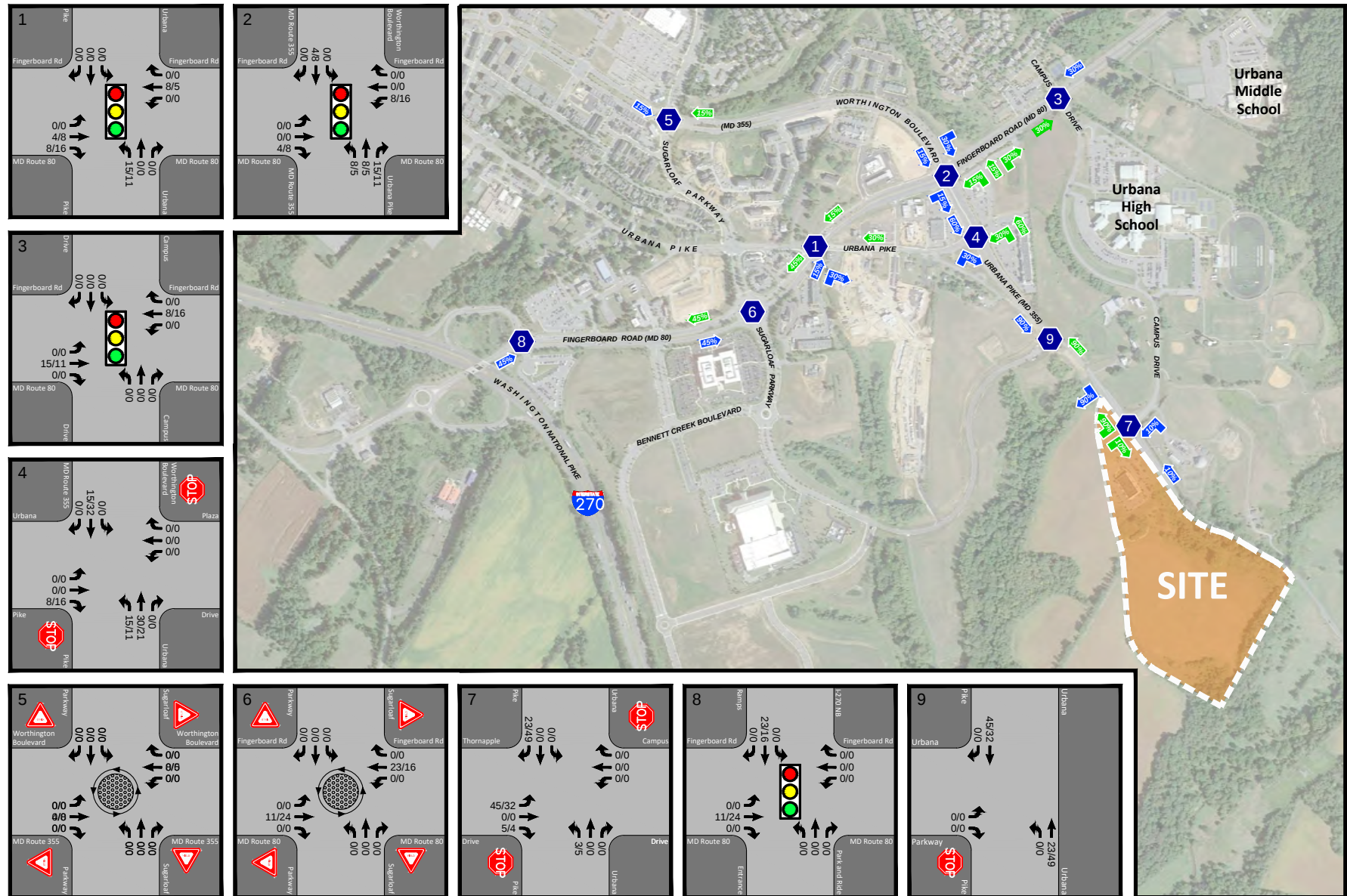


Figure 6-1A
Proposed Site Traffic Assignments
(220 Residential Dwelling Units)

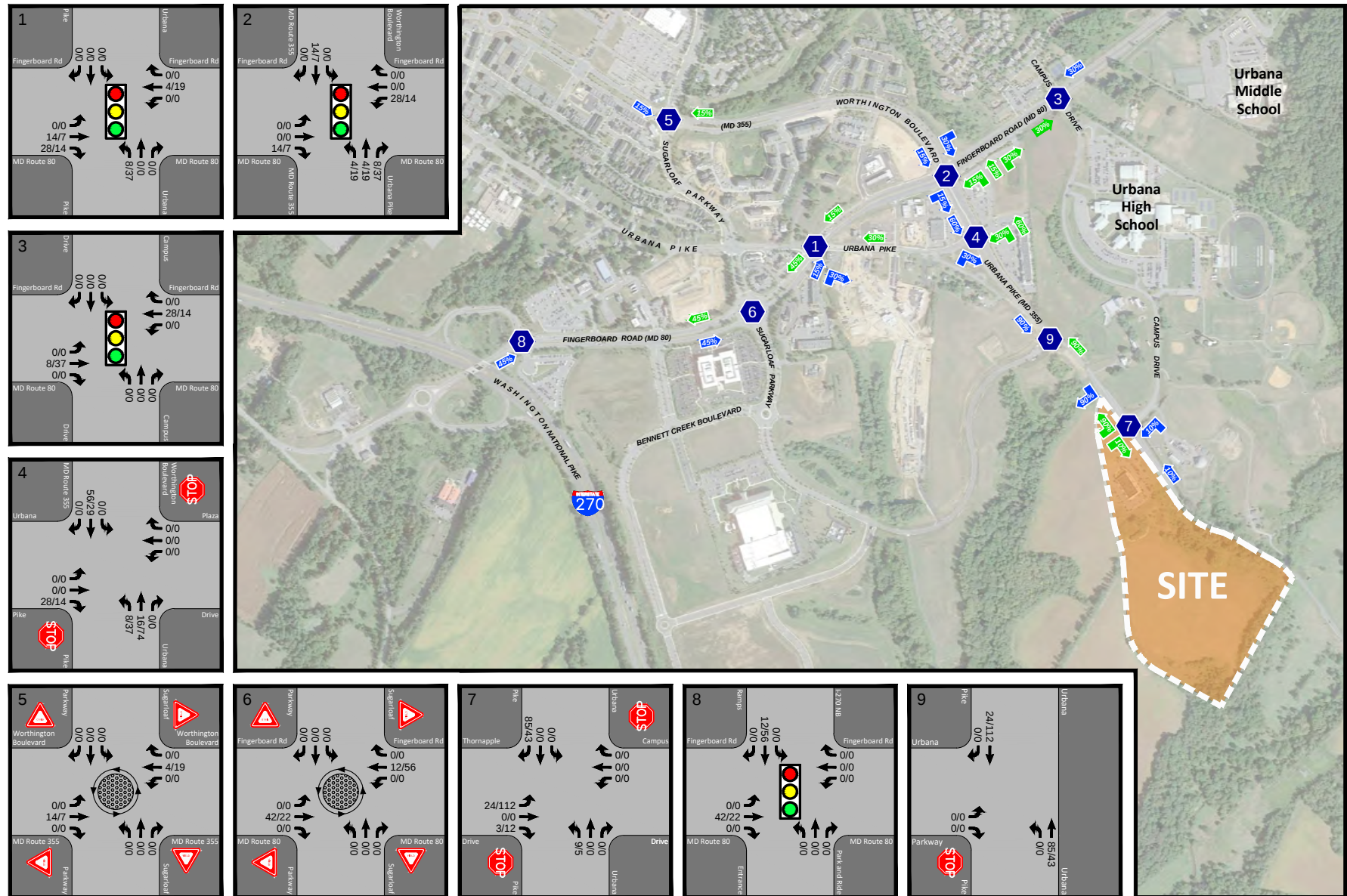


Figure 6-1B
Proposed Site Traffic Assignments
(50,000 SF of Commercial Use)

APPENDIX G
TOTAL FUTURE CLVs WORKSHEETS, HCM REPORTS, AND SIDRA
REPORTS

02. MD 80 / MD 355 (Worthington Boulevard) Critical Lane Volume Level of Service Calculations	Intersection: <u>02. MD 80 / MD 355 (Worthington Boulevard)</u> Jurisdiction: <u>Frederick County, Maryland</u> Scenario/Design Year: <u>Total Future Conditions</u> Computed by: <u>Wells + Associates</u>	
--	--	--

AM Peak

Lane Configuration

MD 355	1	1	2	MD 80
TR	T	L		R
				T
				L
				MD 355
	L	T	R	
	2	2	1	

PM Peak

Intersection Control: Signal: x Stop:
 Split: Ways:

RTOR/Overlap (AM): NB 49 SB 0 EB 0 WB 313
 RTOR/Overlap (PM): NB 197 SB 0 EB 0 WB 338

PCE (AM): NB 1 SB 1 EB 1 WB 1
 PCE (PM): NB 1 SB 1 EB 1 WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume
<199	1.10	1	1.00	A ≤ 1,000
200-599	2.00	2	0.55	B ≤ 1,150
600-799	3.00	3	0.40	C ≤ 1,300
800-999	4.00	4	0.30	D ≤ 1,450
>999	5.00	5	0.25	E ≤ 1,600
		2 lefts	0.60	F > 1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	659	0.40	264	430	1.00	430	694	*
WB	T	1,029	0.55	566	170	0.60	102	668	
NB	T	264	0.55	145	522	0.60	313	458	
SB	TR	973	0.55	535	83	0.60	50	585	*
SUM								1279	
								C	

Note: The future resriping of the eastbound right turn lane to a shared through-right lane (By Others) was included for all future conditions.

