

APPENDIX

Traffic Count Data

Seasonal Adjustment Worksheets

Crash Data and Worksheets

Bus Route Data

Trip Generation Worksheets

Trip Distribution Worksheets

Capacity Analysis Worksheets

Sight Distance Worksheets

Traffic Count Data

tel (781) 587-0086 cell (781) 439-4999

Great Plain Avenue (Route 135)
west of Marshall Street
City, State: Needham, MA
Client: Bayside/K. Cram

05171Bvolume
Site Code: 2192633

[illegible]

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

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Great Plain Avenue (Route 135)

west of Marshall Street

City, State: Needham, MA

Client: Bayside/K. Cram

05171Bvolume

Site Code: 2192633

Start Time	02-May-19 Thu	EB		Hour Totals		WB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		5	92			5	107				
12:15		6	86			4	96				
12:30		6	100			3	93				
12:45		1	88	18	366	1	101	13	397	31	763
01:00		2	89			0	81				
01:15		3	94			3	94				
01:30		2	113			2	107				
01:45		1	85	8	381	2	113	7	395	15	776
02:00		2	121			0	80				
02:15		0	93			0	115				
02:30		0	113			1	123				
02:45		0	101	2	428	0	158	1	476	3	904
03:00		0	111			0	151				
03:15		2	138			3	112				
03:30		3	128			2	126				
03:45		1	123	6	500	2	126	7	515	13	1015
04:00		5	114			3	158				
04:15		3	101			5	136				
04:30		0	115			6	143				
04:45		3	93	11	423	8	146	22	583	33	1006
05:00		10	111			14	173				
05:15		10	123			10	152				
05:30		7	123			18	174				
05:45		22	136	49	493	29	164	71	663	120	1156
06:00		24	125			32	153				
06:15		31	111			33	150				
06:30		73	94			40	103				
06:45		88	76	216	406	48	72	153	478	369	884
07:00		124	89			72	72				
07:15		114	89			86	85				
07:30		150	71			81	87				
07:45		128	76	516	325	121	71	360	315	876	640
08:00		105	41			116	38				
08:15		89	51			120	53				
08:30		133	50			126	49				
08:45		121	46	448	188	123	56	485	196	933	384
09:00		87	35			109	49				
09:15		96	29			127	37				
09:30		79	32			124	24				
09:45		83	26	345	122	111	24	471	134	816	256
10:00		70	15			101	23				
10:15		95	13			87	14				
10:30		82	28			90	23				
10:45		89	17	336	73	86	14	364	74	700	147
11:00		88	16			90	17				
11:15		94	14			98	5				
11:30		76	8			89	1				
11:45		85	5	343	43	85	6	362	29	705	72
Total		2298	3748			2316	4255			4614	8003
Combined Total		6046				6571				12617	
Percentage	0.0%										
Total Percent		4614	7343			4602	8345			9216	15688
		38.6%	61.4%			35.5%	64.5%			37.0%	63.0%
ADT		ADT 12,452	AADT 12,452								

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05171Bvolume
Site Code: 2192633

Start Time	01-May-19		EB		WB		Combined		02-Ma		EB		WB		Combined	
	Wed		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Thu		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00			2	99	1	94	3	193			5	92	5	107	10	199
12:15			5	106	1	82	6	188			6	86	4	96	10	182
12:30			5	79	2	93	7	172			6	100	3	93	9	193
12:45			1	90	1	92	2	182			1	88	1	101	2	189
01:00			0	95	2	56	2	151			2	89	0	81	2	170
01:15			3	82	3	108	6	190			3	94	3	94	6	188
01:30			1	99	1	83	2	182			2	113	2	107	4	220
01:45			1	113	1	102	2	215			1	85	2	113	3	198
02:00			0	103	1	99	1	202			2	121	0	80	2	201
02:15			1	93	2	86	3	179			0	93	0	115	0	208
02:30			2	112	1	117	3	229			0	113	1	123	1	236
02:45			0	97	0	140	0	237			0	101	0	158	0	259
03:00			1	91	0	137	1	228			0	111	0	151	0	262
03:15			1	125	4	123	5	248			2	138	3	112	5	250
03:30			2	117	2	131	4	248			3	128	2	126	5	254
03:45			1	91	4	102	5	193			1	123	2	126	3	249
04:00			1	123	3	133	4	256			5	114	3	158	8	272
04:15			4	92	3	116	7	208			3	101	5	136	8	237
04:30			3	104	8	143	11	247			0	115	6	143	6	258
04:45			3	101	10	157	13	258			3	93	8	146	11	239
05:00			4	100	7	148	11	248			10	111	14	173	24	284
05:15			16	100	15	133	31	233			10	123	10	152	20	275
05:30			14	108	15	171	29	279			7	123	18	174	25	297
05:45			16	130	33	161	49	291			22	136	29	164	51	300
06:00			32	105	24	144	56	249			24	125	32	153	56	278
06:15			35	95	29	112	64	207			31	111	33	150	64	261
06:30			75	76	38	111	113	187			73	94	40	103	113	197
06:45			89	97	52	124	141	221			88	76	48	72	136	148
07:00		90	104	69	102	159	206		124	89	72	72	196	161		
07:15		126	85	78	90	204	175		114	89	86	85	200	174		
07:30		123	64	102	79	225	143		150	71	81	87	231	158		
07:45		136	82	117	90	253	172		128	76	121	71	249	147		
08:00		81	64	152	65	233	129		105	41	116	38	221	79		
08:15		122	51	114	46	236	97		89	51	120	53	209	104		

