ATTACHMENTS

- Traffic Volume Data
- Seasonal Data
- Trip Generation
- Trip Distribution Calculations
- Capacity Analysis

□ Traffic Volume Data

MDM TRANSPORTATION CONSULTANTS, INC.

28 Lord Road, Suite 280
Marlborough, MA
www.mdmtrans.com

Parker Street
South of Site Drivewat
Newburyport, MA

Start Time	14-Feb-19 Thu	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		7	59			7	106				
12:15		1	86			6	69				
12:30		1	63			3	62				
12:45		0	63	9	271	3	56	19	293	28	564
01:00		1	70			3	82				
01:15		1	68			1	79				
01:30		3	69			1	84				
01:45		2	70	7	277	4	65	9	310	16	587
02:00		0	59			0	84				
02:15		2	60			1	82				
02:30		0	87			3	77				
02:45		1	66	3	272	1	73	5	316	8	588
03:00		7	89			2	84				
03:15		6	81			1	80				
03:30		2	107			1	106				
03:45		5	89	20	366	6	110	10	380	30	746
04:00		4	108			5	103				
04:15		9	81			2	87				
04:30		9	100			7	100				
04:45		15	75	37	364	5	107	19	397	56	761
05:00		20	96			9	97				
05:15		43	101			8	112				
05:30		52	82			13	122				
05:45		48	93	163	372	23	104	53	435	216	807
06:00		45	64			23	111				
06:15		70	49			27	98				
06:30		72	45			38	88				
06:45		104	49	291	207	60	83	148	380	439	587
07:00		89	49			45	79				
07:15		92	43			65	65				
07:30		104	37			67	65				
07:45		86	28	371	157	95	51	272	260	643	417
08:00		93	26			101	25				
08:15		113	37			101	30				
08:30		84	32			91	30				
08:45		60	30	350	125	79	32	372	117	722	242
09:00		69	34			76	17				
09:15		60	23			59	29				
09:30		70	20			60	22				
09:45		70	14	269	91	73	23	268	91	537	182
10:00		58	13			50	18				
10:15		65	23			51	16				
10:30		51	12			64	10				
10:45		53	9	227	57	62	4	227	48	454	105
11:00		65	5			54	13				
11:15		77	8			39	6				
11:30		65	4			75	7				
11:45		69	5	276	22	87	4	255	30	531	52
Total		2023	2581			1657	3057			3680	5638
Percent		43.9%	56.1%			35.2%	64.8%			39.5%	60.5%
Combined Total		4604				4714				9318	

MDM TRANSPORTATION CONSULTANTS, INC.

Parker Street
South of Site Drivewat
Newburyport, MA

28 Lord Road, Suite 280
Marlborough, MA
www.mdmtrans.com

Start Time	16-Feb-19 Sat	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		5	49			8	92				
12:15		8	66			12	70				
12:30		5	68			5	76				
12:45		4	53	22	236	7	72	32	310	54	546
01:00		2	47			0	64				
01:15		0	52			2	70				
01:30		1	45			4	58				
01:45		2	64	5	208	2	82	8	274	13	482
02:00		2	50			3	70				
02:15		1	57			1	74				
02:30		1	60			2	74				
02:45		2	52	6	219	3	68	9	286	15	505
03:00		2	70			3	60				
03:15		2	61			0	65				
03:30		2	47			1	66				
03:45		1	53	7	231	2	55	6	246	13	477
04:00		2	87			3	56				
04:15		3	37			1	62				
04:30		5	52			3	62				
04:45		4	45	14	221	0	64	7	244	21	465
05:00		7	45			4	41				
05:15		4	48			5	50				
05:30		13	38			7	48				
05:45		5	61	29	192	9	47	25	186	54	378
06:00		15	33			9	45				
06:15		18	35			10	51				
06:30		17	33			7	46				
06:45		18	30	68	131	18	46	44	188	112	319
07:00		14	36			19	47				
07:15		22	29			19	33				
07:30		12	29			22	27				
07:45		27	28	75	122	37	35	97	142	172	264
08:00		28	28			35	24				
08:15		34	20			26	23				
08:30		39	24			37	25				
08:45		28	18	129	90	41	21	139	93	268	183
09:00		34	23			59	20				
09:15		45	14			50	7				
09:30		44	19			39	20				
09:45		40	15	163	71	46	17	194	64	357	135
10:00		49	30			50	20				
10:15		50	29			52	14				
10:30		63	23			53	19				
10:45		50	17	212	99	44	10	199	63	411	162
11:00		43	11			77	12				
11:15		61	17			56	14				
11:30		53	15			63	5				
11:45		47	3	204	46	72	13	268	44	472	90
Total		934	1866			1028	2140			1962	4006
Percent		33.4%	66.6%			32.4%	67.6%			32.9%	67.1%
Combined Total		2800				3168				5968	

MDM Transportation Consultants, Inc.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Parker Street/ Graf Road
E/W: Parker Street/Mulliken Way
Newburyport, MA

File Name : 977 Parker at Graf
Site Code : 977
Start Date : 2/14/2019
Page No : 1

Groups Printed- Lights - Mediums - Articulated Trucks

	Graf Road From North					Parker Street From East					Parker Street From South					Mulliken Way From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	11	43	12	0	66	3	7	49	0	59	15	28	5	0	48	0	5	2	0	7	180
07:15 AM	8	55	19	0	82	8	8	49	0	65	32	28	3	0	63	2	7	3	0	12	222
07:30 AM	12	52	23	0	87	6	20	48	0	74	27	36	10	0	73	2	3	2	0	7	241
07:45 AM	14	35	26	0	75	17	17	53	0	87	41	50	0	0	91	1	12	3	0	16	269
Total	45	185	80	0	310	34	52	199	0	285	115	142	18	0	275	5	27	10	0	42	912
08:00 AM	8	59	15	0	82	14	14	49	0	77	40	64	3	0	107	1	12	3	0	16	282
08:15 AM	7	59	22	0	88	10	6	45	0	61	39	54	6	0	99	5	4	7	0	16	264
08:30 AM	3	42	18	0	63	9	6	34	0	49	37	43	3	0	83	0	5	0	0	5	200
08:45 AM	3	37	15	0	55	6	9	32	0	47	39	54	2	0	95	0	5	2	0	7	204
Total	21	197	70	0	288	39	35	160	0	234	155	215	14	0	384	6	26	12	0	44	950
04:00 PM	11	56	19	0	86	14	6	40	0	60	35	53	2	0	90	18	11	14	0	43	279
04:15 PM	4	48	24	0	76	16	6	39	0	61	35	62	0	0	97	3	10	6	0	19	253
04:30 PM	2	44	19	0	65	16	8	43	0	67	42	66	2	0	110	5	11	8	0	24	266
04:45 PM	2	39	9	0	50	9	8	32	0	49	38	65	0	0	103	5	7	5	0	17	219
Total	19	187	71	0	277	55	28	154	0	237	150	246	4	0	400	31	39	33	0	103	1017
05:00 PM	0	72	19	0	91	16	8	38	0	62	52	57	0	0	109	3	18	8	0	29	291
05:15 PM	4	62	18	0	84	4	4	21	0	29	48	70	2	0	120	1	15	6	0	22	255
05:30 PM	2	60	34	0	96	34	29	38	0	101	43	64	2	0	109	1	13	5	0	19	325
05:45 PM	1	55	14	0	70	3	6	19	0	28	37	75	1	0	113	0	7	1	0	8	219
Total	7	249	85	0	341	57	47	116	0	220	180	266	5	0	451	5	53	20	0	78	1090
11:00 AM	0	35	9	0	44	13	6	22	0	41	14	39	1	0	54	3	6	6	0	15	154
11:15 AM	1	34	16	0	51	10	4	23	0	37	20	42	0	0	62	0	4	2	0	6	156
11:30 AM	0	31	7	0	38	11	6	25	0	42	21	39	2	0	62	0	5	2	0	7	149
11:45 AM	3	24	15	0	42	4	3	15	0	22	29	57	0	0	86	0	1	1	0	2	152
Total	4	124	47	0	175	38	19	85	0	142	84	177	3	0	264	3	16	11	0	30	611
12:00 PM	0	31	12	0	43	6	4	30	0	40	26	53	1	0	80	2	5	1	0	8	171
12:15 PM	0	27	10	0	37	12	6	41	0	59	28	46	2	0	76	1	2	1	0	4	176
12:30 PM	1	31	17	0	49	9	2	34	0	45	30	50	1	0	81	1	6	0	0	7	182
12:45 PM	1	23	18	0	42	9	1	20	0	30	28	44	0	0	72	0	2	0	0	2	146
Total	2	112	57	0	171	36	13	125	0	174	112	193	4	0	309	4	15	2	0	21	675
01:00 PM	0	36	9	0	45	3	1	20	0	24	21	38	0	0	59	1	6	0	0	7	135
01:15 PM	2	24	6	0	32	5	5	20	0	30	28	37	0	0	65	0	2	2	0	4	131
01:30 PM	3	36	11	0	50	6	6	20	0	32	26	48	0	0	74	0	6	1	0	7	163
01:45 PM	0	43	12	0	55	11	2	19	0	32	25	57	0	0	82	1	2	0	0	3	172
Total	5	139	38	0	182	25	14	79	0	118	100	180	0	0	280	2	16	3	0	21	601
Grand Total	103	1193	448	0	1744	284	208	918	0	1410	896	1419	48	0	2363	56	192	91	0	339	5856
Apprch %	5.9	68.4	25.7	0		20.1	14.8	65.1	0		37.9	60.1	2	0		16.5	56.6	26.8	0		
Total %	1.8	20.4	7.7	0	29.8	4.8	3.6	15.7	0	24.1	15.3	24.2	0.8	0	40.4	1	3.3	1.6	0	5.8	
Lights	96	1154	425	0	1675	265	203	899	0	1367	872	1385	43	0	2300	53	191	87	0	331	5673
% Lights	93.2	96.7	94.9	0	96	93.3	97.6	97.9	0	97	97.3	97.6	89.6	0	97.3	94.6	99.5	95.6	0	97.6	96.9
Mediums	7	32	23	0	62	18	5	18	0	41	16	22	4	0	42	2	0	3	0	5	150
% Mediums	6.8	2.7	5.1	0	3.6	6.3	2.4	2	0	2.9	1.8	1.6	8.3	0	1.8	3.6	0	3.3	0	1.5	2.6
Articulated Trucks	0	7	0	0	7	1	0	1	0	2	8	12	1	0	21	1	1	1	0	3	33
% Articulated Trucks	0	0.6	0	0	0.4	0.4	0	0.1	0	0.1	0.9	0.8	2.1	0	0.9	1.8	0.5	1.1	0	0.9	0.6

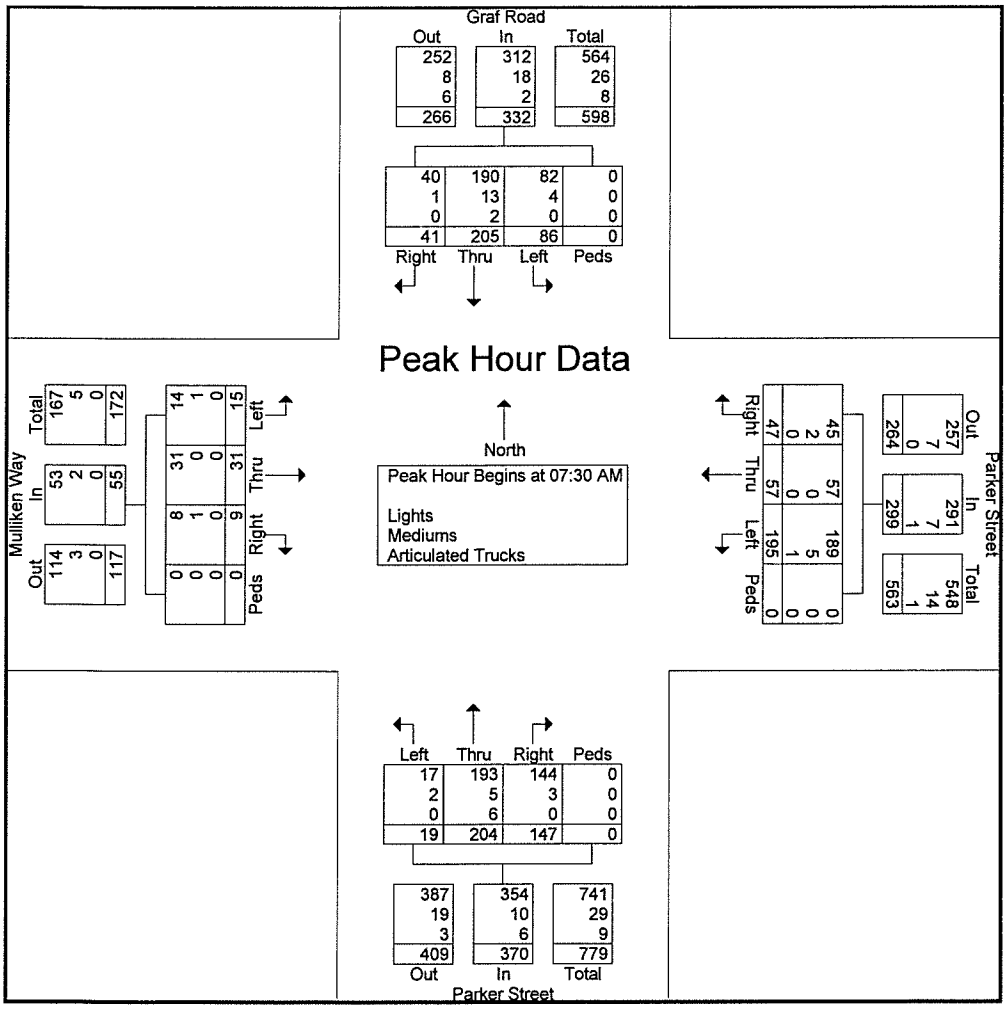
MDM Transportation Consultants, Inc.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Parker Street/ Graf Road
E/W: Parker Street/Mulliken Way
Newburyport, MA