Note: The future resriping of the eastbound right turn lane to a shared through-right lane (By Others) was included for all future conditions.

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	1,267	0.40	507	263	1.00	263	770	*
WB	T	578	0.55	318	361	0.60	217	535	
NB	T	652	0.55	359	563	0.60	338	697	*
SB	TR	597	0.55	328	202	0.60	121	449	
SUM								1467	
								E	

03. MD 80 / Campus Drive

Critical Lane Volume

Level of Service Calculations

Intersection: 03. MD 80 / Campus Drive

Jurisdiction: Frederick County, Maryland

Scenario/Design Year: Total Future Conditions

Computed by: Wells + Associates

AM Peak

121

144

12

13

53

669

246

175

39

133

24

1,619

208

Lane Configuration

Campus Drive

1

1

R

TL

MD 80

TR

1

T

1

L

1

MD 80

L

1

R

L

1

T

1

R

1

PM Peak

57

11

22

24

115

1,626

105

145

26

146

8

1,028

173

Intersection Control: Signal: x Stop:

Split: Ways:

RTOR/Overlap (AM): NB 133 SB 53 EB 175 WB 0

RTOR/Overlap (PM): NB 146 SB 57 EB 105 WB 0

PCE (AM): NB 1 SB 1.1 EB 1 WB 1

PCE (PM): NB 1 SB 1.1 EB 1 WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume
<199	1.10	1	1.00	A ≤ 1,000
200-599	2.00	2	0.55	B ≤ 1,150
600-799	3.00	3	0.40	C ≤ 1,300
800-999	4.00	4	0.30	D ≤ 1,450
>999	5.00	5	0.25	E ≤ 1,600
		2 lefts	0.60	F > 1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	669	0.55	368	208	1.00	208	576	
WB	TR	1,643	0.55	904	53	1.00	53	957	*
NB	T	39	1.00	39	12	1.00	12	51	
SB	TL	157	1.00	157	175	1.00	175	332	*
							SUM	1289	
								C	

Note: An additional eastbound through lane is being added at this intersection by Others and was assumed for all future conditions.
The Applicant proposes to add a dedicated left turn lane on Campus Drive.

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	1,626	0.55	894	173	1.00	173	1067	*
WB	TR	1,036	0.55	570	115	1.00	115	685	
NB	T	26	1.00	26	22	1.00	22	48	
SB	TL	35	1.00	35	145	1.00	145	180	*
							SUM	1247	
								C	

Note: An additional eastbound through lane is being added at this intersection by Others and was assumed for all future conditions.
The Applicant proposes to add a dedicated left turn lane on Campus Drive.

07. MD 355 / Campus Drive

Critical Lane Volume

Level of Service Calculations

Intersection: 07. MD 355 / Campus Drive

Jurisdiction: Frederick County, Maryland

Scenario/Design Year: Total Future Conditions

Computed by: Wells + Associates

Lane Configuration

AM Peak

103

94

18

19

102

23

19

21

18

429

204

MD 355

1

R

2

T

1

L

1

TL

1

R

Thornapple Drive

1

L

1

T

1

R

MD 355

PM Peak

223

203

30

31

47

21

42

46

27

55

46

1

R

1

TL

Intersection Control: Signal: x (By Others)

Stop:

Split:

Ways:

RTOR/Overlap (AM): NB 19

RTOR/Overlap (PM): NB 42

PCE (AM): NB 1

PCE (PM): NB 1

SB 94

SB 126

SB 1

SB 1

EB 18

EB 27

EB 1.1

EB 1.1

WB 102

WB 28

WB 1.1

WB 1.1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume
<199	1.10	1	1.00	A ≤ 1,000
200-599	2.00	2	0.55	B ≤ 1,150
600-799	3.00	3	0.40	C ≤ 1,300
800-999	4.00	4	0.30	D ≤ 1,450
>999	5.00	5	0.25	E ≤ 1,600
		2 lefts	0.60	F > 1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TL	121	1.00	121	19	1.00	19	140	*
WB	TL	44	1.00	44	94	1.00	94	138	
NB	T	429	1.00	429	318	1.00	318	747	*
SB	T	965	0.55	531	18	1.00	18	549	
SUM								887	
								A	

Note:

An additional eastbound egress lane, southbound through lane and a traffic signal are planned to be installed at this intersection (By Others) and were assumed for all future conditions.

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TL	253	1.00	253	42	1.00	42	295	*
WB	TL	67	1.00	67	203	1.00	203	270	
NB	T	1,026	1.00	1026	46	1.00	46	1072	*
SB	T	578	0.55	318	27	1.00	27	345	
SUM								1367	
								D	

Note:

An additional eastbound egress lane, southbound through lane and a traffic signal are planned to be installed at this intersection (By Others) and were assumed for all future conditions.

08. MD 80 / I-270 NB Ramps

Critical Lane Volume

Level of Service Calculations

Intersection: 08. MD 80 / I-270 NB Ramps

Jurisdiction: Frederick County, Maryland

Scenario/Design Year: Total Future Conditions

Computed by: Wells + Associates

Lane Configuration

AM Peak

PM Peak

Intersection Control: Signal: x Stop:

Split: N/S Ways: NB/SB

RTOR/Overlap (AM): NB 1 SB 47 EB 0 WB 373

RTOR/Overlap (PM): NB 14 SB 59 EB 0 WB 382

PCE (AM): NB 1 SB 1 EB 1 WB 1

PCE (PM): NB 1 SB 1 EB 1 WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume	
<199	1.10	1	1.00	A ≤	1,000
200-599	2.00	2	0.55	B ≤	1,150
600-799	3.00	3	0.40	C ≤	1,300
800-999	4.00	4	0.30	D ≤	1,450
>999	5.00	5	0.25	E ≤	1,600
		2 lefts	0.60	F >	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	1,066	0.55	586	3	1.00	3	589	
WB	T	821	1.00	821	106	1.00	106	927	*
NB	TL	1	1.00	1	0	0.55	0	1	*
SB	TL	374	0.60	224	0	1.00	0	224	*
SUM								1152	
								C	

Note:

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	1,463	0.55	805	14	1.00	14	819	
WB	T	1,037	1.00	1037	59	1.00	59	1096	*
NB	R	55	1.00	55	0	0.55	0	55	*
SB	TL	663	0.60	398	0	1.00	0	398	*
SUM								1549	
								E	

Note:

08. MD 80 / I-270 Ramps

Critical Lane Volume

Level of Service Calculations

Intersection: 08. MD 80 / I-270 Ramps

Jurisdiction: Frederick County, Maryland

Scenario/Design Year: 2026 Total Future Conditions with Improvements

Computed by: Wells + Associates

Lane Configuration

AM Peak

47

1

###

106

106

1,066

-

788

821

3

3

1

1

1

1

1

1

1

1

1

MD 80

1

1

1

1

1

1

MD 80

1

1

1

1

1

1

MD 80

1

1

1

1

1

1

MD 80

1

1

1

1

1

1

MD 80

1

1

1

1

1

1

PM Peak

61

27

###

59

59

1,458

5

1,020

1,037

14

14

1

1

1

1

1

1

1

1

1

MD 80

1

1

1

1

1

1

MD 80

1

1

1

1

1

1

MD 80

1

1

1

1

1

1

MD 80

1

1

1

1

1

1

Intersection Control:

Signal: x

Split: N/S

Stop:

Ways: NB/SB

RTOR/Overlap (AM): NB 1

RTOR/Overlap (PM): NB 14

PCE (AM): NB 1

PCE (PM): NB 1

SB 47

SB 59

SB 1

SB 1

EB 0

EB 0

EB 1

EB 1

WB 373

WB 382

WB 1

WB 1

Opposing Volume

PCE

Number of Lanes

Lane Use Factor

Critical Lane Volume

<199

1.10

1

1.00

A ≤ 1,000

200-599

2.00

2

0.55

B ≤ 1,150

600-799

3.00

3

0.40

C ≤ 1,300

800-999

4.00

4

0.30

D ≤ 1,450

>999

5.00

5

0.25

E ≤ 1,600

2 lefts

0.60

F > 1,600

Phase

Movement

Volume

Lane Use Factor

Lane Volume

Opposing Lefts

Lane Use Factor

Opposing Volume

Critical Lane Volume

*

EB

TR

1,066

0.55

586

3

1.00

3

589

*

WB

T

821

0.55

452

106

1.00

106

558

*

NB

TL

1

1.00

1

0

0.55

0

1

*

SB

TL

374

0.60

224

0

1.00

0

224

*

Note:

SUM 814

A

Phase

Movement

Volume

Lane Use Factor

Lane Volume

Opposing Lefts

Lane Use Factor

Opposing Volume

Critical Lane Volume

*

EB

TR

1,463

0.55

805

14

1.00

14

819

*

WB

T

1,037

0.55

570

59

1.00

59

629

*

NB

R

55

1.00

55

0

0.55

0

55

*

SB

TL

663

0.60

398

0

1.00

0

398

*

Note:

SUM 1272

C

HCM Unsignalized Intersection Capacity Analysis

4: Urbana Pike & Plaza Driveway

08/11/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	2	364	2	1	5	172	337	3	12	1248	17
Future Volume (Veh/h)	9	2	364	2	1	5	172	337	3	12	1248	17
Sign Control	Stop				Stop				Free			
Grade	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)	10	2	396	2	1	5	187	366	3	13	1357	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	6											
Median type							Raised			Raised		
Median storage (veh)							1			1		
Upstream signal (ft)										506		
pX, platoon unblocked	0.80	0.80	0.80	0.80	0.80	0.80						
vC, conflicting volume	1946	2126	678	1446	2141	183	1375			369		
vC1, stage 1 conf vol	1383	1383	740		740							
vC2, stage 2 conf vol	562	743	706		1401							
vCu, unblocked vol	1677	1904	88	1050	1922	183	961			369		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5	6.5		5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	99	48	98	98	99	67			99		
cM capacity (veh/h)	130	137	760	102	57	828	567			1186		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4	
Volume Total	408	3	5	187	183	183	3	13	678	678	18	
Volume Left	10	2	0	187	0	0	0	13	0	0	0	
Volume Right	396	0	5	0	0	0	3	0	0	0	18	
cSH	783	81	828	567	1700	1700	1700	1186	1700	1700	1700	
Volume to Capacity	0.52	0.04	0.01	0.33	0.11	0.11	0.00	0.01	0.40	0.40	0.01	
Queue Length 95th (ft)	77	3	0	36	0	0	0	1	0	0	0	
Control Delay (s)	15.4	51.2	9.4	14.4	0.0	0.0	0.0	8.1	0.0	0.0	0.0	
Lane LOS	C	F	A	B	A							
Approach Delay (s)	15.4	25.1	4.9		0.1							
Approach LOS	C	D										
Intersection Summary												
Average Delay	3.9											
Intersection Capacity Utilization	70.4%			ICU Level of Service					C			
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

4: Urbana Pike & Plaza Driveway

08/11/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	16	229	9	20	51	401	989	13	75	455	32
Future Volume (Veh/h)	16	16	229	9	20	51	401	989	13	75	455	32
Sign Control	Stop				Stop				Free			
Grade	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	17	249	10	22	55	436	1075	14	82	495	35
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	6											
Median type							Raised			Raised		
Median storage veh)							1			1		
Upstream signal (ft)							506					
pX, platoon unblocked												
vC, conflicting volume	2134	2620	248	2367	2641	538	530	1089				
vC1, stage 1 conf vol	659	659	1947		1947							
vC2, stage 2 conf vol	1476	1961	420		694							
vCu, unblocked vol	2134	2620	248	2367	2641	538	530	1089				
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1	4.1				
tC, 2 stage (s)	6.5	5.5	6.5		5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	0	0	67	0	0	89	58	87				
cM capacity (veh/h)	0	12	753	0	12	488	1033	636				
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4	
Volume Total	283	32	55	436	538	538	14	82	248	248	35	
Volume Left	17	10	0	436	0	0	0	82	0	0	0	
Volume Right	249	0	55	0	0	0	14	0	0	0	35	
cSH	9	0	488	1033	1700	1700	1700	636	1700	1700	1700	
Volume to Capacity	30.36	Err	0.11	0.42	0.32	0.32	0.01	0.13	0.15	0.15	0.02	
Queue Length 95th (ft)	Err	Err	9	53	0	0	0	11	0	0	0	
Control Delay (s)	Err	Err	13.3	11.0	0.0	0.0	0.0	11.5	0.0	0.0	0.0	
Lane LOS	F	F	B	B	B							
Approach Delay (s)	Err	Err	3.1		1.5							
Approach LOS	F	F										
Intersection Summary												
Average Delay	Err											
Intersection Capacity Utilization	53.2%			ICU Level of Service					A			
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

9: Urbana Pike & Urbana Parkway

11/30/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	2	45	23	768	1437	18	
Future Volume (Veh/h)	2	45	23	768	1437	18	
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	49	25	835	1562	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)				835			
pX, platoon unblocked							
vC, conflicting volume	2040	791	1582				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	2040	791	1582				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	96	85	94				
cM capacity (veh/h)	46	332	412				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	2	49	25	418	418	1041	541
Volume Left	2	0	25	0	0	0	0
Volume Right	0	49	0	0	0	0	20
cSH	46	332	412	1700	1700	1700	1700
Volume to Capacity	0.04	0.15	0.06	0.25	0.25	0.61	0.32
Queue Length 95th (ft)	3	13	5	0	0	0	0
Control Delay (s)	86.8	17.7	14.3	0.0	0.0	0.0	0.0
Lane LOS	F	C	B				
Approach Delay (s)	20.4		0.4	0.0			
Approach LOS	C						
Intersection Summary							
Average Delay			0.6				
Intersection Capacity Utilization			50.3%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis

9: Urbana Pike & Urbana Parkway

11/30/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations				 	 		
Traffic Volume (veh/h)	34	24	38	1221	771	36	
Future Volume (Veh/h)	34	24	38	1221	771	36	
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)	37	26	41	1327	838	39	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None	None		
Median storage (veh)							
Upstream signal (ft)				855			
pX, platoon unblocked							
vC, conflicting volume	1603	438	877				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1603	438	877				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	59	95	95				
cM capacity (veh/h)	91	566	766				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	37	26	41	664	664	559	318
Volume Left	37	0	41	0	0	0	0
Volume Right	0	26	0	0	0	0	39
cSH	91	566	766	1700	1700	1700	1700
Volume to Capacity	0.41	0.05	0.05	0.39	0.39	0.33	0.19
Queue Length 95th (ft)	41	4	4	0	0	0	0
Control Delay (s)	69.2	11.7	10.0	0.0	0.0	0.0	0.0
Lane LOS	F	B	A				
Approach Delay (s)	45.4		0.3	0.0			
Approach LOS	E						
Intersection Summary							
Average Delay			1.4				
Intersection Capacity Utilization			43.8%		ICU Level of Service		A
Analysis Period (min)			15				

MOVEMENT SUMMARY

Site: 05. (TF_Buildout_AM) MD 355 and Sugarloaf Pkwy

Urbana YMCA
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sugarloaf Pkwy											
3	L2	18	3.0	0.104	11.7	LOS B	0.3	6.7	0.70	1.39	22.4
8	T1	40	3.0	0.104	11.3	LOS B	0.3	6.7	0.68	1.37	23.1
18	R2	18	3.0	0.104	10.9	LOS B	0.3	6.5	0.67	1.34	23.9
Approach		77	3.0	0.104	11.3	LOS B	0.3	6.7	0.68	0.68	23.1
East: MD 355											
1	L2	18	3.0	0.541	11.0	LOS B	2.3	58.8	0.32	0.42	22.0
6	T1	912	3.0	0.541	10.9	LOS B	2.3	58.8	0.31	0.41	22.0
16	R2	90	3.0	0.541	10.9	LOS B	2.2	55.4	0.30	0.40	22.0
Approach		1021	3.0	0.541	10.9	LOS B	2.3	58.8	0.31	0.21	22.0
North: Sugarloaf Pkwy											
7	L2	323	3.0	0.623	20.6	LOS C	2.7	69.8	0.73	1.61	14.2
4	T1	297	3.0	0.623	19.8	LOS C	2.7	69.8	0.71	1.56	15.1
14	R2	53	3.0	0.623	19.7	LOS C	2.6	67.6	0.71	1.56	15.1
Approach		673	3.0	0.623	20.1	LOS C	2.7	69.8	0.72	0.79	14.6
West: MD 355											
5	L2	91	3.0	1.365	193.4	LOS F	85.5	2188.0	1.00	7.58	3.7
2	T1	1446	3.0	1.365	193.1	LOS F	87.8	2247.4	1.00	7.65	3.7
12	R2	280	3.0	1.365	192.7	LOS F	87.8	2247.4	1.00	7.74	3.7
Approach		1817	3.0	1.365	193.1	LOS F	87.8	2247.4	1.00	3.83	3.7
All Vehicles		3588	3.0	1.365	104.9	LOS F	87.8	2247.4	0.74	2.16	6.0

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

Roundabout LOS Method: Same as Sign Control.

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

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

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

Roundabout Capacity Model: US HCM 2010.

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

Gap-Acceptance Capacity: Traditional M1.