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Eastbound		1	16	21	26	31	36	41	46	51	56	61	66	71	Total	85th	95th
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75		Percent	Percent	
05/01/19	0	0	0	2	8	3	0	0	0	0	0	0	0	0	13	36	38
01:00	0	0	0	0	2	3	0	0	0	0	0	0	0	0	5	38	39
02:00	0	0	0	0	0	2	1	0	0	0	0	0	0	0	3	42	44
03:00	0	0	0	1	2	1	0	1	0	0	0	0	0	0	5	46	48
04:00	0	0	0	0	5	4	2	0	0	0	0	0	0	0	11	40	43
05:00	0	0	1	6	17	20	5	1	0	0	0	0	0	0	50	39	43
06:00	3	1	4	43	113	57	8	1	1	1	0	0	0	0	231	37	39
07:00	12	8	32	173	198	47	4	1	0	0	0	0	0	0	475	34	38
08:00	12	5	58	171	140	45	7	0	1	1	0	0	0	0	439	34	38
09:00	11	2	10	128	164	45	4	1	0	0	0	0	0	0	365	34	38
10:00	8	5	17	104	150	53	5	0	0	0	0	0	0	0	342	35	38
11:00	12	1	18	117	163	61	4	1	0	0	0	0	0	0	377	35	38
12 PM	16	1	8	87	196	62	4	0	0	0	0	0	0	0	389	35	38
13:00	13	1	10	112	173	71	7	1	1	1	0	0	0	0	374	35	38
14:00	17	1	19	138	161	57	11	0	0	0	1	0	0	0	405	35	39
15:00	15	10	39	150	156	41	12	0	1	0	0	0	0	0	424	34	39
16:00	18	6	19	137	176	57	7	0	0	0	0	0	0	0	420	35	38
17:00	25	7	43	114	187	55	7	0	0	0	0	0	0	0	438	34	38
18:00	17	0	11	87	196	59	2	1	0	0	0	0	0	0	373	35	38
19:00	12	0	7	110	161	39	5	1	0	0	0	0	0	0	335	34	38
20:00	4	0	5	65	108	35	3	0	0	0	0	0	0	0	220	35	38
21:00	1	0	2	41	55	22	5	0	0	0	0	0	0	0	126	36	39
22:00	0	0	3	17	27	17	2	0	0	0	0	0	0	0	66	37	39
23:00	0	0	0	4	8	6	6	0	0	1	0	0	0	0	25	42	44
Total	196	48	306	1807	2566	862	111	9	5	1	0	0	0	0	5911		
Percent	3.3%	0.8%	5.2%	30.6%	43.4%	14.6%	1.9%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%				
AM Peak	07:00	07:00	08:00	07:00	07:00	11:00	06:00	03:00	06:00						07:00		
Vol.	12	8	58	173	198	61	8	1	1						475		
PM Peak	17:00	15:00	17:00	15:00	12:00	13:00	15:00	13:00	13:00	14:00					17:00		
Vol.	25	10	43	150	196	71	12	1	1	1					438		

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05171Bspeed
Site Code: 2192633