File Name : 977 Parker at Graf
Site Code : 977
Start Date : 2/14/2019
Page No : 2

	Graf Road From North					Parker Street From East					Parker Street From South					Mulliken Way From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	12	52	23	0	87	6	20	48	0	74	27	36	10	0	73	2	3	2	0	7	241
07:45 AM	14	35	26	0	75	17	17	53	0	87	41	50	0	0	91	1	12	3	0	16	269
08:00 AM	8	59	15	0	82	14	14	49	0	77	40	64	3	0	107	1	12	3	0	16	282
08:15 AM	7	59	22	0	88	10	6	45	0	61	39	54	6	0	99	5	4	7	0	16	264
Total Volume	41	205	86	0	332	47	57	195	0	299	147	204	19	0	370	9	31	15	0	55	1056
% App. Total	12.3	61.7	25.9	0		15.7	19.1	65.2	0		39.7	55.1	5.1	0		16.4	56.4	27.3	0		
PHF	.732	.869	.827	.000	.943	.691	.713	.920	.000	.859	.896	.797	.475	.000	.864	.450	.646	.536	.000	.859	.936
Lights	40	190	82	0	312	45	57	189	0	291	144	193	17	0	354	8	31	14	0	53	1010
% Lights	97.6	92.7	95.3	0	94.0	95.7	100	96.9	0	97.3	98.0	94.6	89.5	0	95.7	88.9	100	93.3	0	96.4	95.6
Mediums	1	13	4	0	18	2	0	5	0	7	3	5	2	0	10	1	0	1	0	2	37
% Mediums																					
Articulated Trucks	0	2	0	0	2	0	0	1	0	1	0	6	0	0	6	0	0	0	0	0	9
% Articulated Trucks	0	1.0	0	0	0.6	0	0	0.5	0	0.3	0	2.9	0	0	1.6	0	0	0	0	0	0.9



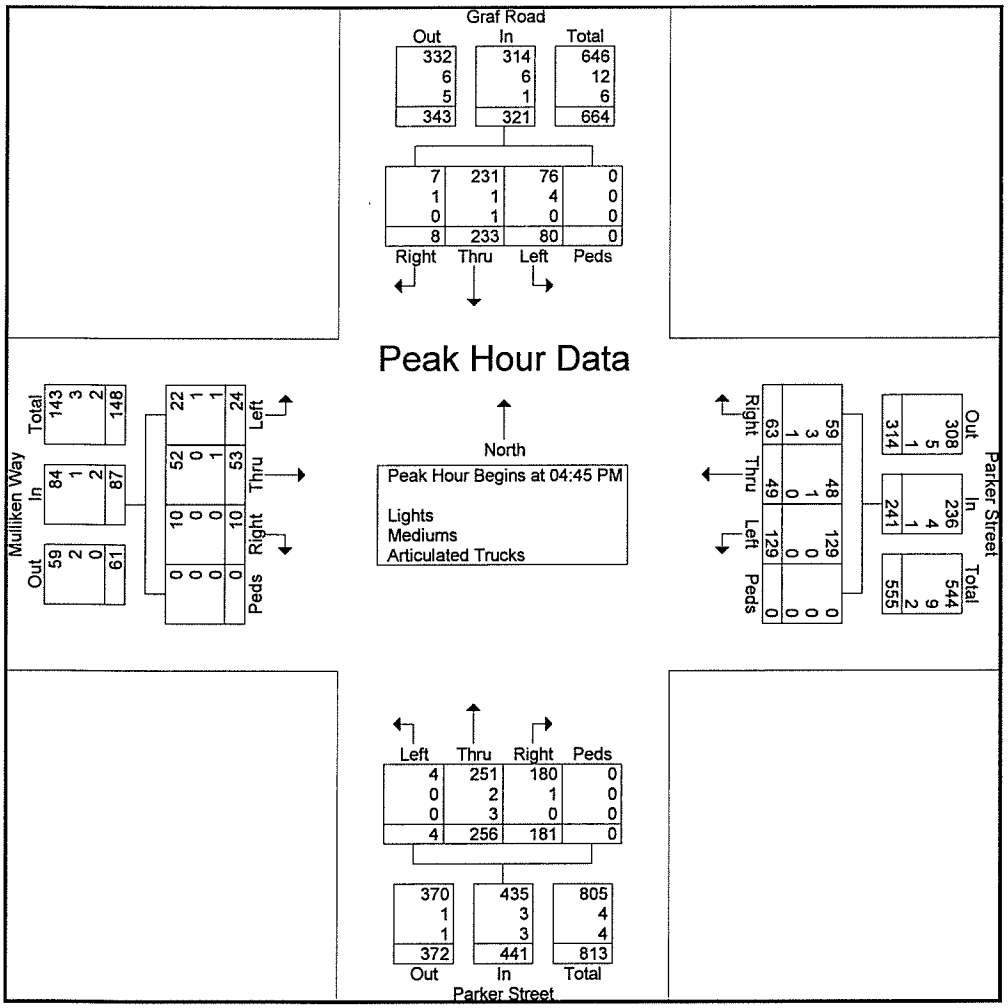
MDM Transportation Consultants, Inc.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Parker Street/ Graf Road
E/W: Parker Street/Mulliken Way
Newburyport, MA

File Name : 977 Parker at Graf
Site Code : 977
Start Date : 2/14/2019
Page No : 3

	Graf Road From North					Parker Street From East					Parker Street From South					Mulliken Way From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 11:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	2	39	9	0	50	9	8	32	0	49	38	65	0	0	103	5	7	5	0	17	219
05:00 PM	0	72	19	0	91	16	8	38	0	62	52	57	0	0	109	3	18	8	0	29	291
05:15 PM	4	62	18	0	84	4	4	21	0	29	48	70	2	0	120	1	15	6	0	22	255
05:30 PM	2	60	34	0	96	34	29	38	0	101	43	64	2	0	109	1	13	5	0	19	325
Total Volume	8	233	80	0	321	63	49	129	0	241	181	256	4	0	441	10	53	24	0	87	1090
% App. Total	2.5	72.6	24.9	0		26.1	20.3	53.5	0		41	58	0.9	0		11.5	60.9	27.6	0		
PHF	.500	.809	.588	.000	.836	.463	.422	.849	.000	.597	.870	.914	.500	.000	.919	.500	.736	.750	.000	.750	.838
Lights	7	231	76	0	314	59	48	129	0	236	180	251	4	0	435	10	52	22	0	84	1069
% Lights	87.5	99.1	95.0	0	97.8	93.7	98.0	100	0	97.9	99.4	98.0	100	0	98.6	100	98.1	91.7	0	96.6	98.1
Mediums	1	1	4	0	6	3	1	0	0	4	1	2	0	0	3	0	0	1	0	1	14
% Mediums																					
Articulated Trucks	0	1	0	0	1	1	0	0	0	1	0	3	0	0	3	0	1	1	0	2	7
% Articulated Trucks	0	0.4	0	0	0.3	1.6	0	0	0	0.4	0	1.2	0	0	0.7	0	1.9	4.2	0	2.3	0.6



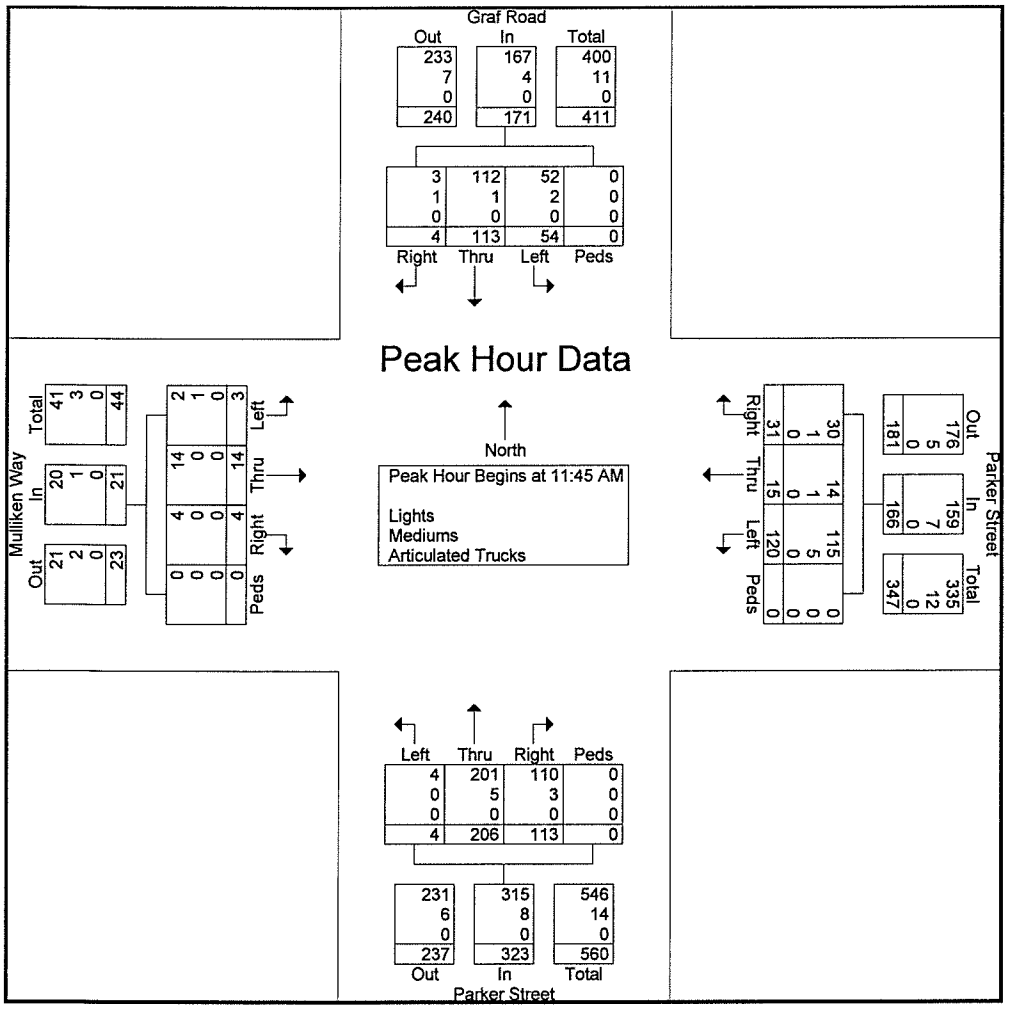
MDM Transportation Consultants, Inc.