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

Processed: Wednesday, August 11, 2021 2:25:18 PM

SIDRA INTERSECTION 6.0.1.3703

Project: O:\Projects\8501-9000\8513 Knowledge Farms MXD\Analysis\SIDRA\Roundabout Analyses

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SIDRA
INTERSECTION 6

MOVEMENT SUMMARY

Site: 05. (TF_Buildout_PM) MD 355 and Sugarloaf Pkwy

Urbana YMCA
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sugarloaf Pkwy											
3	L2	127	3.0	0.502	21.7	LOS C	1.7	43.3	0.79	1.70	18.3
8	T1	247	3.0	0.502	20.7	LOS C	1.7	43.3	0.78	1.67	19.4
18	R2	10	3.0	0.502	20.4	LOS C	1.6	42.2	0.78	1.66	19.7
Approach		384	3.0	0.502	21.0	LOS C	1.7	43.3	0.78	0.84	19.0
East: MD 355											
1	L2	78	3.0	1.017	61.1	LOS F	22.3	569.9	1.00	3.16	9.4
6	T1	1261	3.0	1.017	60.8	LOS F	22.3	569.9	1.00	3.15	9.4
16	R2	180	3.0	1.017	60.4	LOS F	22.0	563.5	1.00	3.14	9.4
Approach		1520	3.0	1.017	60.8	LOS F	22.3	569.9	1.00	1.58	9.4
North: Sugarloaf Pkwy											
7	L2	180	3.0	0.525	23.2	LOS C	1.8	45.9	0.81	1.74	13.5
4	T1	155	3.0	0.525	21.8	LOS C	1.8	45.9	0.79	1.69	14.3
14	R2	57	3.0	0.525	21.8	LOS C	1.8	44.9	0.79	1.69	14.3
Approach		392	3.0	0.525	22.4	LOS C	1.8	45.9	0.80	0.86	13.9
West: MD 355											
5	L2	93	3.0	1.020	60.8	LOS F	24.0	614.2	1.00	3.15	9.4
2	T1	1163	3.0	1.020	60.6	LOS F	24.0	614.2	1.00	3.14	9.4
12	R2	323	3.0	1.020	60.2	LOS F	23.7	606.9	1.00	3.13	9.3
Approach		1579	3.0	1.020	60.5	LOS F	24.0	614.2	1.00	1.57	9.4
All Vehicles		3875	3.0	1.020	52.9	LOS F	24.0	614.2	0.96	1.43	10.3

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

Roundabout LOS Method: Same as Sign Control.

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

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

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

Roundabout Capacity Model: US HCM 2010.

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

Gap-Acceptance Capacity: Traditional M1.

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

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SIDRA INTERSECTION 6.0.1.3703

Project: O:\Projects\8501-9000\8513 Knowledge Farms MXD\Analysis\SIDRA\Roundabout Analyses

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SIDRA
INTERSECTION 6

MOVEMENT SUMMARY

Site: 06. (TF_Buildout_AM) MD 80 and Sugarloaf Pkwy

Urbana YMCA
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sugarloaf Pkwy											
3	L2	66	3.0	0.154	14.0	LOS B	0.4	10.0	0.74	1.48	19.0
8	T1	14	3.0	0.154	13.2	LOS B	0.4	9.7	0.72	1.44	20.0
18	R2	21	3.0	0.154	13.2	LOS B	0.4	9.7	0.72	1.44	20.0
Approach		101	3.0	0.154	13.7	LOS B	0.4	10.0	0.73	0.73	19.3
East: MD 80											
1	L2	77	3.0	0.681	18.9	LOS C	3.8	97.5	0.69	1.52	17.7
6	T1	1355	3.0	0.681	18.7	LOS C	3.8	97.5	0.68	1.50	17.9
16	R2	7	3.0	0.681	18.9	LOS C	3.8	97.5	0.69	1.52	17.9
Approach		1439	3.0	0.681	18.7	LOS C	3.8	97.5	0.68	0.75	17.9
North: Sugarloaf Pkwy											
7	L2	9	3.0	0.091	11.1	LOS B	0.2	5.6	0.68	1.36	19.5
4	T1	25	3.0	0.091	11.1	LOS B	0.2	5.6	0.68	1.36	19.5
14	R2	424	3.0	0.254	0.0	LOS A	0.0	0.0	0.00	0.00	30.0
Approach		458	3.0	0.254	0.8	LOS A	0.2	5.6	0.05	0.05	28.8
West: MD 80											
5	L2	507	3.0	0.503	9.7	LOS A	2.3	57.7	0.30	0.37	20.6
2	T1	1103	3.0	0.631	12.6	LOS B	3.6	91.1	0.36	0.46	21.5
12	R2	171	3.0	0.631	12.6	LOS B	3.6	91.1	0.37	0.48	21.3
Approach		1780	3.0	0.631	11.8	LOS B	3.6	91.1	0.34	0.22	21.2
All Vehicles		3778	3.0	0.681	13.1	LOS B	3.8	97.5	0.45	0.42	20.3

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

Roundabout LOS Method: Same as Sign Control.

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

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

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

Roundabout Capacity Model: US HCM 2010.

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

Gap-Acceptance Capacity: Traditional M1.

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

Processed: Wednesday, August 11, 2021 2:27:39 PM

SIDRA INTERSECTION 6.0.1.3703

Project: O:\Projects\8501-9000\8513 Knowledge Farms MXD\Analysis\SIDRA\Roundabout Analyses

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SIDRA
INTERSECTION 6

MOVEMENT SUMMARY

Site: 06. (TF_Buildout_PM) MD 80 and Sugarloaf Pkwy

Urbana YMCA
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sugarloaf Pkwy											
3	L2	266	3.0	0.806	61.6	LOS F	3.3	83.5	0.94	2.22	9.6
8	T1	50	3.0	0.806	58.2	LOS F	3.2	83.0	0.94	2.21	9.7
18	R2	75	3.0	0.806	58.2	LOS F	3.2	83.0	0.94	2.21	9.7
Approach		391	3.0	0.806	60.5	LOS F	3.3	83.5	0.94	1.11	9.7
East: MD 80											
1	L2	53	3.0	0.702	22.9	LOS C	3.7	93.7	0.73	1.65	16.2
6	T1	1182	3.0	0.702	22.7	LOS C	3.7	93.7	0.73	1.63	16.4
16	R2	11	3.0	0.702	22.9	LOS C	3.7	93.7	0.73	1.65	16.3
Approach		1246	3.0	0.702	22.7	LOS C	3.7	93.7	0.73	0.82	16.4
North: Sugarloaf Pkwy											
7	L2	14	3.0	0.070	10.8	LOS B	0.2	4.3	0.68	1.35	19.0
4	T1	12	3.0	0.070	10.8	LOS B	0.2	4.3	0.68	1.35	19.0
14	R2	491	3.0	0.294	0.0	LOS A	0.0	0.0	0.00	0.00	30.0
Approach		517	3.0	0.294	0.6	LOS A	0.2	4.3	0.03	0.03	29.1
West: MD 80											
5	L2	502	3.0	0.487	9.2	LOS A	2.2	55.3	0.24	0.27	20.8
2	T1	1505	3.0	0.754	17.0	LOS C	6.0	152.7	0.42	0.48	19.2
12	R2	53	3.0	0.754	17.1	LOS C	6.0	152.7	0.43	0.50	19.2
Approach		2061	3.0	0.754	15.1	LOS C	6.0	152.7	0.38	0.22	19.6
All Vehicles		4215	3.0	0.806	19.8	LOS C	6.0	152.7	0.49	0.45	17.3

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

Roundabout LOS Method: Same as Sign Control.

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

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

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

Roundabout Capacity Model: US HCM 2010.

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

Gap-Acceptance Capacity: Traditional M1.

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

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SIDRA INTERSECTION 6.0.1.3703

Project: O:\Projects\8501-9000\8513 Knowledge Farms MXD\Analysis\SIDRA\Roundabout Analyses

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INTERSECTION 6

APPENDIX H TRAFFIC FORECASTS

01. MD 80 / Urbana Pike																	
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total	
				Urbana Pike			Fingerboard Rd (MD 80)			Urbana Pike			Fingerboard Rd (MD 80)				
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL		
Pipeline Developments																	
Monocacy Land Company	AM & PM			Total Traffic Assignments for All Remaining Uses Calculated Based on Latest Approved TIS for this Pipeline Development													
Landsdale	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Urbana Commons	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Knowledge Farms	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Urbana Village Center	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Sugarloaf Elementary School	AM & PM	X		5%									15%				
	AM & PM		X														
Urbana YMCA Property	AM & PM	X					15%			3%							
Knowledge Farms Site Trips																	
Inbound Site Traffic	AM & PM	X											30%			15%	
Outbound Site Traffic	AM & PM		X				15%			30%							