Eastbound		1	16	21	26	31	36	41	46	51	56	61	66	71	85th		95th	
Start	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	Total	Percent	Percent	
05/02/19		1	0	0	3	8	3	3	0	0	0	0	0	0	18	40	43	
01:00		0	0	1	1	2	3	1	0	0	0	0	0	0	8	39	42	
02:00		0	0	0	0	0	2	0	0	0	0	0	0	0	2	39	39	
03:00		0	0	0	0	3	1	1	1	0	0	0	0	0	6	45	48	
04:00		0	0	0	1	2	3	4	0	1	0	0	0	0	11	44	52	
05:00		1	0	0	4	19	22	2	1	0	0	0	0	0	49	39	41	
06:00		1	1	0	46	108	51	8	1	0	0	0	0	0	216	37	39	
07:00		21	4	43	191	194	56	7	0	0	0	0	0	0	516	34	38	
08:00		18	8	44	180	153	40	5	0	0	0	0	0	0	448	34	37	
09:00		14	1	20	107	156	46	1	0	0	0	0	0	0	345	34	38	
10:00		9	0	6	89	178	50	4	0	0	0	0	0	0	336	35	38	
11:00		13	1	29	119	132	35	13	1	0	0	0	0	0	343	34	39	
12 PM		11	1	19	109	160	61	5	0	0	0	0	0	0	366	35	38	
13:00		14	4	31	113	163	53	3	0	0	0	0	0	0	381	34	38	
14:00		27	5	58	143	152	37	5	0	0	1	0	0	0	428	34	37	
15:00		25	7	58	192	171	43	4	0	0	0	0	0	0	500	34	37	
16:00		17	6	39	158	145	50	7	1	0	0	0	0	0	423	34	38	
17:00		45	5	34	154	203	48	4	0	0	0	0	0	0	493	34	37	
18:00		22	15	36	119	168	37	9	0	0	0	0	0	0	406	34	38	
19:00		6	0	7	85	165	53	7	0	2	0	0	0	0	325	36	39	
20:00		4	1	15	76	71	21	0	0	0	0	0	0	0	188	34	37	
21:00		3	1	5	22	65	22	4	0	0	0	0	0	0	122	36	39	
22:00		0	0	2	12	39	16	3	1	0	0	0	0	0	73	37	40	
23:00		0	0	0	7	19	14	2	1	0	0	0	0	0	43	38	42	
Total		252	60	447	1931	2476	767	102	7	3	1	0	0	0	6046			
Percent		4.2%	1.0%	7.4%	31.9%	41.0%	12.7%	1.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak		07:00	08:00	08:00	07:00	07:00	07:00	11:00	03:00	04:00					07:00			
Vol.		21	8	44	191	194	56	13	1	1					516			
PM Peak		17:00	18:00	14:00	15:00	17:00	12:00	18:00	16:00	19:00	14:00				15:00			
Vol.		45	15	58	192	203	61	9	1	2	1				500			
Grand Total		448	108	753	3738	5042	1629	213	16	8	2	0	0	0	11957			
Percent		3.7%	0.9%	6.3%	31.3%	42.2%	13.6%	1.8%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%				

15th Percentile :		25 MPH
50th Percentile :		30 MPH
85th Percentile :		35 MPH
95th Percentile :		38 MPH
10 MPH Pace Speed :		26-35 MPH
Number in Pace :		8780
Percent in Pace :		73.4%
Number of Vehicles > 35 MPH :		1868
Percent of Vehicles > 35 MPH :		15.6%
Mean Speed(Average) :		31 MPH
Stats		

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Westbound		1	16	21	26	31	36	41	46	51	56	61	66	71	Total	85th	95th
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75		Percent	Percent	
05/01/19	0	0	0	1	0	2	2	2	0	0	0	0	0	0	5	43	44
01:00	0	0	0	2	4	0	0	0	0	0	0	0	0	0	7	34	43
02:00	0	0	0	0	1	2	2	0	1	0	0	0	0	0	4	47	49
03:00	0	0	0	1	3	4	4	2	0	0	0	0	0	0	10	41	43
04:00	0	0	1	2	3	5	11	1	1	1	0	0	0	0	24	44	49
05:00	1	0	0	1	18	26	21	2	2	1	0	0	0	0	70	43	44
06:00	4	0	7	11	51	58	11	1	1	0	0	0	0	0	143	39	42
07:00	23	11	13	86	167	167	58	8	0	0	0	0	0	0	366	35	39
08:00	26	4	13	110	227	114	114	9	3	1	0	0	0	0	507	37	39
09:00	11	1	15	106	178	97	16	16	3	1	1	0	0	0	429	37	39
10:00	18	0	9	80	155	80	13	13	0	0	0	0	0	0	356	37	39
11:00	19	2	6	70	163	92	11	11	2	0	0	0	0	0	365	37	39
12 PM	13	0	7	79	187	65	7	9	1	0	0	0	0	0	361	36	39
13:00	16	0	15	55	182	74	7	7	0	0	0	0	0	0	349	36	39
14:00	21	4	22	123	202	63	7	7	0	0	0	0	0	0	442	35	38
15:00	11	5	12	111	258	87	8	8	1	0	0	0	0	0	493	36	39
16:00	21	3	16	142	289	66	10	10	2	0	0	0	0	0	549	34	38
17:00	17	1	27	185	292	78	13	13	0	0	0	0	0	0	613	34	38
18:00	19	0	14	128	241	74	14	14	1	0	0	0	0	0	491	36	39
19:00	8	1	12	84	181	58	15	4	1	1	0	0	0	0	361	36	39
20:00	5	0	5	42	107	50	4	4	0	0	0	0	0	0	213	37	39
21:00	2	0	1	20	60	33	8	8	1	0	0	0	0	0	125	38	41
22:00	0	0	0	7	19	30	4	4	0	2	0	0	0	0	62	39	43
23:00	0	0	1	0	8	18	3	3	0	0	1	0	0	0	31	39	44
Total	235	32	196	1446	2996	1234	207	20	7	2	1	1	0	0	6376		
Percent	3.7%	0.5%	3.1%	22.7%	47.0%	19.4%	3.2%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	07:00	09:00	08:00	08:00	08:00	08:00	05:00	08:00	04:00	09:00	10:00			08:00		
Vol.	26	11	15	110	227	114	21	3	1	1	1	1			507		
PM Peak	14:00	15:00	17:00	17:00	17:00	15:00	19:00	16:00	22:00	23:00					17:00		
Vol.	21	5	27	185	292	87	15	2	2	1	1				613		