28 Lord Road, Suite 280
Marlborough, MA

N/S: Parker Street/ Graf Road
E/W: Parker Street Muliken Way
Newburyport, MA

File Name : 977 Parker at Graf Saturday
Site Code : 977
Start Date : 2/16/2019
Page No : 2

	Graf Road From North					Parker Street From East					Parker Street From South					Mulliken Way From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	3	24	15	0	42	4	3	15	0	22	29	57	0	0	86	0	1	1	0	2	152
12:00 PM	0	31	12	0	43	6	4	30	0	40	26	53	1	0	80	2	5	1	0	8	171
12:15 PM	0	27	10	0	37	12	6	41	0	59	28	46	2	0	76	1	2	1	0	4	176
12:30 PM	1	31	17	0	49	9	2	34	0	45	30	50	1	0	81	1	6	0	0	7	182
Total Volume	4	113	54	0	171	31	15	120	0	166	113	206	4	0	323	4	14	3	0	21	681
% App. Total	2.3	66.1	31.6	0		18.7	9	72.3	0		35	63.8	1.2	0		19	66.7	14.3	0		
PHF	.333	.911	.794	.000	.872	.646	.625	.732	.000	.703	.942	.904	.500	.000	.939	.500	.583	.750	.000	.656	.935
Lights	3	112	52	0	167	30	14	115	0	159	110	201	4	0	315	4	14	2	0	20	661
% Lights	75.0	99.1	96.3	0	97.7	96.8	93.3	95.8	0	95.8	97.3	97.6	100	0	97.5	100	100	66.7	0	95.2	97.1
Mediums	1	1	2	0	4	1	1	5	0	7	3	5	0	0	8	0	0	1	0	1	20
% Mediums																					
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



MDM Transportation Consultants, Inc.

28 Lord Road, Suite 280
Marlborough, MA

N/S: 50 & 77 Parker Street Driveways
E/W: Parker Street
Newburyport, MA

File Name : 977 Proposed Driveways
Site Code : 977
Start Date : 2/14/2019
Page No : 1

Groups Printed- Lights - Mediums - Articulated Trucks

	50 Parker St Drive From North					Parker Street From East					77 Parker St Drive From South					Parker Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	58	0	0	58	0	0	0	0	0	0	28	1	0	29	87
07:15 AM	0	0	0	0	0	1	70	0	0	71	0	0	0	0	0	0	54	3	0	57	128
07:30 AM	0	0	0	0	0	2	67	0	0	69	0	0	0	0	0	0	55	0	0	55	124
07:45 AM	0	0	0	0	0	0	93	0	0	93	0	0	0	0	0	0	75	3	0	78	171
Total	0	0	0	0	0	3	288	0	0	291	0	0	0	0	0	0	212	7	0	219	510
08:00 AM	0	0	2	0	2	0	73	0	0	73	0	0	0	0	0	0	63	0	0	63	138
08:15 AM	0	0	0	0	0	0	60	0	0	60	0	0	0	0	0	0	67	3	0	70	130
08:30 AM	1	0	0	0	1	1	51	0	0	52	0	0	0	0	0	0	54	0	0	54	107
08:45 AM	0	0	0	0	0	0	47	0	0	47	0	0	0	0	0	0	58	1	0	59	106
Total	1	0	2	0	3	1	231	0	0	232	0	0	0	0	0	0	242	4	0	246	481
04:00 PM	3	0	1	0	4	0	51	0	0	51	0	0	0	0	0	0	64	0	0	64	119
04:15 PM	3	0	0	0	3	0	67	0	0	67	0	0	0	0	0	0	70	0	0	70	140
04:30 PM	0	0	1	0	1	0	60	0	0	60	0	0	0	0	0	0	74	0	0	74	135
04:45 PM	0	0	1	0	1	0	49	0	0	49	0	0	0	0	0	0	53	0	0	53	103
Total	6	0	3	0	9	0	227	0	0	227	0	0	0	0	0	0	261	0	0	261	497
05:00 PM	0	0	2	0	2	0	60	0	0	60	0	0	0	0	0	0	90	0	0	90	152
05:15 PM	0	0	0	0	0	0	32	0	0	32	0	0	0	0	0	0	79	0	0	79	111
05:30 PM	0	0	0	0	0	0	95	0	0	95	0	0	0	0	0	0	89	0	0	89	184
05:45 PM	0	0	1	0	1	0	32	0	0	32	0	0	0	0	0	0	63	0	0	63	96
Total	0	0	3	0	3	0	219	0	0	219	0	0	0	0	0	0	321	0	0	321	543
11:00 AM	0	0	0	0	0	0	40	0	0	40	0	0	0	0	0	0	33	0	0	33	73
11:15 AM	0	0	0	0	0	0	34	0	0	34	0	0	0	0	0	0	40	1	0	41	75
11:30 AM	1	0	0	0	1	0	36	1	0	37	0	0	1	0	1	0	31	0	0	31	70
11:45 AM	0	0	0	0	0	0	24	0	0	24	0	0	0	0	0	0	45	0	0	45	69
Total	1	0	0	0	1	0	134	1	0	135	0	0	1	0	1	0	149	1	0	150	287
12:00 PM	0	0	0	0	0	0	46	0	0	46	0	0	0	0	0	0	39	0	0	39	85
12:15 PM	1	0	0	0	1	0	53	0	0	53	0	0	0	0	0	0	43	0	0	43	97
12:30 PM	0	0	0	0	0	0	48	0	0	48	1	0	0	0	1	1	51	0	0	52	101
12:45 PM	0	0	0	0	0	0	27	0	0	27	0	0	0	0	0	0	47	0	0	47	74
Total	1	0	0	0	1	0	174	0	0	174	1	0	0	0	1	1	180	0	0	181	357
01:00 PM	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	0	35	0	0	35	60
01:15 PM	1	0	0	0	1	2	29	0	0	31	0	0	0	0	0	0	38	0	0	38	70
01:30 PM	0	0	1	0	1	0	32	1	0	33	0	0	0	0	0	0	44	0	0	44	78
01:45 PM	0	0	0	0	0	0	31	0	0	31	0	0	0	0	0	0	37	0	0	37	68
Total	1	0	1	0	2	2	117	1	0	120	0	0	0	0	0	0	154	0	0	154	276
Grand Total	10	0	9	0	19	6	1390	2	0	1398	1	0	1	0	2	1	1519	12	0	1532	2951
Apprch %	52.6	0	47.4	0		0.4	99.4	0.1	0		50	0	50	0		0.1	99.2	0.8	0		
Total %	0.3	0	0.3	0	0.6	0.2	47.1	0.1	0	47.4	0	0	0	0	0.1	0	51.5	0.4	0	51.9	
Lights	10	0	8	0	18	5	1347	2	0	1354	1	0	1	0	2	1	1469	12	0	1482	2856
% Lights	100	0	88.9	0	94.7	83.3	96.9	100	0	96.9	100	0	100	0	100	100	96.7	100	0	96.7	96.8
Mediums	0	0	1	0	1	1	39	0	0	40	0	0	0	0	0	0	41	0	0	41	82
% Mediums	0	0	11.1	0	5.3	16.7	2.8	0	0	2.9	0	0	0	0	0	0	2.7	0	0	2.7	2.8
Articulated Trucks	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	9	0	0	9	13
% Articulated Trucks	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0	0	0	0.6	0	0	0.6	0.4

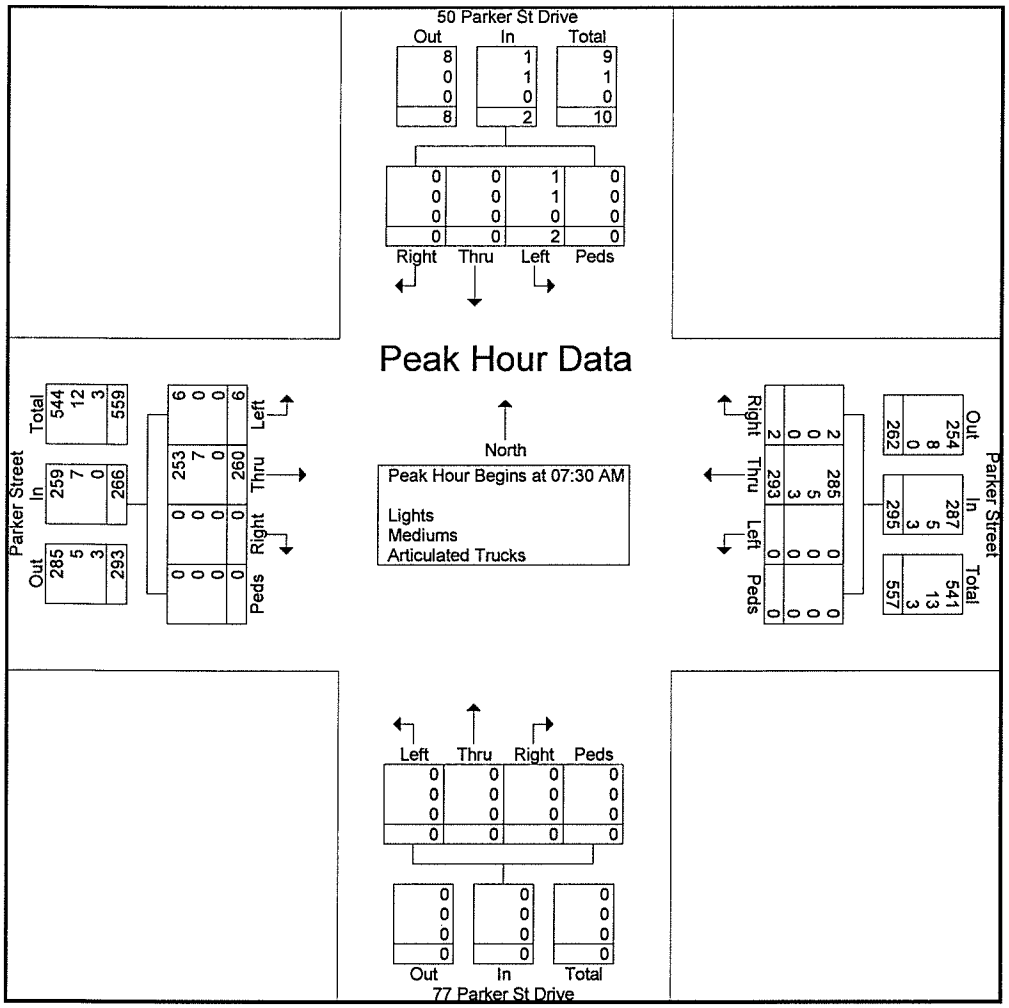
MDM Transportation Consultants, Inc.

28 Lord Road, Suite 280
Marlborough, MA

N/S: 50 & 77 Parker Street Driveways
E/W: Parker Street
Newburyport, MA

File Name : 977 Proposed Driveways
Site Code : 977
Start Date : 2/14/2019
Page No : 2

	50 Parker St Drive From North					Parker Street From East					77 Parker St Drive From South					Parker Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	2	67	0	0	69	0	0	0	0	0	0	55	0	0	55	124
07:45 AM	0	0	0	0	0	0	93	0	0	93	0	0	0	0	0	0	75	3	0	78	171
08:00 AM	0	0	2	0	2	0	73	0	0	73	0	0	0	0	0	0	63	0	0	63	138
08:15 AM	0	0	0	0	0	0	60	0	0	60	0	0	0	0	0	0	67	3	0	70	130
Total Volume	0	0	2	0	2	2	293	0	0	295	0	0	0	0	0	0	260	6	0	266	563
% App. Total	0	0	100	0		0.7	99.3	0	0		0	0	0	0		0	97.7	2.3	0		
PHF	.000	.000	.250	.000	.250	.250	.788	.000	.000	.793	.000	.000	.000	.000	.000	.000	.867	.500	.000	.853	.823
Lights	0	0	1	0	1	2	285	0	0	287	0	0	0	0	0	0	253	6	0	259	547
% Lights	0	0	50.0	0	50.0	100	97.3	0	0	97.3	0	0	0	0	0	0	97.3	100	0	97.4	97.2
Mediums	0	0	1	0	1	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	13
% Mediums																					
Articulated Trucks	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
% Articulated Trucks	0	0	0	0	0	0	1.0	0	0	1.0	0	0	0	0	0	0	0	0	0	0	0.5