01. MD 80 / Urbana Pike																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Urbana Pike			Fingerboard Rd (MD 80)			Urbana Pike			Fingerboard Rd (MD 80)			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing Peak Hour	AM			8	76	55	38	809	9	4	19	126	153	266	25	1588
Traffic Counts (2018)	PM			11	54	60	36	487	14	5	68	229	125	603	48	1740
Regional Growth (2021)	AM			0	0	0	0	24	0	0	0	0	0	8	0	32
Increase arterial flows at 1.0 % per year for 3 years	PM			0	0	0	0	15	0	0	0	0	0	18	0	33
% Growth								3.0%						3.0%		
Regional Growth (2026)	AM							67						22		89
Increase arterial flows at 1.0 % per year for 8 years	PM							40						50		90
% Growth								8.3%						8.3%		
Existing Plus Regional Growth 2021	AM			8	76	55	38	833	9	4	19	126	153	274	25	1620
	PM			11	54	60	36	502	14	5	68	229	125	621	48	1773
Existing Plus Regional Growth 2026	AM			8	76	55	38	876	9	4	19	126	153	288	25	1677
	PM			11	54	60	36	527	14	5	68	229	125	653	48	1830
Monocacy Land Company	AM	1673	665		5			239			27	4	21	161		457
Urbana Properties	PM	873	1766		24			239			6	20	12	270		571
Landsdale	AM	118	357					131						43		174
	PM	359	210					76						131		207
Urbana Commons	AM	162	120					42						57		99
	PM	123	134					47						43		90
Knowledge Farms	AM	152	31					12				5	26	58		101
	PM	26	150					57				26	4	10		97
Urbana Village Center	AM	113	74									26	25	15		66
	PM	223	241									84	49	26		159
Sugarloaf Elementary School	AM	262	224	0	11	0	0	0	0	0	0	0	0	0	0	11
	PM	60	64	0	3	0	0	0	0	0	0	0	0	0	0	3
YMCA & Medical Office Bldg	AM	199	85	0	0	0	0	12	3	0	0	0	0	30	0	45
	PM	154	229	0	0	0	0	35	7	0	0	0	0	23	0	65
Subtotal All Pipeline	AM	2679	1556		16	0	0	436	3	0	27	35	72	364	0	953
	PM	1818	2794		27	0	0	454	7	0	6	130	65	503	0	1192
Background Future 2026 No-Build	AM			8	92	55	38	1312	12	4	46	161	225	652	25	2630
	PM			11	81	60	36	981	21	5	74	359	190	1156	48	3022
Knowledge Farms Property Existing Office Building	AM			0	0	0	0	0	0	0	0	0	0	0	0	0
	PM			0	0	0	0	0	0	0	0	0	0	0	0	0
Knowledge Farms Property Senior Adult Housing	AM	25	50	0	0	0	0	8	0	0	0	15	8	4	0	35
	PM	54	35	0	0	0	0	5	0	0	0	11	16	8	0	40
Knowledge Farms Property Medical/Dental Office Bldg	AM	94	27	0	0	0	0	4	0	0	0	8	28	14	0	54
	PM	48	124	0	0	0	0	19	0	0	0	37	14	7	0	77
Knowledge Farms Property Total Site Traffic at Buildout	AM	123	80	0	0	0	0	12	0	0	0	23	36	18	0	89
	PM	108	165	0	0	0	0	24	0	0	0	48	30	15	0	117
Buildout Total Future	AM			8	92	55	38	1324	12	4	46	184	261	670	25	2719
	PM			11	81	60	36	1005	21	5	74	407	220	1171	48	3139

02. MD 80 / MD 355 (Worthington Boulevard)																	
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total	
				Worthington Blvd (MD 355)			Fingerboard Rd (MD 80)			Worthington Blvd (MD 355)			Fingerboard Rd (MD 80)				
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL		
Pipeline Developments																	
Monocacy Land Company	AM & PM			Total Traffic Assignments for All Remaining Uses Calculated Based on Latest Approved TIS for this Pipeline Development													
Landsdale	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Urbana Commons	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Knowledge Farms	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Urbana Village Center	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Sugarloaf Elementary School	AM & PM	X					28%			10%							
	AM & PM		X	5% 28%													
Urbana YMCA Property	AM & PM	X					35%						18%				
			X				35% 18%										
Knowledge Farms Site Trips																	
Inbound Site Traffic	AM & PM	X		15%						30%			15%				
Outbound Site Traffic	AM & PM		X							30%			15%				

02. MD 80 / MD 355 (Worthington Boulevard)																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Worthington Blvd (MD 355)			Fingerboard Rd (MD 80)			Worthington Blvd (MD 355)			Fingerboard Rd (MD 80)			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing Peak Hour	AM			15	553	279	190	766	350	17	81	26	106	304	23	2710
Traffic Counts (2018)	PM			16	155	272	266	411	156	137	436	79	28	834	103	2893
Regional Growth (2021)	AM			0	17	0	0	23	0	0	2	0	0	9	0	51
Increase arterial flows at 1.0 % per year for 3 years	PM			0	5	0	0	12	0	0	13	0	0	25	0	55
% Growth				3.0%			3.0%			3.0%			3.0%			
Regional Growth (2026)	AM			46			64			7			25			142
Increase arterial flows at 1.0 % per year for 8 years	PM			13			34			36			69			152
% Growth				8.3%			8.3%			8.3%			8.3%			
Existing Plus Regional Growth 2021	AM			15	570	279	190	789	350	17	83	26	106	313	23	2761
	PM			16	160	272	266	423	156	137	449	79	28	859	103	2948
Existing Plus Regional Growth 2026	AM			15	599	279	190	830	350	17	88	26	106	329	23	2852
	PM			16	168	272	266	445	156	137	472	79	28	903	103	3045
Monocacy Land Company	AM	1673	665	177	107	60	126	53	10	9	133	9	19	10	132	845
Urbana Properties	PM	873	1766	199	147	134	77	16	10	12	127	24	6	54	210	1016
Landsdale	AM	118	357			14	46	131						43		234
	PM	359	210			45	26	76						131		278
Urbana Commons	AM	162	120			36	49					24	18			127
	PM	123	134			40	37					18	20			115
Knowledge Farms	AM	152	31		23						5	12	58			98
	PM	26	150		4						23	57	10			94
Urbana Village Center	AM	113	74		23				34					22	15	94
	PM	223	241		45				67					72	48	232
Sugarloaf Elementary School	AM	262	224	0	11	63	73	0	0	0	26	0	0	0	0	173
	PM	60	64	0	3	18	17	0	0	0	6	0	0	0	0	44
YMCA & Medical Office Bldg	AM	199	85	0	0	70	30	15	0	0	0	0	0	36	0	151
	PM	154	229	0	0	54	81	41	0	0	0	0	0	28	0	204
Subtotal All Pipeline	AM	2679	1556	177	164	243	324	199	44	9	164	45	95	111	147	1722
	PM	1818	2794	199	199	291	238	133	77	12	156	99	36	285	258	1983
Background Future 2026	AM			192	763	522	514	1029	394	26	252	71	201	440	170	4574
No-Build	PM			215	367	563	504	578	233	149	628	178	64	1188	361	5028
Knowledge Farms Property	AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Office Building	PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Knowledge Farms Property	AM	25	50	0	4	0	0	0	8	15	8	8	4	0	0	47
Senior Adult Housing	PM	54	35	0	8	0	0	0	16	11	5	5	8	0	0	53
Knowledge Farms Property	AM	94	27	0	14	0	0	0	28	8	4	4	14	0	0	72
Medical/Dental Office Bldg	PM	48	124	0	7	0	0	0	14	37	19	19	7	0	0	103
Knowledge Farms Property	AM	123	80	0	18	0	0	0	36	23	12	12	18	0	0	119
Total Site Traffic at Buildout	PM	108	165	0	15	0	0	0	30	48	24	24	15	0	0	156
Buildout Total Future	AM			192	781	522	514	1029	430	49	264	83	219	440	170	4693
	PM			215	382	563	504	578	263	197	652	202	79	1188	361	5184

03. MD 80 / Campus Drive																	
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total	
				Campus Drive			Fingerboard Rd (MD 80)			Campus Drive			Fingerboard Rd (MD 80)				
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL		
Pipeline Developments																	
Monocacy Land Company	AM & PM			Total Traffic Assignments for All Remaining Uses Calculated Based on Latest Approved TIS for this Pipeline Development													
Landsdale	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Urbana Commons	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Knowledge Farms	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Urbana Village Center	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Sugarloaf Elementary School	AM & PM	X		5%			23%						23% 5%				
	AM & PM		X														
Urbana YMCA Property	AM & PM			2%			30%			30% 2% 53%			53%				
Knowledge Farms Site Trips																	
Inbound Site Traffic	AM & PM	X		30%													
Outbound Site Traffic	AM & PM		X														30%