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west of Marshall Street

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Client: Bayside/K. Cram

05171Bspeed
Site Code: 2192633

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	Total	85th Percent	95th Percent
05/02/19	0	1	0	2	2	6	1	1	0	0	0	0	0	13	40	46
01:00	0	0	0	1	0	6	0	0	0	0	0	0	0	7	39	39
02:00	0	0	0	0	0	0	1	0	0	0	0	0	0	1	44	44
03:00	0	0	0	2	1	3	0	1	0	0	0	0	0	7	39	48
04:00	0	0	0	2	3	10	7	0	0	0	0	0	0	22	42	44
05:00	0	0	0	2	16	31	13	9	0	0	0	0	0	71	44	48
06:00	5	0	2	8	51	70	15	2	0	0	0	0	0	153	39	43
07:00	17	2	14	108	160	55	4	0	0	0	0	0	0	360	35	38
08:00	19	2	6	103	260	85	9	1	0	0	0	0	0	485	36	39
09:00	12	1	16	92	240	96	13	1	0	0	0	0	0	471	37	39
10:00	9	0	8	101	176	60	8	1	1	0	0	0	0	364	36	39
11:00	15	4	3	61	181	83	14	1	0	0	0	0	0	362	37	39
12 PM	17	0	6	104	191	68	10	1	0	0	0	0	0	397	36	39
13:00	14	2	2	92	194	83	8	0	0	0	0	0	0	395	36	39
14:00	20	6	15	155	227	46	6	1	0	0	0	0	0	476	34	38
15:00	19	3	34	124	258	74	3	0	0	0	0	0	0	515	34	38
16:00	23	0	14	142	304	90	9	1	0	0	0	0	0	583	35	38
17:00	40	15	38	204	288	72	6	0	0	0	0	0	0	663	34	38
18:00	28	10	21	157	201	54	6	1	0	0	0	0	0	478	34	38
19:00	9	1	7	63	170	59	5	1	0	0	0	0	0	315	36	39
20:00	5	1	5	42	93	45	5	0	0	0	0	0	0	196	37	39
21:00	2	0	2	21	76	30	3	0	0	0	0	0	0	134	37	39
22:00	0	0	0	15	27	28	4	0	0	0	0	0	0	74	38	40
23:00	0	0	0	1	10	11	5	1	1	0	0	0	0	29	42	47
Total	254	48	193	1602	3129	1165	155	23	2	0	0	0	0	6571		
Percent	3.9%	0.7%	2.9%	24.4%	47.6%	17.7%	2.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	11:00	09:00	07:00	08:00	09:00	06:00	05:00	10:00					08:00		
Vol.	19	4	16	108	260	96	15	9	1					485		
PM Peak	17:00	17:00	17:00	16:00	16:00	16:00	12:00	12:00	23:00					17:00		
Vol.	40	15	38	204	304	90	10	1	1					663		
Grand Total	489	80	389	3048	6125	2399	362	43	9	2	1	0	0	12947		
Percent	3.8%	0.6%	3.0%	23.5%	47.3%	18.5%	2.8%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 26 MPH
50th Percentile : 32 MPH
85th Percentile : 36 MPH
95th Percentile : 39 MPH

10 MPH Pace Speed : 26-35 MPH
Number in Pace : 9173
Percent in Pace : 70.9%
Number of Vehicles > 35 MPH : 2816
Percent of Vehicles > 35 MPH : 21.8%
Mean Speed(Average) : 32 MPH

Stats

Great Plain Avenue (Route 135)
west of Marshall Street
City, State: Needham, MA
Client: Bayside/K. Cram