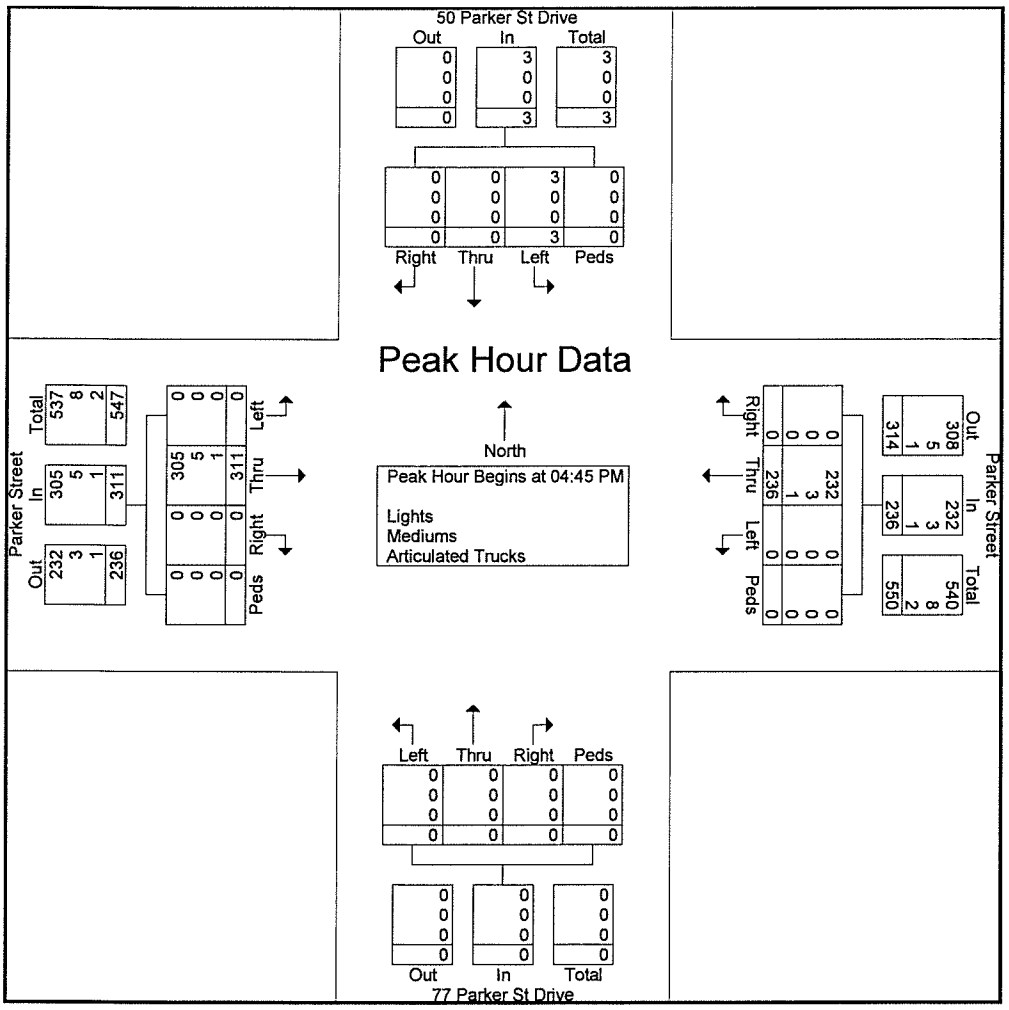
MDM Transportation Consultants, Inc.

28 Lord Road, Suite 280
Marlborough, MA

N/S: 50 & 77 Parker Street Driveways
E/W: Parker Street
Newburyport, MA

File Name : 977 Proposed Driveways
Site Code : 977
Start Date : 2/14/2019
Page No : 3

	50 Parker St Drive From North					Parker Street From East					77 Parker St Drive From South					Parker Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 11:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	1	0	1	0	49	0	0	49	0	0	0	0	0	0	53	0	0	53	103
05:00 PM	0	0	2	0	2	0	60	0	0	60	0	0	0	0	0	0	90	0	0	90	152
05:15 PM	0	0	0	0	0	0	32	0	0	32	0	0	0	0	0	0	79	0	0	79	111
05:30 PM	0	0	0	0	0	0	95	0	0	95	0	0	0	0	0	0	89	0	0	89	184
Total Volume	0	0	3	0	3	0	236	0	0	236	0	0	0	0	0	0	311	0	0	311	550
% App. Total	0	0	100	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.375	.000	.375	.000	.621	.000	.000	.621	.000	.000	.000	.000	.000	.000	.864	.000	.000	.864	.747
Lights	0	0	3	0	3	0	232	0	0	232	0	0	0	0	0	0	305	0	0	305	540
% Lights	0	0	100	0	100	0	98.3	0	0	98.3	0	0	0	0	0	0	98.1	0	0	98.1	98.2
Mediums	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	8
% Mediums																					
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
% Articulated Trucks	0	0	0	0	0	0	0.4	0	0	0.4	0	0	0	0	0	0	0.3	0	0	0.3	0.4



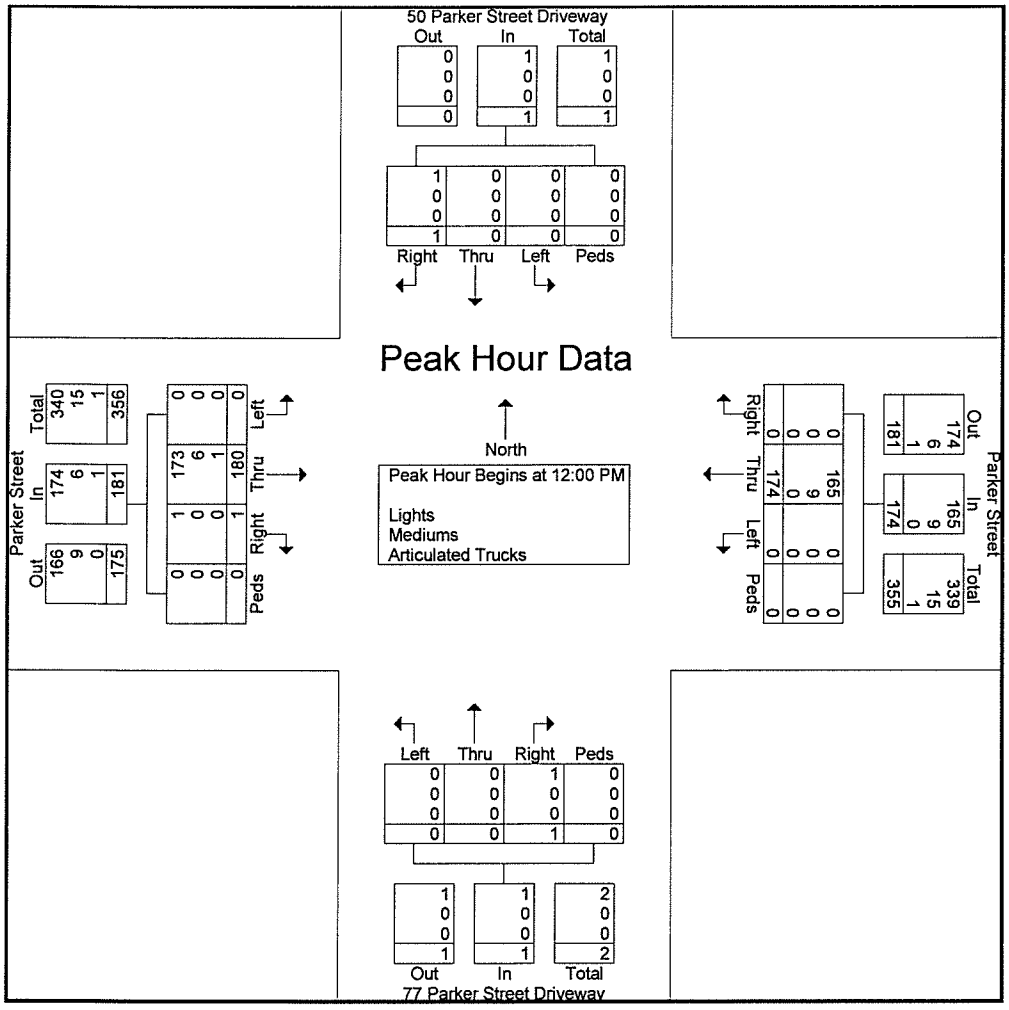
MDM Transportation Consultants, Inc.

28 Lord Road, Suite 280
Marlborough, MA

N/S: 50 & 77 Parker Street Driveways
E/W: Parker Street
Newburyport, MA

File Name : 977 Proposed Driveways Saturday
Site Code : 00000000
Start Date : 2/16/2019
Page No : 2

	50 Parker Street Driveway From North					Parker Street From East					77 Parker Street Driveway From South					Parker Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	0	0	0	0	0	46	0	0	46	0	0	0	0	0	0	39	0	0	39	85
12:15 PM	1	0	0	0	1	0	53	0	0	53	0	0	0	0	0	0	43	0	0	43	97
12:30 PM	0	0	0	0	0	0	48	0	0	48	1	0	0	0	1	1	51	0	0	52	101
12:45 PM	0	0	0	0	0	0	27	0	0	27	0	0	0	0	0	0	47	0	0	47	74
Total Volume	1	0	0	0	1	0	174	0	0	174	1	0	0	0	1	1	180	0	0	181	357
% App. Total	100	0	0	0		0	100	0	0		100	0	0	0		0.6	99.4	0	0		
PHF	.250	.000	.000	.000	.250	.000	.821	.000	.000	.821	.250	.000	.000	.000	.250	.250	.882	.000	.000	.870	.884
Lights	1	0	0	0	1	0	165	0	0	165	1	0	0	0	1	1	173	0	0	174	341
% Lights	100	0	0	0	100	0	94.8	0	0	94.8	100	0	0	0	100	100	96.1	0	0	96.1	95.5
Mediums	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	6	0	0	6	15
% Mediums																					
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0.6	0.3



- Seasonal Data

SECTION I - CONTINUOUS COUNTING STATION MONTHLY AVERAGE DAILY TRAFFIC

STATION 5010 - NEWBURY - RTE.I-95 - SOUTH OF SCOTLAND RD.

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
08	59,463	60,485	63,000	65,420	*68,863*	72,461	79,444	81,485	69,158	70,161	63,382	59,916	67,770
	-5%	1%	-4%	1%	1%	1%	1%	2%	5%	-1%	0%	3%	1%
09	56,254	60,998	60,741	65,981	*69,723*	72,870	80,271	83,498	72,755	69,281	63,516	61,523	68,118
	2%	-1%	4%	0%	3%	3%	4%	1%	1%	1%	3%	-1%	2%
10	57,311	60,412	62,874	66,194	*71,671*	75,291	83,447	84,636	73,300	69,965	65,132	60,888	69,260
	-5%	-4%	-1%	-3%	-5%	-1%	0%	-5%	-1%	0%	0%	4%	-2%
11	54,718	58,007	62,347	64,386	*68,084*	74,276	83,211	80,459	72,745	69,941	65,261	63,216	68,054
	7%	5%	0%	2%	5%	-1%	1%	6%	-1%	-2%	0%	-1%	2%
12	58,648	61,080	62,489	65,667	*71,204*	73,600	84,023	84,971	71,999	68,649	65,349	62,383	69,172
	0%	-7%	-3%	0%	0%	4%	-1%	1%	2%	5%	-1%	-18%	-1%
13	58,632	56,534	60,707	65,432	*71,158*	76,325	83,494	85,725	73,509	71,971	64,770	51,183	68,287
Seasonal Adjustment Factor (to average month)	1.19	1.15	1.10	1.04	0.98	0.92	0.83	0.82	0.95	0.98	1.06	1.15	
												Growth	**0.14%**

STATION 5128 - NEWBURY - RTE.1 - SOUTH OF HANOVER ST.

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
09	7,734	7,890	8,469	8,675	9,200	9,352	9,300	9,935	9,390	9,100	8,160	8,019	8,769
	-4%	-10%	-1%	-1%	1%	2%	3%	-3%	-1%	-1%	2%	2%	-1%
11	7,049	6,245	8,315	8,569	9,368	9,680	9,794	9,263	9,262	8,926	8,421	8,320	8,601
	14%	27%	2%	5%	-1%	-19%	-6%	0%	3%	1%	0%	-1%	1%
12	8,030	7,928	8,495	8,964	9,304	7,820	9,220	*9,260*	9,578	8,997	8,442	8,203	8,687
	-2%	-9%	-7%	-2%	3%	27%	5%	7%	-2%	1%	-2%	-4%	1%
13	7,899	7,233	7,901	8,805	9,625	9,924	9,665	9,869	9,420	9,100	8,239	7,844	8,794
Seasonal Adjustment Factor (to average month)	1.14	1.20	1.05	1.00	0.93	0.96	0.92	0.91	0.93	0.96	1.05	1.08	
												Growth	**0.21%**

STATION 5258 - WEST NEWBURY - RTE.I-95 - NORTH OF SCOTLAND RD.