03. MD 80 / Campus Drive																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Campus Drive			Fingerboard Rd (MD 80)			Campus Drive			Fingerboard Rd (MD 80)			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing Peak Hour	AM			108	140	12	24	992	130	99	38	130	140	369	42	2224
Traffic Counts (2018)	PM			54	8	22	8	623	117	58	21	24	23	993	112	2063
Regional Growth (2021)	AM			0	0	0	0	30	0	0	0	0	0	11	0	41
Increase arterial flows at 1.0 % per year for 3 years	PM			0	0	0	0	19	0	0	0	0	0	30	0	49
% Growth								3.0%						3.0%		
Regional Growth (2026)	AM							82						31		113
Increase arterial flows at 1.0 % per year for 8 years	PM							52						82		134
% Growth								8.3%						8.3%		
Existing Plus Regional Growth 2021	AM			108	140	12	24	1022	130	99	38	130	140	380	42	2265
	PM			54	8	22	8	642	117	58	21	24	23	1023	112	2112
Existing Plus Regional Growth 2026	AM			108	140	12	24	1074	130	99	38	130	140	400	42	2337
	PM			54	8	22	8	675	117	58	21	24	23	1075	112	2197
Monocacy Land Company	AM	1673	665					189	3	5				79		276
Urbana Properties	PM	873	1766					103	6	4				200		313
Landsdale	AM	118	357					177						57		234
	PM	359	210					102						176		278
Urbana Commons	AM	162	120					49						36		85
	PM	123	134					37						40		77
Knowledge Farms	AM	152	31						15	3						18
	PM	26	150						3	15						18
Urbana Village Center	AM	113	74					34						22		56
	PM	223	241					67						72		139
Sugarloaf Elementary School	AM	262	224	13	0	0	0	60	0	0	0	0	0	52	11	136
	PM	60	64	3	0	0	0	14	0	0	0	0	0	15	3	35
YMCA & Medical Office Bldg	AM	199	85	0	4	0	0	0	60	26	1	45	106	0	0	242
	PM	154	229	0	3	0	0	0	47	69	5	121	82	0	0	327
Subtotal All Pipeline	AM	2679	1556	13	4	0	0	509	78	34	1	45	106	246	11	1047
	PM	1818	2794	3	3	0	0	323	56	88	5	121	82	503	3	1187
Background Future 2026 No-Build	AM			121	144	12	24	1583	208	133	39	175	246	646	53	3384
	PM			57	11	22	8	998	173	146	26	145	105	1578	115	3384
Knowledge Farms Property	AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Office Building	PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Knowledge Farms Property	AM	25	50	0	0	0	0	8	0	0	0	0	0	15	0	23
Senior Adult Housing	PM	54	35	0	0	0	0	16	0	0	0	0	0	11	0	27
Knowledge Farms Property	AM	94	27	0	0	0	0	28	0	0	0	0	0	8	0	36
Medical/Dental Office Bldg	PM	48	124	0	0	0	0	14	0	0	0	0	0	37	0	51
Knowledge Farms Property	AM	123	80	0	0	0	0	36	0	0	0	0	0	23	0	59
Total Site Traffic at Buildout	PM	108	165	0	0	0	0	30	0	0	0	0	0	48	0	78
Buildout Total Future	AM			121	144	12	24	1619	208	133	39	175	246	669	53	3443
	PM			57	11	22	8	1028	173	146	26	145	105	1626	115	3462

04. MD 355 / Urbana Pike																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Worthington Blvd (MD 355)			Plaza Driveway			Worthington Blvd (MD 355)			Urbana Pike			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Developments																
Monocacy Land Company	AM & PM			Total Traffic Assignments for All Remaining Uses Calculated Based on Latest Approved TIS for this Pipeline Development												
Landsdale	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies												
Urbana Commons	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies												
Knowledge Farms	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies												
Urbana Village Center	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies												
Sugarloaf Elementary School	AM & PM	X		5%						10%			5%			
	AM & PM		X													
Urbana YMCA Property	AM & PM															
Knowledge Farms Site Trips				60%						60%			30%			
Inbound Site Traffic	AM & PM	X														
Outbound Site Traffic	AM & PM		X													

04. MD 355 / Urbana Pike																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Worthington Blvd (MD 355)			Plaza Driveway			Worthington Blvd (MD 355)			Urbana Pike			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing Peak Hour	AM			17	860	12	5	1	2	3	68	97	254	2	9	1330
Traffic Counts (2018)	PM			32	178	75	51	20	9	13	579	268	120	16	16	1377
Regional Growth (2021)	AM			0	26	0	0	0	0	0	2	0	0	0	0	28
Increase arterial flows at 1.0 % per year for 3 years	PM			0	5	0	0	0	0	0	17	0	0	0	0	22
% Growth				3.0%						3.0%						
Regional Growth (2026)	AM			71						6						77
Increase arterial flows at 1.0 % per year for 8 years	PM			15						48						63
% Growth				8.3%						8.3%						
Existing Plus Regional Growth 2021	AM			17	886	12	5	1	2	3	70	97	254	2	9	1358
	PM			32	183	75	51	20	9	13	596	268	120	16	16	1399
Existing Plus Regional Growth 2026	AM			17	931	12	5	1	2	3	74	97	254	2	9	1407
	PM			32	193	75	51	20	9	13	627	268	120	16	16	1440
Monocacy Land Company	AM	1673	665	136						151 30			26			343
Urbana Properties	PM	873	1766	164						163 26			36			389
Landsdale	AM	118	357													0
	PM	359	210													0
Urbana Commons	AM	162	120	18						24						42
	PM	123	134	20						18						38
Knowledge Farms	AM	152	31	81						16 5			26			128
	PM	26	150	14						80 26			4			124
Urbana Village Center	AM	113	74							17			11			28
	PM	223	241							33			36			69
Sugarloaf Elementary School	AM	262	224	0	11	0	0	0	0	0	26	0	11	0	0	48
	PM	60	64	0	3	0	0	0	0	0	6	0	3	0	0	12
YMCA & Medical Office Bldg	AM	199	85	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	154	229	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal All Pipeline	AM	2679	1556	246 0			0 0 0			0 217 52			74 0 0			589
	PM	1818	2794	201 0			0 0 0			0 267 85			79 0 0			632
Background Future 2026	AM			17	1177	12	5	1	2	3	291	149	328	2	9	1996
No-Build	PM			32	394	75	51	20	9	13	894	353	199	16	16	2072
Knowledge Farms Property	AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Office Building	PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Knowledge Farms Property	AM	25	50	0	15	0	0	0	0	0	30	15	8	0	0	68
Senior Adult Housing	PM	54	35	0	32	0	0	0	0	0	21	11	16	0	0	80
Knowledge Farms Property	AM	94	27	0	56	0	0	0	0	0	16	8	28	0	0	108
Medical/Dental Office Bldg	PM	48	124	0	29	0	0	0	0	0	74	37	14	0	0	154
Knowledge Farms Property	AM	123	80	0	71	0	0	0	0	0	46	23	36	0	0	176
Total Site Traffic at Buildout	PM	108	165	0	61	0	0	0	0	0	95	48	30	0	0	234
Buildout Total Future	AM			17	1248	12	5	1	2	3	337	172	364	2	9	2172
	PM			32	455	75	51	20	9	13	989	401	229	16	16	2306

05. MD 355 / Sugarloaf Parkway																	
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total	
				Sugarloaf Parkway			Worthington Blvd			Sugarloaf Parkway			Worthington Blvd				
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL		
Pipeline Developments																	
Monocacy Land Company	AM & PM			Total Traffic Assignments for All Remaining Uses Calculated Based on Latest Approved TIS for this Pipeline Development													
Landsdale	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Urbana Commons	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Knowledge Farms	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Urbana Village Center	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Sugarloaf Elementary School	AM & PM	X		17%			38%						33%	17%			
	AM & PM		X														
Urbana YMCA Property	AM & PM				5%		5%	30%					30%				
Knowledge Farms Site Trips																	
Inbound Site Traffic	AM & PM	X											15%				
Outbound Site Traffic	AM & PM		X				15%										

05. MD 355 / Sugarloaf Parkway																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Sugarloaf Parkway			Worthington Blvd			Sugarloaf Parkway			Worthington Blvd			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing Peak Hour	AM			4	273	114	79	203	17	17	37	17	208	673	39	1681
Traffic Counts (2018)	PM			42	143	94	154	467	72	9	227	117	149	359	76	1909
Regional Growth (2021)	AM			0	0	0	0	6	0	0	0	0	0	20	0	26
Increase arterial flows at 1.0 % per year for 3 years	PM			0	0	0	0	14	0	0	0	0	0	11	0	25
% Growth								3.0%						3.0%		
Regional Growth (2026)	AM							17						56		73
Increase arterial flows at 1.0 % per year for 8 years	PM							39						30		69
% Growth								8.3%						8.3%		
Existing Plus Regional Growth 2021	AM			4	273	114	79	209	17	17	37	17	208	693	39	1707
	PM			42	143	94	154	481	72	9	227	117	149	370	76	1934
Existing Plus Regional Growth 2026	AM			4	273	114	79	220	17	17	37	17	208	729	39	1754
	PM			42	143	94	154	506	72	9	227	117	149	389	76	1978
Monocacy Land Company	AM	1673	665			173		391					50	345	0	959
Urbana Properties	PM	873	1766			64		414					148	481	0	1107
Landsdale	AM	118	357					46						14		60
	PM	359	210					26						45		71
Urbana Commons	AM	162	120					24						32		56
	PM	123	134					27						25		52
Knowledge Farms	AM	152	31					5						23		28
	PM	26	150					23						4		27
Urbana Village Center	AM	113	74					15						23		38
	PM	223	241					48						45		93
Sugarloaf Elementary School	AM	262	224	45				100						86	45	276
	PM	60	64	10				23						20	10	63
YMCA & Medical Office Bldg	AM	199	85	0	0	10	4	26	0	0	0	0	0	60	0	100
	PM	154	229	0	0	8	12	69	0	0	0	0	0	46	0	135
Subtotal All Pipeline	AM	2679	1556	45	0	183	4	607	0	0	0	0	50	583	45	1517
	PM	1818	2794	10	0	72	12	630	0	0	0	0	148	666	10	1548
Background Future 2026 No-Build	AM			49	273	297	83	827	17	17	37	17	258	1312	84	3271
	PM			52	143	166	166	1136	72	9	227	117	297	1055	86	3526
Knowledge Farms Property	AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Office Building	PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Knowledge Farms Property	AM	25	50	0	0	0	0	8	0	0	0	0	0	4	0	12
Senior Adult Housing	PM	54	35	0	0	0	0	5	0	0	0	0	0	8	0	13
Knowledge Farms Property	AM	94	27	0	0	0	0	4	0	0	0	0	0	14	0	18
Medical/Dental Office Bldg	PM	48	124	0	0	0	0	19	0	0	0	0	0	7	0	26
Knowledge Farms Property	AM	123	80	0	0	0	0	12	0	0	0	0	0	18	0	30
Total Site Traffic at Buildout	PM	108	165	0	0	0	0	24	0	0	0	0	0	15	0	39
Buildout Total Future	AM			49	273	297	83	839	17	17	37	17	258	1330	84	3301
	PM			52	143	166	166	1160	72	9	227	117	297	1070	86	3565