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

Page 1
05171Bclass
Site Code: 2192633

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/01/19	0	10	3	0	0	0	0	0	0	0	0	0	0	13
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
03:00	0	1	2	0	1	1	0	0	0	0	0	0	0	5
04:00	0	8	0	1	2	0	0	0	0	0	0	0	0	11
05:00	1	35	6	0	6	0	0	0	2	0	0	0	0	50
06:00	3	167	39	7	9	4	0	1	1	0	0	0	0	231
07:00	4	408	47	5	6	2	0	2	1	0	0	0	0	475
08:00	4	335	68	10	20	2	0	0	0	0	0	0	0	439
09:00	5	275	61	3	14	5	1	1	0	0	0	0	0	365
10:00	2	280	45	3	7	3	0	0	2	0	0	0	0	342
11:00	5	277	67	3	12	4	0	7	2	0	0	0	0	377
12 PM	2	294	57	4	11	3	1	1	1	0	0	0	0	374
13:00	1	297	67	3	14	3	1	2	1	0	0	0	0	389
14:00	3	320	60	10	11	1	0	0	0	0	0	0	0	405
15:00	2	341	63	2	13	1	1	1	0	0	0	0	0	424
16:00	4	360	47	0	5	2	1	1	0	0	0	0	0	420
17:00	4	383	40	2	6	1	0	1	1	0	0	0	0	438
18:00	5	327	39	2	0	0	0	0	0	0	0	0	0	373
19:00	1	301	31	0	2	0	0	0	0	0	0	0	0	335
20:00	1	195	22	1	1	0	0	0	0	0	0	0	0	220
21:00	0	110	14	1	1	0	0	0	0	0	0	0	0	126
22:00	0	61	4	0	1	0	0	0	0	0	0	0	0	66
23:00	0	23	1	1	0	0	0	0	0	0	0	0	0	25
Day Total	47	4815	784	58	142	32	5	17	11	0	0	0	0	5911
Percent	0.8%	81.5%	13.3%	1.0%	2.4%	0.5%	0.1%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.	09:00 5	07:00 408	08:00 68	08:00 10	08:00 20	09:00 5	09:00 1	11:00 7	05:00 2					07:00 475
PM Peak Vol.	18:00 5	17:00 383	13:00 67	14:00 10	13:00 14	12:00 3	12:00 1	13:00 2	12:00 1					17:00 438

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

Great Plain Avenue (Route 135)
west of Marshall Street

City, State: Needham, MA
Client: Bayside/K. Cram

Eastbound

05171Bclass
Site Code: 2192633

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/02/19	0	17	1	0	0	0	0	0	0	0	0	0	0	18
01:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
02:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
03:00	0	3	1	1	1	0	0	0	0	0	0	0	0	6
04:00	0	7	2	0	1	1	0	0	0	0	0	0	0	11
05:00	0	37	6	0	3	1	0	0	2	0	0	0	0	49
06:00	1	160	38	4	8	3	0	1	1	0	0	0	0	216
07:00	2	404	87	5	16	1	0	1	0	0	0	0	0	516
08:00	4	364	56	6	13	4	0	1	0	0	0	0	0	448
09:00	3	265	57	2	14	4	0	0	0	0	0	0	0	345
10:00	2	264	48	1	17	2	0	2	0	0	0	0	0	336
11:00	1	261	55	2	20	1	0	2	1	0	0	0	0	343
12 PM	3	284	59	5	11	2	0	0	2	0	0	0	0	366
13:00	2	299	56	6	14	1	0	2	1	0	0	0	0	381
14:00	3	325	73	5	17	4	0	1	0	0	0	0	0	428
15:00	4	403	73	1	17	1	0	1	0	0	0	0	0	500
16:00	5	334	74	0	9	0	0	1	0	0	0	0	0	423
17:00	4	430	51	1	6	1	0	0	0	0	0	0	0	493
18:00	3	363	32	1	5	1	0	1	0	0	0	0	0	406
19:00	1	291	32	0	0	1	0	0	0	0	0	0	0	325
20:00	0	175	12	0	0	1	0	0	0	0	0	0	0	188
21:00	1	110	8	1	1	0	0	1	0	0	0	0	0	122
22:00	0	64	7	1	1	0	0	0	0	0	0	0	0	73
23:00	0	35	6	1	1	0	0	0	0	0	0	0	0	43

Day Total	39	4903	835	44	175	29	0	14	7	0	0	0	0	6046
Percent	0.6%	81.1%	13.8%	0.7%	2.9%	0.5%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	07:00	08:00	11:00	08:00		10:00	05:00					07:00
Vol.	4	404	87	6	20	4		2	2					516

PM Peak	16:00	17:00	16:00	13:00	14:00	14:00		13:00	12:00					15:00
Vol.	5	430	74	6	17	4		2	2					500

Grand Total	86	9718	1619	102	317	61	5	31	18	0	0	0	0	11957
Percent	0.7%	81.3%	13.5%	0.9%	2.7%	0.5%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	

Great Plain Avenue (Route 135)
west of Marshall Street
City, State: Needham, MA
Client: Bayside/K. Cram