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
08	56,156	55,549	58,000	60,205	63,921	67,516	74,637	76,747	65,170	*64,871*	58,424	54,893	63,007
	-3%	1%	3%	1%	1%	1%	1%	-1%	2%	2%	0%	2%	1%
09	54,522	56,074	60,000	60,916	64,808	68,356	75,236	76,000	66,789	*65,870*	58,560	56,041	63,598
	-4%	-2%	-4%	0%	2%	2%	4%	4%	2%	-2%	3%	0%	1%
10	52,451	54,781	57,350	60,787	66,228	69,857	78,218	79,290	68,013	*64,657*	60,104	55,878	63,968
	2%	-3%	0%	-2%	-5%	-1%	0%	-5%	-1%	-1%	0%	4%	-1%
11	53,628	53,106	57,332	59,404	62,699	69,034	78,077	75,436	67,289	*64,076*	60,090	58,319	63,208
	1%	6%	-1%	2%	5%	2%	-1%	5%	-2%	-1%	0%	-2%	1%
12	54,432	56,313	56,875	60,519	66,028	70,268	77,650	79,389	66,070	*63,430*	59,947	57,335	64,021
	5%	-9%	-2%	-1%	-1%	0%	1%	1%	3%	5%	0%	-4%	0%
13	57,356	51,519	55,611	60,141	65,643	70,600	78,055	80,033	67,988	*66,341*	59,842	55,071	64,017
Seasonal Adjustment Factor (to average month)	1.16	1.17	1.11	1.05	0.98	0.92	0.83	0.82	0.95	0.98	1.07	1.13	
												Growth	**0.27%**

Average	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Seasonal Adjustment Factor (to average month)	*1.16*	*1.17*	*1.09*	*1.03*	*0.96*	*0.93*	*0.86*	*0.85*	*0.94*	*0.97*	*1.06*	*1.12*

ITALICS = ESTIMATED DATA

MADT

□ Trip Generation

Institute of Transportation Engineers (ITE) 10th Edition
Land Use Code (LUC) 932 - High Turnover (Sit-Down) Restaurant

Average Vehicle Trips Ends vs: Seats
Independent Variable (X): 100

AVERAGE WEEKDAY DAILY

T = 4.37 * (X)
T = 4.37* 100
T = 437.00
T = 438 vehicle trips
with 50% (219 vpd) entering and 50% (219 vpd) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.42 * (X)
T = 0.42 * 100
T = 42.00
T = 42 vehicle trips
with 57% (24 vph) entering and 43% (18 vph) exiting.

SATURDAY DAILY (caution - small sample size)

T = 5.6 * (X)
T = 5.6* 100
T = 560.00
T = 560 vehicle trips
with 50% (280 vpd) entering and 50% (280 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 0.53 * (X)
T = 0.53* 100
T = 53.00
T = 53 vehicle trips
with 53% (28 vph) entering and 47% (25 vph) exiting.

Institute of Transportation Engineers (ITE) 10th Edition
Land Use Code (LUC) 710 - General Office Building

Average Vehicle Trips Ends vs: 1000 Sq. Feet Gross Floor Area
Independent Variable (X): 6.45

Average Weekday Daily

T = 9.74 * (X)
T = 9.74 * 6.45
T = 62.82
T = 62 vehicle trips
with 50% (**31** vpd) entering and 50% (**31** vpd) exiting.

Weekday Morning Peak Hour Of Adjacent Street Traffic

T = 1.16 * (X)
T = 1.16 * 6.45
T = 7.48
T = 7 vehicle trips
with 86% (**6** vph) entering and 14% (**1** vph) exiting.

Weekday Evening Peak Hour Of Adjacent Street Traffic

T = 1.15 * (X)
T = 1.15 * 6.45
T = 7.42
T = 7 vehicle trips
with 16% (**1** vph) entering and 84% (**6** vph) exiting.

Saturday Daily

T = 2.21 * (x)
T = 2.21 * 6.45
T = 14.25
T = 14 vehicle trips
with 50% (**7** vpd) entering and 50% (**7** vpd) exiting.

Saturday Midday Peak Hour Of Generator

T = 0.53 * (X)
T = 0.53 * 6.45
T = 3.42
T = 3 vehicle trips
with 54% (**2** vph) entering and 46% (**1** vph) exiting.

Institute of Transportation Engineers (ITE) 10th Edition
Land Use Code (LUC) 140 - Manufacturing

Average Vehicle Trips Ends vs: 1000 Sq. Feet Gross Floor Area
Independent Variable (X): 10.95

AVERAGE WEEKDAY DAILY

T = 3.16 * (X) 160.04
T = 3.16 * 10.95 160.04
T = 194.64
T = 194 vehicle trips
with 50% (97 vpd) entering and 50% (97 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.62 * (X)
T = 0.62 * 10.95
T = 6.79
T = 7 vehicle trips
with 77% (5 vph) entering and 23% (2 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.67 * (X)
T = 0.67 * 10.95
T = 7.34
T = 7 vehicle trips
with 31% (2 vph) entering and 69% (5 vph) exiting.

SATURDAY DAILY

T = 6.42 * (X) (Small Sample Size - Use with Caution)
T = 6.42 * 10.95
T = 70.30
T = 70 vehicle trips
with 50% (35 vpd) entering and 50% (35 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 0.94 * (X) (Small Sample Size - Use with Caution)
T = 0.94 * 10.95
T = 10.29
T = 10 vehicle trips
with 100% (10 vph) entering and exiting

Institute of Transportation Engineers (ITE) 10th Edition
Land Use Code (LUC) 932 - High Turnover (Sit-Down) Restaurant

Average Vehicle Trips Ends vs: Seats
Independent Variable (X): 275

AVERAGE WEEKDAY DAILY

T = 4.37 * (X)
T = 4.37* 275
T = 1201.75
T = 1,202 vehicle trips
with 50% (601 vpd) entering and 50% (601 vpd) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.42 * (X)
T = 0.42 * 275
T = 115.50
T = 116 vehicle trips
with 57% (66 vph) entering and 43% (50 vph) exiting.

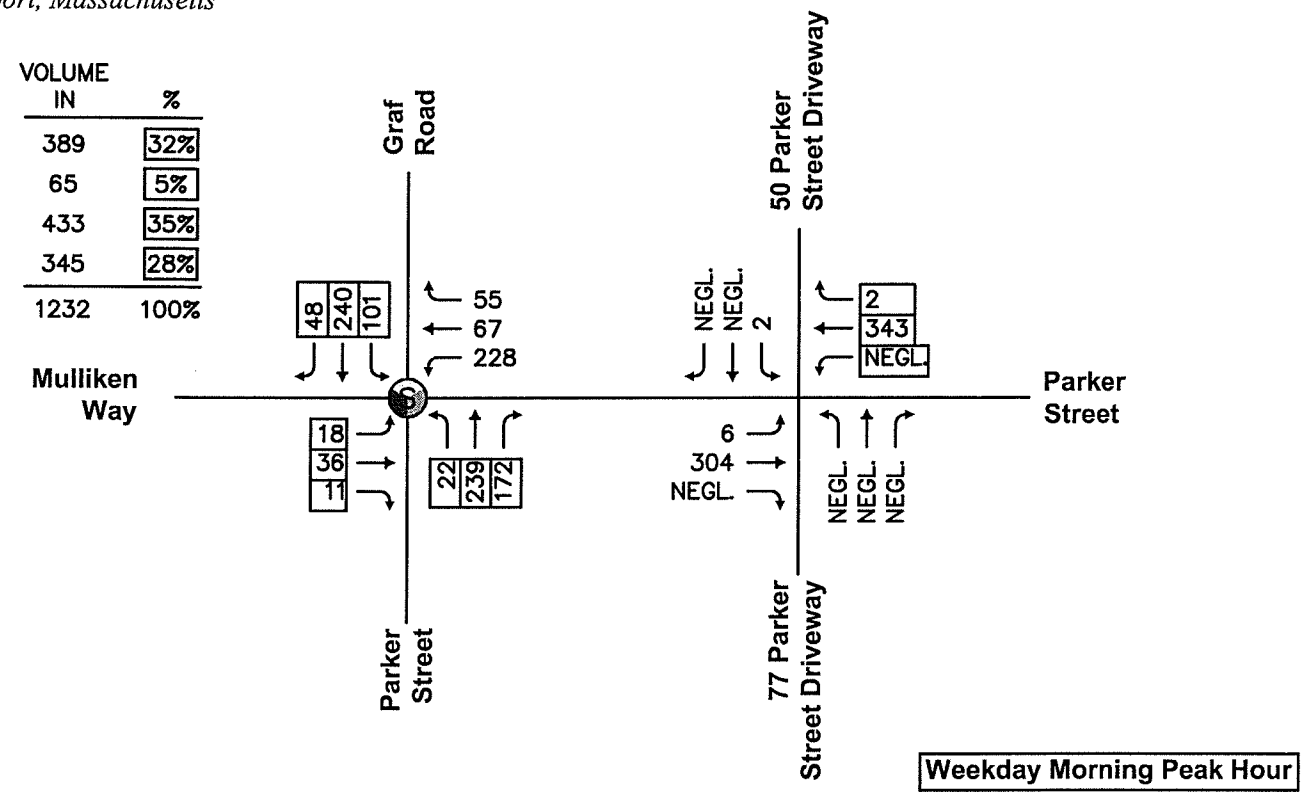
SATURDAY DAILY (caution - small sample size)

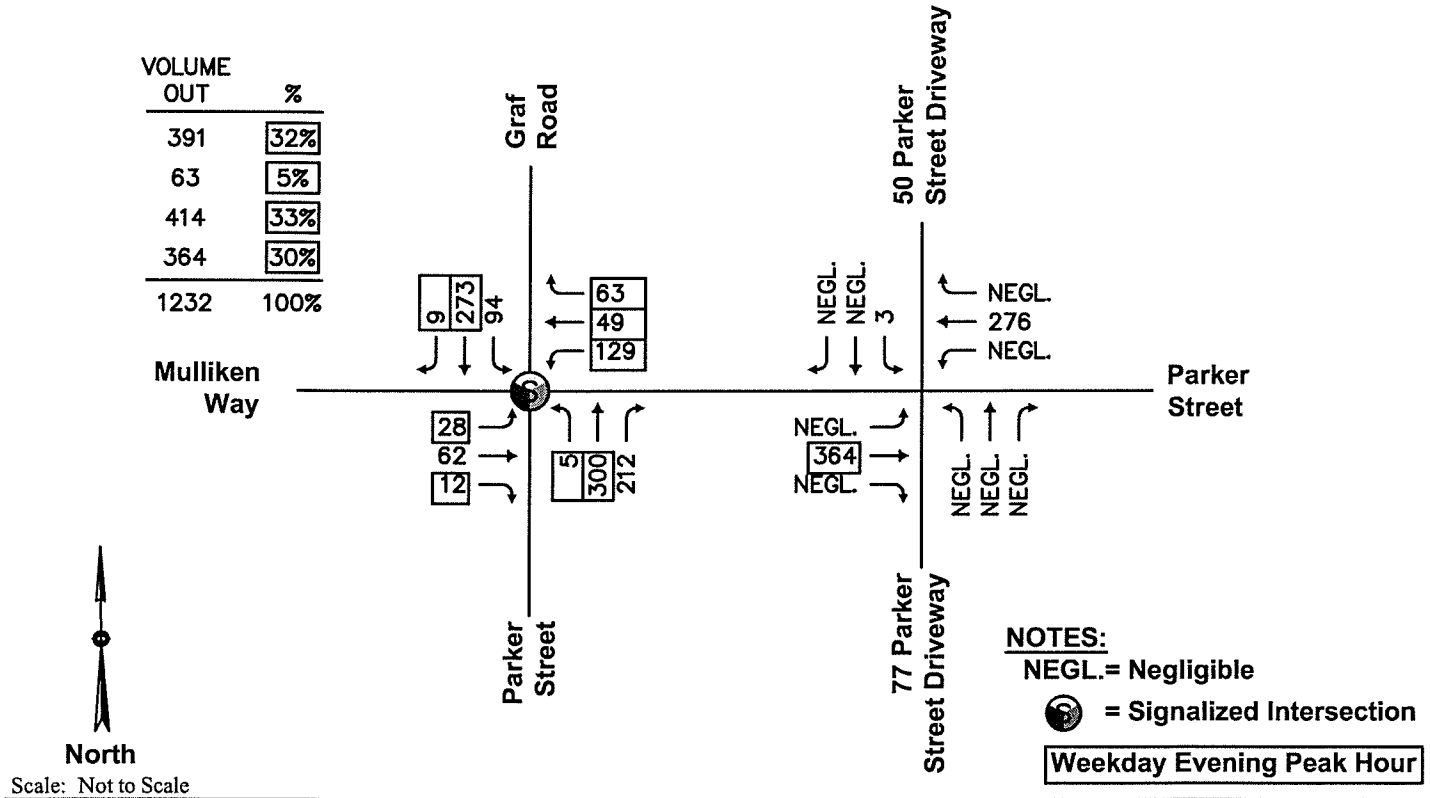
T = 5.6 * (X)
T = 5.6* 275
T = 1540.00
T = 1,540 vehicle trips
with 50% (770 vpd) entering and 50% (770 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = 0.53 * (X)
T = 0.53* 275
T = 145.75
T = 146 vehicle trips
with 53% (77 vph) entering and 47% (69 vph) exiting.