06. MD 80 / Sugarloaf Parkway																	
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total	
				Sugarloaf Parkway			Fingerboard Rd (MD 80)			Sugarloaf Parkway			Fingerboard Rd (MD 80)				
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL		
Pipeline Developments																	
Monocacy Land Company	AM & PM	X	X	Total Traffic Assignments for All Remaining Uses Calculated Based on Latest Approved TIS for this Pipeline Development													
Landsdale	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Urbana Commons	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Knowledge Farms	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Urbana Village Center	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Sugarloaf Elementary School	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
	AM & PM			10%									10%				
Urbana YMCA Property	AM & PM						10% 5%			5%			10%				
Knowledge Farms Site Trips	AM & PM	X	X										45%				
Inbound Site Traffic	AM & PM						45%										
Outbound Site Traffic	AM & PM																

06. MD 80 / Sugarloaf Parkway																	
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total	
				Sugarloaf Parkway			Fingerboard Rd (MD 80)			Sugarloaf Parkway			Fingerboard Rd (MD 80)				
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL		
Existing Peak Hour	AM			280	23	8	6	709	44	4	13	31	19	499	96	1732	
Traffic Counts (2018)	PM			120	11	13	10	416	30	37	46	89	4	738	344	1858	
Regional Growth (2021)	AM			0	0	0	0	21	0	0	0	0	0	15	0	36	
Increase arterial flows at 1.0 % per year for 3 years	PM			0	0	0	0	12	0	0	0	0	0	22	0	34	
% Growth							3.0%						3.0%				
Regional Growth (2026)	AM						59						41			100	
Increase arterial flows at 1.0 % per year for 8 years	PM						35						61			96	
% Growth							8.3%						8.3%				
Existing Plus Regional Growth 2021	AM			280	23	8	6	730	44	4	13	31	19	514	96	1768	
	PM			120	11	13	10	428	30	37	46	89	4	760	344	1892	
Existing Plus Regional Growth 2026	AM			280	23	8	6	768	44	4	13	31	19	540	96	1832	
	PM			120	11	13	10	451	30	37	46	89	4	799	344	1954	
Monocacy Land Company	AM	1673	665	88			220 23			5			30	138	178	344	1026
Urbana Properties	PM	873	1766	326			251 7			24			156	45	258	112	1179
Landsdale	AM	118	357				131							43		174	
	PM	359	210				76							131		207	
Urbana Commons	AM	162	120				42							57		99	
	PM	123	134				47							43		90	
Knowledge Farms	AM	152	31				17							84		101	
	PM	26	150				83							14		97	
Urbana Village Center	AM	113	74				26							40		66	
	PM	223	241				84							78		162	
Sugarloaf Elementary School	AM	262	224	22										26		48	
	PM	60	64	6										6		12	
YMCA & Medical Office Bldg	AM	199	85	0	0	0	0	8	4	10	0	0	0	20	0	42	
	PM	154	229	0	0	0	0	23	12	8	0	0	0	16	0	59	
Subtotal All Pipeline	AM	2679	1556	110	0	0	0	444	27	15	0	30	138	422	370	1556	
	PM	1818	2794	332	0	0	0	564	19	32	0	156	45	540	118	1806	
Background Future 2026	AM			390	23	8	6	1212	71	19	13	61	157	962	466	3388	
No-Build	PM			452	11	13	10	1015	49	69	46	245	49	1339	462	3760	
Knowledge Farms Property	AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Existing Office Building	PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Knowledge Farms Property	AM	25	50	0	0	0	0	23	0	0	0	0	0	11	0	34	
Senior Adult Housing	PM	54	35	0	0	0	0	16	0	0	0	0	0	24	0	40	
Knowledge Farms Property	AM	94	27	0	0	0	0	12	0	0	0	0	0	42	0	54	
Medical/Dental Office Bldg	PM	48	124	0	0	0	0	56	0	0	0	0	0	22	0	78	
Knowledge Farms Property	AM	123	80	0	0	0	0	35	0	0	0	0	0	53	0	88	
Total Site Traffic at Buildout	PM	108	165	0	0	0	0	72	0	0	0	0	0	46	0	118	
Buildout Total Future	AM			390	23	8	6	1247	71	19	13	61	157	1015	466	3476	
	PM			452	11	13	10	1087	49	69	46	245	49	1385	462	3878	

07. MD 355 / Campus Drive																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Urbana Pike			Campus Drive			Urbana Pike			Thornapple Drive			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Pipeline Developments																
Monocacy Land Company	AM & PM			Total Traffic Assignments for All Remaining Uses Calculated Based on Latest Approved TIS for this Pipeline Development												
Landsdale	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies												
Urbana Commons	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies												
Knowledge Farms	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies												
Urbana Village Center	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies												
Sugarloaf Elementary School	AM & PM	X		10%			5% 10%			10%			5%			
Urbana YMCA Property	AM & PM		X													
Knowledge Farms Site Trips	AM & PM															
Inbound Site Traffic	AM & PM	X		90%						10%			10%			
Outbound Site Traffic	AM & PM		X													

07. MD 355 / Campus Drive																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Urbana Pike			Campus Drive			Urbana Pike			Thornapple Drive			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing Peak Hour	AM			27	790	318	102	1	11	184	138	1	0	0	3	1575
Traffic Counts (2018)	PM			11	285	46	47	0	19	39	835	6	7	3	42	1340
Regional Growth (2021)	AM			0	24	0	0	0	0	0	4	0	0	0	0	28
Increase arterial flows at 1.0 % per year for 3 years	PM			0	9	0	0	0	0	0	25	0	0	0	0	34
% Growth				3.0%						3.0%						
Regional Growth (2026)	AM			66						11						77
Increase arterial flows at 1.0 % per year for 8 years	PM			24						69						93
% Growth				8.3%						8.3%						
Existing Plus Regional Growth 2021	AM			27	814	318	102	1	11	184	142	1	0	0	3	1603
	PM			11	294	46	47	0	19	39	860	6	7	3	42	1374
Existing Plus Regional Growth 2026	AM			27	856	318	102	1	11	184	149	1			3	1652
	PM			11	309	46	47		19	39	904	6	7	3	42	1433
Monocacy Land Company	AM	1673	665	11	87			3			254	5	11	5	22	398
Urbana Properties	PM	873	1766	23	263			6			116	11	8	4	17	448
Landsdale	AM	118	357													0
	PM	359	210													0
Urbana Commons	AM	162	120													0
	PM	123	134													0
Knowledge Farms	AM	152	31					15						3		18
	PM	26	150					3						15		18
Urbana Village Center	AM	113	74													0
	PM	223	241													0
Sugarloaf Elementary School	AM	262	224		22						26					48
	PM	60	64		6						6					12
YMCA & Medical Office Bldg	AM	199	85	0	0	0	0	4	8	20	0	0	0	10	0	42
	PM	154	229	0	0	0	0	12	23	16	0	0	0	8	0	59
Subtotal All Pipeline	AM	2679	1556	11	109	0	0	22	8	20	280	5	11	18	22	506
	PM	1818	2794	23	269	0	0	21	23	16	122	11	8	27	17	537
Background Future 2026	AM			38	965	318	102	23	19	204	429	6	11	18	25	2158
No-Build	PM			34	578	46	47	21	42	55	1026	17	15	30	59	1970
Knowledge Farms Property	AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Office Building	PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Knowledge Farms Property	AM	25	50	23	0	0	0	0	0	0	0	3	5	0	45	76
Senior Adult Housing	PM	54	35	49	0	0	0	0	0	0	0	5	4	0	32	90
Knowledge Farms Property	AM	94	27	85	0	0	0	0	0	0	0	9	3	0	24	121
Medical/Dental Office Bldg	PM	48	124	43	0	0	0	0	0	0	0	5	12	0	112	172
Knowledge Farms Property	AM	123	80	108	0	0	0	0	0	0	0	12	8	0	69	197
Total Site Traffic at Buildout	PM	108	165	92	0	0	0	0	0	0	0	10	16	0	144	262
Buildout Total Future	AM			146	965	318	102	23	19	204	429	18	19	18	94	2355
	PM			126	578	46	47	21	42	55	1026	27	31	30	203	2232

08. MD 80 / I-270 NB Ramps																	
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total	
				I-270 NB Ramps			MD 80			Entrance to Park & Ride			MD 80				
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL		
Pipeline Developments																	
Monocacy Land Company	AM & PM			Total Traffic Assignments for All Remaining Uses Calculated Based on Latest Approved TIS for this Pipeline Development													
Landsdale	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Urbana Commons	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Knowledge Farms	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Urbana Village Center	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Sugarloaf Elementary School	AM & PM	X															
	AM & PM		X														
Urbana YMCA Property	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Knowledge Farms Site Trips																	
Inbound Site Traffic	AM & PM	X													45%		
Outbound Site Traffic	AM & PM		X							45%							