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

Page 3
05171Bclass
Site Code: 2192633

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/01/19	0	5	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	6	0	0	1	0	0	0	0	0	0	0	0	7
02:00	0	2	1	0	1	0	0	0	0	0	0	0	0	4
03:00	0	5	2	2	1	0	0	0	0	0	0	0	0	10
04:00	0	21	2	1	0	0	0	0	0	0	0	0	0	24
05:00	0	52	10	1	5	0	0	1	1	0	0	0	0	70
06:00	1	97	29	2	11	0	0	0	3	0	0	0	0	143
07:00	2	257	62	6	25	6	0	7	1	0	0	0	0	366
08:00	2	390	77	9	24	3	2	0	0	0	0	0	0	507
09:00	1	301	82	9	30	1	1	1	3	0	0	0	0	429
10:00	2	265	56	6	17	4	1	2	3	0	0	0	0	356
11:00	4	257	73	6	20	0	2	2	1	0	0	0	0	365
12 PM	4	271	59	1	18	5	2	1	0	0	0	0	0	361
13:00	1	278	46	3	15	4	1	1	0	0	0	0	0	349
14:00	5	350	64	4	17	1	0	1	0	0	0	0	0	442
15:00	2	378	85	8	19	1	0	0	0	0	0	0	0	493
16:00	3	437	92	0	14	1	0	2	0	0	0	0	0	549
17:00	3	508	89	1	10	2	0	0	0	0	0	0	0	613
18:00	5	412	68	1	4	1	0	0	0	0	0	0	0	491
19:00	2	302	48	1	7	1	0	0	0	0	0	0	0	361
20:00	1	181	30	0	1	0	0	0	0	0	0	0	0	213
21:00	0	109	13	1	1	0	0	1	0	0	0	0	0	125
22:00	0	55	6	0	1	0	0	0	0	0	0	0	0	62
23:00	0	24	6	0	1	0	0	0	0	0	0	0	0	31
Day Total	38	4963	1000	62	243	30	9	19	12	0	0	0	0	6376
Percent	0.6%	77.8%	15.7%	1.0%	3.8%	0.5%	0.1%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.	11:00	08:00	09:00	08:00	09:00	07:00	08:00	07:00	06:00					08:00
	4	390	82	9	30	6	2	7	3					507
PM Peak Vol.	14:00	17:00	16:00	15:00	15:00	12:00	12:00	16:00						17:00
	5	508	92	8	19	5	2	2						613

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

Great Plain Avenue (Route 135)
west of Marshall Street

City, State: Needham, MA
Client: Bayside/ K. Cram

05171Bclass
Site Code: 2192633

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/02/19	0	9	3	0	1	0	0	0	0	0	0	0	0	13
01:00	0	5	0	0	1	1	0	0	0	0	0	0	0	7
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	4	1	1	1	0	0	0	0	0	0	0	0	7
04:00	0	21	0	0	1	0	0	0	0	0	0	0	0	22
05:00	1	51	10	1	4	1	0	0	3	0	0	0	0	71
06:00	0	111	31	0	6	4	0	0	1	0	0	0	0	153
07:00	1	255	62	9	24	3	0	5	1	0	0	0	0	360
08:00	2	362	95	5	18	2	1	0	0	0	0	0	0	485
09:00	4	340	97	2	23	2	1	2	0	0	0	0	0	471
10:00	2	267	66	3	19	4	1	1	1	0	0	0	0	364
11:00	1	266	63	2	23	3	1	2	1	0	0	0	0	362
12 PM	3	297	70	1	22	1	0	2	1	0	0	0	0	397
13:00	4	296	63	5	19	4	1	2	1	0	0	0	0	395
14:00	2	348	103	2	16	3	0	0	2	0	0	0	0	476
15:00	1	374	106	6	25	2	0	1	0	0	0	0	0	515
16:00	4	474	85	1	12	5	0	2	0	0	0	0	0	583
17:00	4	546	97	0	13	2	0	1	0	0	0	0	0	663
18:00	3	388	74	0	11	1	0	0	1	0	0	0	0	478
19:00	2	248	55	0	7	1	0	2	0	0	0	0	0	315
20:00	1	172	19	0	4	0	0	0	0	0	0	0	0	196
21:00	1	116	14	0	3	0	0	0	0	0	0	0	0	134
22:00	0	66	4	1	3	0	0	0	0	0	0	0	0	74
23:00	0	27	1	0	1	0	0	0	0	0	0	0	0	29
Day Total	36	5044	1119	39	257	39	5	20	12	0	0	0	0	6571
Percent	0.5%	76.8%	17.0%	0.6%	3.9%	0.6%	0.1%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.	09:00	08:00	09:00	07:00	07:00	06:00	08:00	07:00	05:00	0.0%	0.0%	0.0%	0.0%	08:00 485
	4	362	97	9	24	4	1	5	3					
PM Peak Vol.	13:00	17:00	15:00	15:00	15:00	16:00	13:00	12:00	14:00	0.0%	0.0%	0.0%	0.0%	17:00 663
	4	546	106	6	25	5	1	2	2					
Grand Total	74	10007	2119	101	500	69	14	39	24	0	0	0	0	12947
Percent	0.6%	77.3%	16.4%	0.8%	3.9%	0.5%	0.1%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	

Walnut Street
west of Willow Street
City, State: Needham, MA
Client: Bayside / K. Cram