□ Trip Distribution Calculations





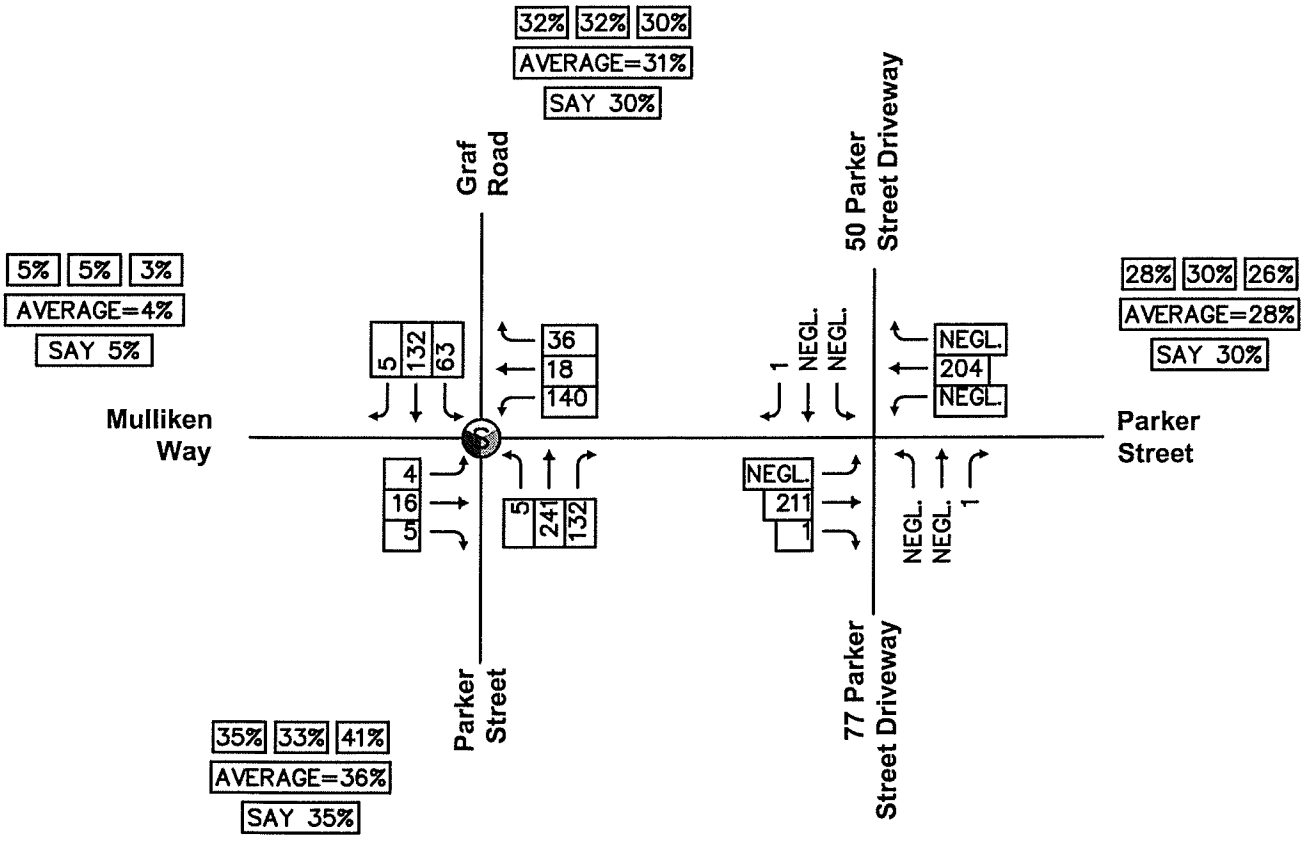
MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Attachment

Trip Distribution Calculations

Date: February 2019
Dwg No. 977 MR01.dwg

VOLUME IN/OUT	%
481	30%
53	3%
655	41%
416	26%
1605	100%



North

Scale: Not to Scale

NOTES:
NEGL.= Negligible
S = Signalized Intersection

Saturday Midday Peak Hour

MDM TRANSPORTATION CONSULTANTS, INC.
Planners & Engineers

Attachment

Trip Distribution Calculations

Date: February 2019
Dwg No. 977 MR01.dwg

□ Capacity Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	36	11	228	67	55	22	239	172	101	240	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.979			0.947			0.975	
Flt Protected		0.986			0.968			0.998		0.950		
Satd. Flow (prot)	0	1763	0	0	1755	0	0	1725	0	1719	1745	0
Flt Permitted		0.873			0.762			0.974		0.287		
Satd. Flow (perm)	0	1561	0	0	1382	0	0	1684	0	519	1745	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			10			42			21	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			200			100			500	
Travel Time (s)		11.4			4.5			2.3			11.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	0%	11%	3%	0%	4%	10%	5%	2%	5%	7%	2%
Adj. Flow (vph)	19	38	12	243	71	59	23	260	183	107	255	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	69	0	0	373	0	0	466	0	107	306	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		

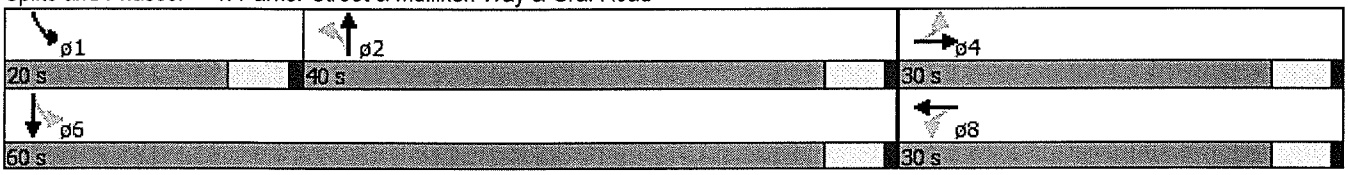
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		12.0	21.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%		22.2%	66.7%	
Maximum Green (s)	25.0	25.0		25.0	25.0		35.0	35.0		15.0	55.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0			5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		None	Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		23.5			23.5			22.9		32.5	32.5	
Actuated g/C Ratio		0.35			0.35			0.34		0.49	0.49	
v/c Ratio		0.12			0.76			0.77		0.26	0.36	
Control Delay		17.1			34.7			28.3		10.2	10.3	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		17.1			34.7			28.3		10.2	10.3	
LOS		B			C			C		B	B	
Approach Delay		17.1			34.7			28.3			10.3	
Approach LOS		B			C			C			B	
90th %ile Green (s)	25.0	25.0		25.0	25.0		35.0	35.0		9.8	49.8	
90th %ile Term Code	Hold	Hold		Max	Max		Max	Max		Gap	Hold	
70th %ile Green (s)	25.0	25.0		25.0	25.0		28.5	28.5		8.6	42.1	
70th %ile Term Code	Hold	Hold		Max	Max		Gap	Gap		Gap	Hold	
50th %ile Green (s)	25.0	25.0		25.0	25.0		22.9	22.9		7.8	35.7	
50th %ile Term Code	Hold	Hold		Max	Max		Gap	Gap		Gap	Hold	
30th %ile Green (s)	23.6	23.6		23.6	23.6		18.9	18.9		7.0	30.9	
30th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Min	Hold	
10th %ile Green (s)	15.7	15.7		15.7	15.7		11.7	11.7		0.0	11.7	
10th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Skip	Hold	
Queue Length 50th (ft)		16			137			168		23	69	
Queue Length 95th (ft)		53			#352			281		45	113	
Internal Link Dist (ft)		420			120			20			420	
Turn Bay Length (ft)										150		
Base Capacity (vph)		640			566			974		553	1397	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.11			0.66			0.48		0.19	0.22	

Intersection Summary

Area Type: Other

Cycle Length: 90
Actuated Cycle Length: 66.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 23.9 Intersection LOS: C
Intersection Capacity Utilization 78.5% ICU Level of Service D
Analysis Period (min) 15
90th %ile Actuated Cycle: 84.8
70th %ile Actuated Cycle: 77.1
50th %ile Actuated Cycle: 70.7
30th %ile Actuated Cycle: 64.5
10th %ile Actuated Cycle: 37.4
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Parker Street & Mulliken Way & Graf Road



Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	304	0	0	343	2	0	0	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	3	0	0	3	0	0	0	0	50	0	0
Mvmt Flow	7	371	0	0	418	2	0	0	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	421	0	0	371	0	0	804	805	371	804	804	420
Stage 1	-	-	-	-	-	-	384	384	-	420	420	-
Stage 2	-	-	-	-	-	-	420	421	-	384	384	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.6	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.6	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.6	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.95	4	3.3
Pot Cap-1 Maneuver	1149	-	-	1199	-	-	304	318	679	251	319	638
Stage 1	-	-	-	-	-	-	643	615	-	527	593	-
Stage 2	-	-	-	-	-	-	615	592	-	552	615	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1149	-	-	1199	-	-	302	315	679	249	316	638
Mov Cap-2 Maneuver	-	-	-	-	-	-	302	315	-	249	316	-
Stage 1	-	-	-	-	-	-	638	610	-	523	593	-
Stage 2	-	-	-	-	-	-	615	592	-	548	610	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	19.6
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1149	-	-	1199	-	-	249
HCM Lane V/C Ratio	-	0.006	-	-	-	-	-	0.01
HCM Control Delay (s)	0	8.2	0	-	0	-	-	19.6
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	62	12	129	49	63	5	300	212	94	273	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.965			0.945			0.995	
Flt Protected		0.987			0.974					0.950		
Satd. Flow (prot)	0	1785	0	0	1751	0	0	1768	0	1719	1830	0
Flt Permitted		0.880			0.796			0.997		0.258		
Satd. Flow (perm)	0	1591	0	0	1431	0	0	1762	0	467	1830	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			20			45			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			200			100			500	
Travel Time (s)		11.4			4.5			2.3			11.4	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	8%	2%	0%	0%	2%	6%	0%	2%	1%	5%	3%	12%
Adj. Flow (vph)	33	74	14	154	58	75	6	357	252	112	325	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	121	0	0	287	0	0	615	0	112	336	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		

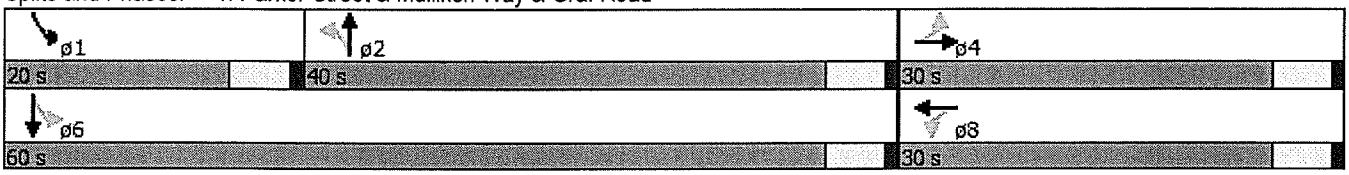
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		12.0	21.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%		22.2%	66.7%	
Maximum Green (s)	25.0	25.0		25.0	25.0		35.0	35.0		15.0	55.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0			5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		None	Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		19.3			19.3			28.5		38.0	38.0	
Actuated g/C Ratio		0.28			0.28			0.42		0.55	0.55	
v/c Ratio		0.27			0.69			0.81		0.27	0.33	
Control Delay		22.9			32.6			28.2		9.0	9.1	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		22.9			32.6			28.2		9.0	9.1	
LOS		C			C			C		A	A	
Approach Delay		22.9			32.6			28.2			9.1	
Approach LOS		C			C			C			A	
90th %ile Green (s)	25.0	25.0		25.0	25.0		35.0	35.0		10.0	50.0	
90th %ile Term Code	Hold	Hold		Max	Max		Max	Max		Gap	Hold	
70th %ile Green (s)	24.8	24.8		24.8	24.8		35.0	35.0		8.7	48.7	
70th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max		Gap	Hold	
50th %ile Green (s)	20.6	20.6		20.6	20.6		32.5	32.5		7.7	45.2	
50th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Gap	Hold	
30th %ile Green (s)	16.1	16.1		16.1	16.1		25.6	25.6		7.0	37.6	
30th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Min	Hold	
10th %ile Green (s)	10.0	10.0		10.0	10.0		14.4	14.4		0.0	14.4	
10th %ile Term Code	Hold	Hold		Min	Min		Gap	Gap		Skip	Hold	
Queue Length 50th (ft)		42			113			224		20	70	
Queue Length 95th (ft)		83			192			362		43	118	
Internal Link Dist (ft)		420			120			20			420	
Turn Bay Length (ft)										150		
Base Capacity (vph)		654			596			1021		567	1426	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.19			0.48			0.60		0.20	0.24	