08. MD 80 / I-270 NB Ramps																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				I-270 NB Ramps			MD 80			Entrance to Park & Ride			MD 80			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing Peak Hour	AM			42	1	197	500	464	3	1	1	0	0	422	106	1737
Traffic Counts (2018)	PM			60	27	499	442	515	14	69	37	4	5	672	59	2403
Regional Growth (2021)	AM			0	0	0	0	14	0	0	0	0	0	13	0	27
Increase arterial flows at 1.0 % per year for 3 years	PM			0	0	0	0	15	0	0	0	0	0	20	0	35
% Growth								3.0%						3.0%		
Regional Growth (2026)	AM							39						35		74
Increase arterial flows at 1.0 % per year for 8 years	PM							43						56		99
% Growth								8.3%						8.3%		
Existing Plus Regional Growth 2021	AM			42	1	197	500	478	3	1	1	0	0	435	106	1764
	PM			60	27	499	442	530	14	69	37	4	5	692	59	2438
Existing Plus Regional Growth 2026	AM			42	1	197	500	503	3	1	1			457	106	1811
	PM			60	27	499	442	558	14	69	37	4	5	728	59	2502
Monocacy Land Company	AM	1673	665			165	253	85						312		815
Urbana Properties	PM	873	1766			104	550	183						495		1332
Landsdale	AM	118	357			11	33	98						98		240
	PM	359	210			33	19	57						32		141
Urbana Commons	AM	162	120					42						43		85
	PM	123	134					47						57		104
Knowledge Farms	AM	152	31	5			2	2						2		11
	PM	26	150	1			9	7						18		35
Urbana Village Center	AM	113	74					26						75		101
	PM	223	241					84						40		124
Sugarloaf Elementary School	AM	262	224					22						6		28
	PM	60	64					6						26		32
YMCA & Medical Office Bldg	AM	199	85					8						20		28
	PM	154	229					23						16		39
Subtotal All Pipeline	AM	2679	1556	5	0	176	288	283	0	0	0	0	0	556	0	1308
	PM	1818	2794	1	0	137	578	407	0	0	0	0	0	684	0	1807
Background Future 2026	AM			47	1	373	788	786	3	1	1			1013	106	3119
No-Build	PM			61	27	636	1020	965	14	69	37	4	5	1412	59	4309
Knowledge Farms Property	AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Office Building	PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Knowledge Farms Property	AM	25	50	0	0	0	0	23	0	0	0	0	0	11	0	34
Senior Adult Housing	PM	54	35	0	0	0	0	16	0	0	0	0	0	24	0	40
Knowledge Farms Property	AM	94	27	0	0	0	0	12	0	0	0	0	0	42	0	54
Medical/Dental Office Bldg	PM	48	124	0	0	0	0	56	0	0	0	0	0	22	0	78
Knowledge Farms Property	AM	123	80	0	0	0	0	35	0	0	0	0	0	53	0	88
Total Site Traffic at Buildout	PM	108	165	0	0	0	0	72	0	0	0	0	0	46	0	118
Buildout Total Future	AM			47	1	373	788	821	3	1	1	0	0	1066	106	3207
	PM			61	27	636	1020	1037	14	69	37	4	5	1458	59	4427

09. MD 355 / Urbana Parkway																	
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total	
				Worthington Boulevard			No Road			Worthington Boulevard			Urbana Parkway				
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL		
Pipeline Developments																	
Monocacy Land Company	AM & PM			Total Traffic Assignments for All Remaining Uses Calculated Based on Latest Approved TIS for this Pipeline Development													
Landsdale	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Urbana Commons	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Knowledge Farms	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Urbana Village Center	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Sugarloaf Elementary School	AM & PM	X															
	AM & PM		X														
Urbana YMCA Property	AM & PM			Total Traffic Assignment Taken from Other Approved Traffic Studies													
Knowledge Farms Site Trips																	
Inbound Site Traffic	AM & PM	X															90%
Outbound Site Traffic	AM & PM		X	90%						90%							

09. MD 355 / Urbana Parkway																
Component	Period	IN	OUT	Southbound			Westbound			Northbound			Eastbound			Total
				Worthington Boulevard			No Road			Worthington Boulevard			Urbana Parkway			
				SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	
Existing Peak Hour	AM			18	997	0	0	0	0	0	372	23	45	0	2	1457
Traffic Counts (2021)	PM			36	330	0	0	0	0	0	739	38	24	0	34	1201
Regional Growth (2021)	AM			0	0	0	0	0	0	0	0	0	0	0	0	0
Increase arterial flows at 1.0 % per year for 0 years	PM			0	0	0	0	0	0	0	0	0	0	0	0	0
% Growth							0.0%						0.0%			
Regional Growth (2026)	AM				51						19					70
Increase arterial flows at 1.0 % per year for 5 years	PM				17						38					55
% Growth					5.1%						5.1%					
Existing Plus Regional Growth 2021	AM			18	997	0	0	0	0	0	372	23	45	0	2	1457
	PM			36	330	0	0	0	0	0	739	38	24	0	34	1201
Existing Plus Regional Growth 2026	AM			18	1048						391	23	45		2	1527
	PM			36	347						777	38	24		34	1256
Monocacy Land Company	AM	1673	665		162						181					343
Urbana Properties	PM	873	1766		200						189					389
Landsdale	AM	118	357													0
	PM	359	210													0
Urbana Commons	AM	162	120		18						24					42
	PM	123	134		20						18					38
Knowledge Farms	AM	152	31		107						21					128
	PM	26	150		18						106					124
Urbana Village Center	AM	113	74		11						17					28
	PM	223	241		36						33					69
Sugarloaf Elementary School	AM	262	224		22						26					48
	PM	60	64		6						6					12
YMCA & Medical Office Bldg	AM	199	85													0
	PM	154	229													0
Subtotal All Pipeline	AM	2679	1556		320	0	0	0	0	0	269	0	0	0	0	589
	PM	1818	2794		280	0	0	0	0	0	352	0	0	0	0	632
Background Future 2026	AM			18	1368						660	23	45		2	2116
No-Build	PM			36	627						1129	38	24		34	1888
Knowledge Farms Property	AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Office Building	PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Knowledge Farms Property	AM	25	50	0	45	0	0	0	0	0	23	0	0	0	0	68
Senior Adult Housing	PM	54	35	0	32	0	0	0	0	0	49	0	0	0	0	81
Knowledge Farms Property	AM	94	27	0	24	0	0	0	0	0	85	0	0	0	0	109
Medical/Dental Office Bldg	PM	48	124	0	112	0	0	0	0	0	43	0	0	0	0	155
Knowledge Farms Property	AM	123	80	0	69	0	0	0	0	0	108	0	0	0	0	177
Total Site Traffic at Buildout	PM	108	165	0	144	0	0	0	0	0	92	0	0	0	0	236
Buildout Total Future	AM			18	1437	0	0	0	0	0	768	23	45	0	2	2293
	PM			36	771	0	0	0	0	0	1221	38	24	0	34	2124

APPENDIX I

PEAK HOUR SIGNAL WARRANT

Condition: Total Future With Proposed Change In Use				Speed Limit
7. MD 355 (Worthington Boulevard)/Campus Drive/Thornapple Drive				<40mph
Criteria	Peak Period	Primary Roadway	Minor Approach	Warrant Component
		MD 355 (Worthington Boulevard) Two-Lane Approaches Both Directions	Campus Drive/Thornapple Drive One-Lane Approaches Both Directions	Met (Yes/No)
Part 1A. Minor Approach w/ Greater than 4.0 veh-hrs of delay (AM or PM)	AM	n/a	0.07 veh-hrs / 0.58 veh-hrs	No/No
	PM	n/a	0.94 veh-hrs / 0.48 veh-hrs	No/No
Part 1B. Minor Approach Volume Exceeds 100 VPH	AM	n/a	3 veh/hr / 114 veh/hr	No/Yes
	PM	n/a	52 veh/hr / 66 veh/hr	No/Yes
Part 1C. Total Intersection Volume > 800 VPH	AM	1603		No
	PM	1374		Yes
Part 1: 1A, 1B, & 1C Met				No
Part 2. Peak Hour Volumes	AM EB	1486	3	
	AM WB	1486	114	
	PM EB	1256	52	
	PM WB	1256	66	
Number of Lanes ⁽¹⁾		Two Lane	One Lane	

Figure 4C-3. Warrant 3, Peak Hour

MINOR STREET HIGHER-VOLUME APPROACH - VPH

MAJOR STREET—TOTAL OF BOTH APPROACHES—VEHICLES PER HOUR (VPH)

2 OR MORE LANES & 2 OR MORE LANES

2 OR MORE LANES & 1 LANE

1 LANE & 1 LANE

150*

100*

AM EB

PM EB

AM WB

PM WB

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

Peak Hour Delay Warrant Summary	AM	Part 1: NOT MET, Part 2: NOT MET	Peak Hour Warrant(s) NOT MET
	PM	Part 1: NOT MET, Part 2: NOT MET	