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

05171AVOLUME
Site Code: 2192633

Start Time	01-May-19 Wed	EB		Hour Totals		WB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		0	1			0	1				
12:15		0	4			1	2				
12:30		0	1			0	4				
12:45		0	1	0	7	0	5	1	12	1	19
01:00		0	4			0	1				
01:15		0	6			0	2				
01:30		0	1			0	2				
01:45		0	2	0	13	0	0	0	5	0	18
02:00		0	2			0	4				
02:15		0	2			0	5				
02:30		0	7			0	2				
02:45		0	4	0	15	0	4	0	15	0	30
03:00		0	0			0	2				
03:15		0	4			0	3				
03:30		0	5			0	4				
03:45		0	3	0	12	0	5	0	14	0	26
04:00		0	1			0	2				
04:15		0	5			0	3				
04:30		0	1			0	8				
04:45		1	0	1	7	0	4	0	17	1	24
05:00		0	1			0	0				
05:15		0	4			0	4				
05:30		1	3			0	7				
05:45		1	4	2	12	0	6	0	17	2	29
06:00		2	0			0	4				
06:15		3	6			0	3				
06:30		2	2			1	2				
06:45		3	1	10	9	0	3	1	12	11	21
07:00		3	0			0	5				
07:15		8	4			4	0				
07:30		22	3			9	3				
07:45		9	1	42	8	4	2	17	10	59	18
08:00		7	1			1	2				
08:15		9	1			3	1				
08:30		7	1			7	1				
08:45		6	1	29	4	7	3	18	7	47	11
09:00		4	0			4	0				
09:15		6	0			0	3				
09:30		3	1			1	3				
09:45		2	0	15	1	2	0	7	6	22	7
10:00		2	1			1	1				
10:15		1	0			0	0				
10:30		2	0			2	1				
10:45		1	0	6	1	2	1	5	3	11	4
11:00		10	0			1	0				
11:15		0	0			1	0				
11:30		0	0			5	0				
11:45		3	0	13	0	2	0	9	0	22	0
Total		118	89			58	118			176	207
Combined Total		207				176				383	
Percentage	0.0%										

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

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Page 2

Walnut Street
west of Willow Street
City, State: Needham, MA
Client: Bayside/K. Cram

05171AVOLUME
Site Code: 2192633

Start Time	02-May-19 Thu	EB		Hour Totals		WB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		1	7			0	5				
12:15		0	8			2	1				
12:30		0	2			0	3				
12:45		0	2	1	19	0	2	2	11	3	30
01:00		0	3			0	2				
01:15		0	1			0	4				
01:30		0	6			0	4				
01:45		0	2	0	12	0	0	0	10	0	22
02:00		0	3			0	0				
02:15		0	6			0	4				
02:30		0	4			0	8				
02:45		0	5	0	18	0	10	0	22	0	40
03:00		0	4			0	9				
03:15		0	5			0	2				
03:30		0	5			0	3				
03:45		0	4	0	18	0	1	0	15	0	33
04:00		0	5			0	5				
04:15		0	3			0	5				
04:30		0	2			0	4				
04:45		1	4	1	14	0	3	0	17	1	31
05:00		0	5			0	3				
05:15		1	4			0	9				
05:30		2	2			0	7				
05:45		1	2	4	13	0	2	0	21	4	34
06:00		2	2			0	5				
06:15		0	3			0	3				
06:30		2	4			0	5				
06:45		2	4	6	13	2	1	2	14	8	27
07:00		4	1			2	4				
07:15		5	2			3	3				
07:30		16	2			4	2				
07:45		16	1	41	6	8	3	17	12	58	18
08:00		8	0			1	4				
08:15		11	2			2	4				
08:30		14	1			5	2				
08:45		4	0	37	3	1	1	9	11	46	14
09:00		4	1			3	2				
09:15		13	1			1	1				
09:30		13	0			1	2				
09:45		13	4	43	6	4	3	9	8	52	14
10:00		5	1			4	3				
10:15		7	0			5	0				
10:30		11	0			2	0				
10:45		9	0	32	1	2	0	13	3	45	4
11:00		7	0			1	0				
11:15		9	0			8	0				
11:30		10	0			4	0				
11:45		4	0	30	0	3	0	16	0	46	0
Total		195	123			68	144			263	267
Combined Total		318				212				530	
Percentage	0.0%										
Total Percent		313	212			126	262			439	474
		59.6%	40.4%			32.5%	67.5%			48.1%	51.9%
ADT		ADT 456		AADT 456							

Walnut Street
west of Willow Street
City, State: Needham, MA
Client: Bayside / K. Cram

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05171AVOLUME
Site Code: 2192633