Intersection Summary

Area Type: Other

Cycle Length: 90
Actuated Cycle Length: 68.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 22.8
Intersection LOS: C
Intersection Capacity Utilization 76.7%
ICU Level of Service D
Analysis Period (min) 15
90th %ile Actuated Cycle: 85
70th %ile Actuated Cycle: 83.5
50th %ile Actuated Cycle: 75.8
30th %ile Actuated Cycle: 63.7
10th %ile Actuated Cycle: 34.4

Splits and Phases: 1: Parker Street & Mulliken Way & Graf Road



Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	364	0	0	276	0	0	0	0	3	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	485	0	0	368	0	0	0	0	4	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	368	0	0	485	0	0	853	853	485	853	853	368
Stage 1	-	-	-	-	-	-	485	485	-	368	368	-
Stage 2	-	-	-	-	-	-	368	368	-	485	485	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1202	-	-	1088	-	-	281	299	586	281	299	682
Stage 1	-	-	-	-	-	-	567	555	-	656	625	-
Stage 2	-	-	-	-	-	-	656	625	-	567	555	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1202	-	-	1088	-	-	281	299	586	281	299	682
Mov Cap-2 Maneuver	-	-	-	-	-	-	281	299	-	281	299	-
Stage 1	-	-	-	-	-	-	567	555	-	656	625	-
Stage 2	-	-	-	-	-	-	656	625	-	567	555	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	18
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1202	-	-	1088	-	-	281
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.014
HCM Control Delay (s)	0	0	-	-	0	-	-	18
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	16	5	140	18	36	5	241	132	63	132	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974			0.975			0.953			0.995	
Flt Protected		0.992			0.965			0.999		0.950		
Satd. Flow (prot)	0	1747	0	0	1717	0	0	1768	0	1736	1857	0
Flt Permitted		0.953			0.770			0.997		0.365		
Satd. Flow (perm)	0	1678	0	0	1370	0	0	1764	0	667	1857	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			13			35			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			200			100			500	
Travel Time (s)		11.4			4.5			2.3			11.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	33%	0%	0%	4%	7%	3%	0%	2%	3%	4%	1%	25%
Adj. Flow (vph)	4	17	5	149	19	38	5	256	140	67	140	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	206	0	0	401	0	67	145	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		

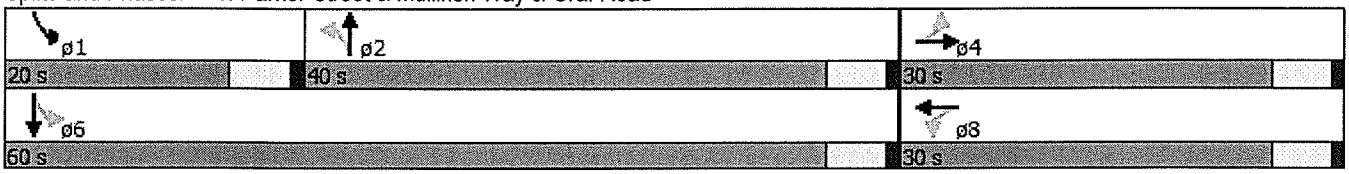
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		12.0	21.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%		22.2%	66.7%	
Maximum Green (s)	25.0	25.0		25.0	25.0		35.0	35.0		15.0	55.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0			5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		None	Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		14.4			14.4			20.2		26.6	26.6	
Actuated g/C Ratio		0.28			0.28			0.39		0.51	0.51	
v/c Ratio		0.06			0.53			0.57		0.13	0.15	
Control Delay		15.5			22.6			17.2		7.2	7.1	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		15.5			22.6			17.2		7.2	7.1	
LOS		B			C			B		A	A	
Approach Delay		15.5			22.6			17.2			7.1	
Approach LOS		B			C			B			A	
90th %ile Green (s)	22.4	22.4		22.4	22.4		28.8	28.8		8.4	42.2	
90th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Gap	Hold	
70th %ile Green (s)	16.2	16.2		16.2	16.2		20.4	20.4		7.2	32.6	
70th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Gap	Hold	
50th %ile Green (s)	13.0	13.0		13.0	13.0		16.5	16.5		7.0	28.5	
50th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Min	Hold	
30th %ile Green (s)	10.5	10.5		10.5	10.5		13.4	13.4		0.0	13.4	
30th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Skip	Hold	
10th %ile Green (s)	10.0	10.0		10.0	10.0		20.0	20.0		0.0	20.0	
10th %ile Term Code	Hold	Hold		Min	Min		Dwell	Dwell		Skip	Dwell	
Queue Length 50th (ft)		5			51			94		8	18	
Queue Length 95th (ft)		24			135			215		29	53	
Internal Link Dist (ft)		420			120			20			420	
Turn Bay Length (ft)										150		
Base Capacity (vph)		877			720			1330		683	1736	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.03			0.29			0.30		0.10	0.08	

Intersection Summary

Area Type: Other

Cycle Length: 90
Actuated Cycle Length: 51.8
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 15.9
Intersection LOS: B
Intersection Capacity Utilization 59.4%
ICU Level of Service B
Analysis Period (min) 15
90th %ile Actuated Cycle: 74.6
70th %ile Actuated Cycle: 58.8
50th %ile Actuated Cycle: 51.5
30th %ile Actuated Cycle: 33.9
10th %ile Actuated Cycle: 40

Splits and Phases: 1: Parker Street & Mulliken Way & Graf Road



Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	211	1	0	204	0	0	0	1	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	4	0	0	5	0	0	0	0	0	0	0
Mvmt Flow	0	240	1	0	232	0	0	0	1	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	232	0	0	241	0	0	472	472	240	473	473	232
Stage 1	-	-	-	-	-	-	240	240	-	232	232	-
Stage 2	-	-	-	-	-	-	232	232	-	241	241	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1348	-	-	1337	-	-	506	493	804	505	493	812
Stage 1	-	-	-	-	-	-	768	711	-	775	716	-
Stage 2	-	-	-	-	-	-	775	716	-	767	710	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1348	-	-	1337	-	-	505	493	804	504	493	812
Mov Cap-2 Maneuver	-	-	-	-	-	-	505	493	-	504	493	-
Stage 1	-	-	-	-	-	-	768	711	-	775	716	-
Stage 2	-	-	-	-	-	-	774	716	-	766	710	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.5	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	804	1348	-	-	1337	-	-	812
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	0.001
HCM Control Delay (s)	9.5	0	-	-	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	36	11	229	67	56	22	239	172	104	240	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.978			0.947			0.975	
Flt Protected		0.986			0.968			0.998		0.950		
Satd. Flow (prot)	0	1763	0	0	1753	0	0	1725	0	1719	1745	0
Flt Permitted		0.873			0.762			0.974		0.286		
Satd. Flow (perm)	0	1561	0	0	1380	0	0	1684	0	518	1745	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			11			42			21	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			200			100			500	
Travel Time (s)		11.4			4.5			2.3			11.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	0%	11%	3%	0%	4%	10%	5%	2%	5%	7%	2%
Adj. Flow (vph)	19	38	12	244	71	60	23	260	183	111	255	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	69	0	0	375	0	0	466	0	111	306	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		

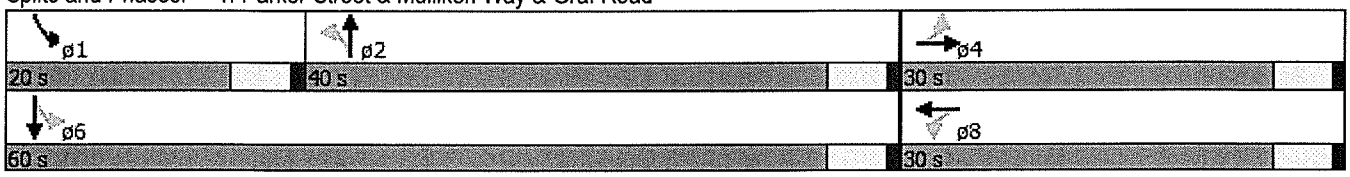
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		12.0	21.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%		22.2%	66.7%	
Maximum Green (s)	25.0	25.0		25.0	25.0		35.0	35.0		15.0	55.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0			5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		None	Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		23.7			23.7			23.0		32.7	32.7	
Actuated g/C Ratio		0.35			0.35			0.34		0.49	0.49	
v/c Ratio		0.12			0.76			0.77		0.27	0.36	
Control Delay		17.2			34.9			28.4		10.3	10.3	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		17.2			34.9			28.4		10.3	10.3	
LOS		B			C			C		B	B	
Approach Delay		17.2			34.9			28.4			10.3	
Approach LOS		B			C			C			B	
90th %ile Green (s)	25.0	25.0		25.0	25.0		35.0	35.0		10.0	50.0	
90th %ile Term Code	Hold	Hold		Max	Max		Max	Max		Gap	Hold	
70th %ile Green (s)	25.0	25.0		25.0	25.0		28.6	28.6		8.7	42.3	
70th %ile Term Code	Hold	Hold		Max	Max		Gap	Gap		Gap	Hold	
50th %ile Green (s)	25.0	25.0		25.0	25.0		23.0	23.0		7.9	35.9	
50th %ile Term Code	Hold	Hold		Max	Max		Gap	Gap		Gap	Hold	
30th %ile Green (s)	24.0	24.0		24.0	24.0		19.0	19.0		7.1	31.1	
30th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Gap	Hold	
10th %ile Green (s)	16.0	16.0		16.0	16.0		11.8	11.8		0.0	11.8	
10th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Skip	Hold	
Queue Length 50th (ft)		16			138			168		24	69	
Queue Length 95th (ft)		53			#356			282		46	113	
Internal Link Dist (ft)		420			120			20			420	
Turn Bay Length (ft)										150		
Base Capacity (vph)		636			562			968		551	1393	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.11			0.67			0.48		0.20	0.22	

Intersection Summary

Area Type: Other

Cycle Length: 90
Actuated Cycle Length: 67.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 24.0 Intersection LOS: C
Intersection Capacity Utilization 78.6% ICU Level of Service D
Analysis Period (min) 15
90th %ile Actuated Cycle: 85
70th %ile Actuated Cycle: 77.3
50th %ile Actuated Cycle: 70.9
30th %ile Actuated Cycle: 65.1
10th %ile Actuated Cycle: 37.8
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Parker Street & Mulliken Way & Graf Road



Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	305	0	0	346	2	0	0	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	3	0	0	3	0	0	0	0	50	0	0
Mvmt Flow	7	372	0	0	422	2	0	0	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	424	0	0	372	0	0	808	809	372	808	808	423
Stage 1	-	-	-	-	-	-	385	385	-	423	423	-
Stage 2	-	-	-	-	-	-	423	424	-	385	385	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.6	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.6	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.6	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.95	4	3.3
Pot Cap-1 Maneuver	1146	-	-	1198	-	-	302	317	678	250	317	635
Stage 1	-	-	-	-	-	-	642	614	-	525	591	-
Stage 2	-	-	-	-	-	-	613	590	-	552	614	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1146	-	-	1198	-	-	300	314	678	248	314	635
Mov Cap-2 Maneuver	-	-	-	-	-	-	300	314	-	248	314	-
Stage 1	-	-	-	-	-	-	637	609	-	521	591	-
Stage 2	-	-	-	-	-	-	613	590	-	548	609	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	19.7
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1146	-	-	1198	-	-	248
HCM Lane V/C Ratio	-	0.006	-	-	-	-	-	0.01
HCM Control Delay (s)	0	8.2	0	-	0	-	-	19.7
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	308	4	3	350	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	335	4	3	380	2	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	339	0	724	337
Stage 1	-	-	-	-	337	-
Stage 2	-	-	-	-	387	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1220	-	393	705
Stage 1	-	-	-	-	723	-
Stage 2	-	-	-	-	686	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1220	-	392	705
Mov Cap-2 Maneuver	-	-	-	-	392	-
Stage 1	-	-	-	-	723	-
Stage 2	-	-	-	-	684	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	460	-	-	1220	-
HCM Lane V/C Ratio	0.007	-	-	0.003	-
HCM Control Delay (s)	12.9	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	0	433	4	0	480
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	471	4	0	522

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	995	473	0	0	475	0
Stage 1	473	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	271	591	-	-	1087	-
Stage 1	627	-	-	-	-	-
Stage 2	595	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	271	591	-	-	1087	-
Mov Cap-2 Maneuver	271	-	-	-	-	-
Stage 1	627	-	-	-	-	-
Stage 2	595	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1087	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	65	12	149	52	75	5	307	212	115	273	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.963			0.945			0.995	
Flt Protected		0.987			0.974					0.950		
Satd. Flow (prot)	0	1787	0	0	1747	0	0	1768	0	1719	1830	0
Flt Permitted		0.874			0.787			0.997		0.252		
Satd. Flow (perm)	0	1582	0	0	1412	0	0	1762	0	456	1830	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			21			44			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			200			100			500	
Travel Time (s)		11.4			4.5			2.3			11.4	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	8%	2%	0%	0%	2%	6%	0%	2%	1%	5%	3%	12%
Adj. Flow (vph)	33	77	14	177	62	89	6	365	252	137	325	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	0	0	328	0	0	623	0	137	336	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		

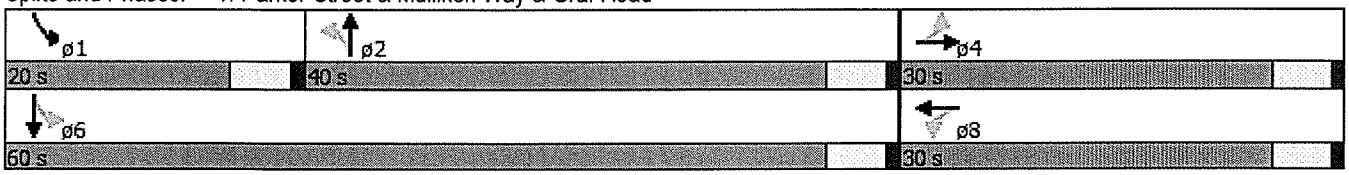
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		12.0	21.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%		22.2%	66.7%	
Maximum Green (s)	25.0	25.0		25.0	25.0		35.0	35.0		15.0	55.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0			5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		None	Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		21.9			21.9			30.7		40.9	40.9	
Actuated g/C Ratio		0.30			0.30			0.42		0.56	0.56	
v/c Ratio		0.26			0.75			0.82		0.34	0.33	
Control Delay		23.3			37.1			30.0		10.2	9.6	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		23.3			37.1			30.0		10.2	9.6	
LOS		C			D			C		B	A	
Approach Delay		23.3			37.1			30.0			9.8	
Approach LOS		C			D			C			A	
90th %ile Green (s)	25.0	25.0		25.0	25.0		35.0	35.0		10.9	50.9	
90th %ile Term Code	Hold	Hold		Max	Max		Max	Max		Gap	Hold	
70th %ile Green (s)	25.0	25.0		25.0	25.0		35.0	35.0		9.4	49.4	
70th %ile Term Code	Hold	Hold		Max	Max		Max	Max		Gap	Hold	
50th %ile Green (s)	25.0	25.0		25.0	25.0		35.0	35.0		8.5	48.5	
50th %ile Term Code	Hold	Hold		Max	Max		Max	Max		Gap	Hold	
30th %ile Green (s)	20.1	20.1		20.1	20.1		28.3	28.3		7.4	40.7	
30th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Gap	Hold	
10th %ile Green (s)	13.7	13.7		13.7	13.7		19.3	19.3		0.0	19.3	
10th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Skip	Hold	
Queue Length 50th (ft)		46			145			261		30	82	
Queue Length 95th (ft)		86			#248			#381		51	118	
Internal Link Dist (ft)		420			120			20			420	
Turn Bay Length (ft)										150		
Base Capacity (vph)		580			527			920		529	1365	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.21			0.62			0.68		0.26	0.25	

Intersection Summary

Area Type: Other

Cycle Length: 90
Actuated Cycle Length: 73.5
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 24.8
Intersection LOS: C
Intersection Capacity Utilization 79.0%
ICU Level of Service D
Analysis Period (min) 15
90th %ile Actuated Cycle: 85.9
70th %ile Actuated Cycle: 84.4
50th %ile Actuated Cycle: 83.5
30th %ile Actuated Cycle: 70.8
10th %ile Actuated Cycle: 43
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Parker Street & Mulliken Way & Graf Road



Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	385	0	0	297	0	0	0	0	3	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	513	0	0	396	0	0	0	0	4	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	396	0	0	513	0	0	909	909	513	909	909	396
Stage 1	-	-	-	-	-	-	513	513	-	396	396	-
Stage 2	-	-	-	-	-	-	396	396	-	513	513	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1174	-	-	1063	-	-	258	277	565	258	277	658
Stage 1	-	-	-	-	-	-	548	539	-	633	607	-
Stage 2	-	-	-	-	-	-	633	607	-	548	539	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1174	-	-	1063	-	-	258	277	565	258	277	658
Mov Cap-2 Maneuver	-	-	-	-	-	-	258	277	-	258	277	-
Stage 1	-	-	-	-	-	-	548	539	-	633	607	-
Stage 2	-	-	-	-	-	-	633	607	-	548	539	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	19.2
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1174	-	-	1063	-	-	258
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.016
HCM Control Delay (s)	0	0	-	-	0	-	-	19.2
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	368	24	21	241	35	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	400	26	23	262	38	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	426	0	721	413
Stage 1	-	-	-	-	413	-
Stage 2	-	-	-	-	308	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1133	-	394	639
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	745	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1133	-	385	639
Mov Cap-2 Maneuver	-	-	-	-	385	-
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	727	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	14.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	445	-	-	1133	-
HCM Lane V/C Ratio	0.129	-	-	0.02	-
HCM Control Delay (s)	14.3	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	7	517	24	0	434
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	562	26	0	472

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1047	575	0	0	588	0
Stage 1	575	-	-	-	-	-
Stage 2	472	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	253	518	-	-	987	-
Stage 1	563	-	-	-	-	-
Stage 2	628	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	253	518	-	-	987	-
Mov Cap-2 Maneuver	253	-	-	-	-	-
Stage 1	563	-	-	-	-	-
Stage 2	628	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	518	987	-
HCM Lane V/C Ratio	-	-	0.015	-	-
HCM Control Delay (s)	-	-	12.1	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	20	5	166	21	51	5	248	132	88	132	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.971			0.954			0.995	
Flt Protected		0.993			0.966			0.999		0.950		
Satd. Flow (prot)	0	1766	0	0	1713	0	0	1770	0	1736	1857	0
Flt Permitted		0.957			0.773			0.997		0.324		
Satd. Flow (perm)	0	1702	0	0	1371	0	0	1766	0	592	1857	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			15			34			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			200			100			500	
Travel Time (s)		11.4			4.5			2.3			11.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	33%	0%	0%	4%	7%	3%	0%	2%	3%	4%	1%	25%
Adj. Flow (vph)	4	21	5	177	22	54	5	264	140	94	140	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	253	0	0	409	0	94	145	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		

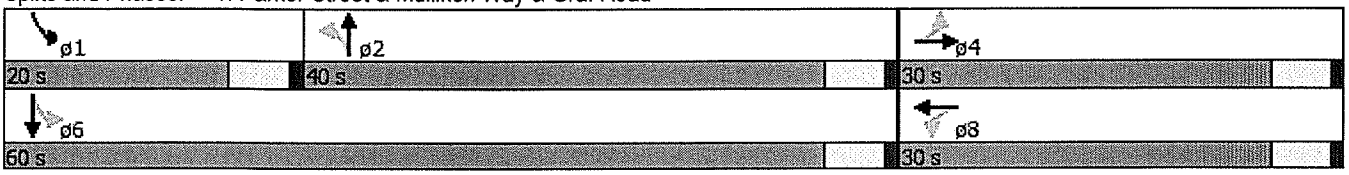
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		12.0	21.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0		20.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%		22.2%	66.7%	
Maximum Green (s)	25.0	25.0		25.0	25.0		35.0	35.0		15.0	55.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0			5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		None	Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		16.3			16.3			19.1		28.6	28.6	
Actuated g/C Ratio		0.29			0.29			0.34		0.51	0.51	
v/c Ratio		0.06			0.62			0.65		0.20	0.15	
Control Delay		15.8			26.0			21.5		8.2	7.6	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		15.8			26.0			21.5		8.2	7.6	
LOS		B			C			C		A	A	
Approach Delay		15.8			26.0			21.5			7.8	
Approach LOS		B			C			C			A	
90th %ile Green (s)	25.0	25.0		25.0	25.0		29.9	29.9		9.3	44.2	
90th %ile Term Code	Hold	Hold		Max	Max		Gap	Gap		Gap	Hold	
70th %ile Green (s)	19.6	19.6		19.6	19.6		23.4	23.4		8.1	36.5	
70th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Gap	Hold	
50th %ile Green (s)	15.3	15.3		15.3	15.3		17.8	17.8		7.2	30.0	
50th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Gap	Hold	
30th %ile Green (s)	12.1	12.1		12.1	12.1		14.2	14.2		7.0	26.2	
30th %ile Term Code	Hold	Hold		Gap	Gap		Gap	Gap		Min	Hold	
10th %ile Green (s)	10.0	10.0		10.0	10.0		11.3	11.3		0.0	11.3	
10th %ile Term Code	Hold	Hold		Min	Min		Dwell	Dwell		Skip	Dwell	
Queue Length 50th (ft)		6			68			105		13	20	
Queue Length 95th (ft)		27			172			236		41	57	
Internal Link Dist (ft)		420			120			20			420	
Turn Bay Length (ft)										150		
Base Capacity (vph)		840			682			1187		654	1679	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.04			0.37			0.34		0.14	0.09	

Intersection Summary

Area Type: Other

Cycle Length: 90
Actuated Cycle Length: 56
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 19.0
Intersection LOS: B
Intersection Capacity Utilization 62.3%
ICU Level of Service B
Analysis Period (min) 15
90th %ile Actuated Cycle: 79.2
70th %ile Actuated Cycle: 66.1
50th %ile Actuated Cycle: 55.3
30th %ile Actuated Cycle: 48.3
10th %ile Actuated Cycle: 31.3

Splits and Phases: 1: Parker Street & Mulliken Way & Graf Road



Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	234	1	0	229	0	0	0	1	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	4	0	0	5	0	0	0	0	0	0	0
Mvmt Flow	0	266	1	0	260	0	0	0	1	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	260	0	0	267	0	0	527	526	266	527	527	260
Stage 1	-	-	-	-	-	-	266	266	-	260	260	-
Stage 2	-	-	-	-	-	-	261	260	-	267	267	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1316	-	-	1308	-	-	465	460	778	465	459	784
Stage 1	-	-	-	-	-	-	744	692	-	749	697	-
Stage 2	-	-	-	-	-	-	748	697	-	743	692	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1316	-	-	1308	-	-	464	460	778	464	459	784
Mov Cap-2 Maneuver	-	-	-	-	-	-	464	460	-	464	459	-
Stage 1	-	-	-	-	-	-	744	692	-	749	697	-
Stage 2	-	-	-	-	-	-	747	697	-	742	692	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.6	9.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	778	1316	-	-	1308	-	-	784
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	0.001
HCM Control Delay (s)	9.6	0	-	-	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	211	29	25	194	44	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	229	32	27	211	48	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	261	0	510	245
Stage 1	-	-	-	-	245	-
Stage 2	-	-	-	-	265	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1303	-	523	794
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	779	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1303	-	511	794
Mov Cap-2 Maneuver	-	-	-	-	511	-
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	761	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	582	-	-	1303	-
HCM Lane V/C Ratio	0.125	-	-	0.021	-
HCM Control Delay (s)	12.1	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	8	377	30	0	303
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	410	33	0	329

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	755	426	0	0	442	0
Stage 1	426	-	-	-	-	-
Stage 2	329	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	376	628	-	-	1118	-
Stage 1	659	-	-	-	-	-
Stage 2	729	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	376	628	-	-	1118	-
Mov Cap-2 Maneuver	376	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	729	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	628	1118	-
HCM Lane V/C Ratio	-	-	0.014	-	-
HCM Control Delay (s)	-	-	10.8	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-