Start Time	01-May-19		EB		WB		Combined		02-Ma		EB		WB		Combined	
	Wed		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Thu		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00			0	1	0	1	0	2			1	7	0	5	1	12
12:15			0	4	1	2	1	6			0	8	2	1	2	9
12:30			0	1	0	4	0	5			0	2	0	3	0	5
12:45			0	1	0	5	0	6			0	2	0	2	0	4
01:00			0	4	0	1	0	5			0	3	0	2	0	5
01:15			0	6	0	2	0	8			0	1	0	4	0	5
01:30			0	1	0	2	0	3			0	6	0	4	0	10
01:45			0	2	0	0	0	2			0	2	0	0	0	2
02:00			0	2	0	4	0	6			0	3	0	0	0	3
02:15			0	2	0	5	0	7			0	6	0	4	0	10
02:30			0	7	0	2	0	9			0	4	0	8	0	12
02:45			0	4	0	4	0	8			0	5	0	10	0	15
03:00			0	0	0	2	0	2			0	4	0	9	0	13
03:15			0	4	0	3	0	7			0	5	0	2	0	7
03:30			0	5	0	4	0	9			0	5	0	3	0	8
03:45			0	3	0	5	0	8			0	4	0	1	0	5
04:00			0	1	0	2	0	3			0	5	0	5	0	10
04:15			0	5	0	3	0	8			0	3	0	5	0	8
04:30			0	1	0	8	0	9			0	2	0	4	0	6
04:45			1	0	0	4	1	4			1	4	0	3	1	7
05:00			0	1	0	0	0	1			0	5	0	3	0	8
05:15			0	4	0	4	0	8			1	4	0	9	1	13
05:30			1	3	0	7	1	10			2	2	0	7	2	9
05:45			1	4	0	6	1	10			1	2	0	2	1	4
06:00			2	0	0	4	2	4			2	2	0	5	2	7
06:15			3	6	0	3	3	9			0	3	0	3	0	6
06:30			2	2	1	2	3	4			2	4	0	5	2	9
06:45			3	1	0	3	3	4			2	4	2	1	4	5
07:00			3	0	0	5	3	5			4	1	2	4	6	5
07:15			8	4	4	0	12	4			5	2	3	3	8	5
07:30		22	3	9	3	31	6		16	2	4	2	20	4		
07:45		9	1	4	2	13	3		16	1	8	3	24	4		
08:00		7	1	1	2	8	3		8	0	1	4	9	4		
08:15		9	1	3	1	12	2		11	2	2	4	13	6		
08:30		7	1	7	1	14	2		14	1	5	2	19	3		
08:45		6	1	7	3	13	4		4	0	1	1	5	1		
09:00		4	0	4	0	8	0		4	1	3	2	7	3		
09:15		6	0	0	3	6	3		13	1	1	1	14	2		

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

05171Aspeed
Site Code: 2192633

Walnut Street
west of Willow Street
City, State: Needham, MA
Client: Bayside/K. Cram

Eastbound		1	16	21	26	31	36	41	46	51	56	61	66	71	Total	85th Percent	95th Percent
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	75			
05/01/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	19	19
05:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	24	24
06:00	3	3	2	2	0	0	0	0	0	0	0	0	0	0	10	26	28
07:00	12	4	11	12	2	1	0	0	0	0	0	0	0	0	42	28	32
08:00	4	3	10	10	2	0	0	0	0	0	0	0	0	0	29	28	31
09:00	5	3	2	3	1	1	0	0	0	0	0	0	0	0	15	29	36
10:00	2	0	2	1	1	0	0	0	0	0	0	0	0	0	6	30	33
11:00	5	1	5	2	0	0	0	0	0	0	0	0	0	0	13	25	28
12 PM	4	1	2	0	0	0	0	0	0	0	0	0	0	0	7	22	24
13:00	6	3	4	0	0	0	0	0	0	0	0	0	0	0	13	22	24
14:00	6	4	2	3	0	0	0	0	0	0	0	0	0	0	15	26	28
15:00	8	1	2	1	0	0	0	0	0	0	0	0	0	0	12	22	26
16:00	0	1	4	1	1	0	0	0	0	0	0	0	0	0	7	29	33
17:00	4	1	3	4	0	0	0	0	0	0	0	0	0	0	12	27	29
18:00	6	0	2	0	1	0	0	0	0	0	0	0	0	0	9	24	32
19:00	2	3	2	1	0	0	0	0	0	0	0	0	0	0	8	24	27
20:00	1	1	2	0	0	0	0	0	0	0	0	0	0	0	4	23	24
21:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12	14
22:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	24	24
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	69	30	58	40	8	2	0	0	0	0	0	0	0	0	207		
Percent	33.3%	14.5%	28.0%	19.3%	3.9%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	07:00	07:00	07:00	07:00	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	07:00		
Vol.	12	4	11	12	2	1									42		
PM Peak	15:00	14:00	13:00	17:00	16:00										14:00		
Vol.	8	4	4	4	1										15		

Walnut Street
west of Willow Street
City, State: Needham, MA
Client: Bayside/K. Cram

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

Page 2
05171Aspeed
Site Code: 2192633

[illegible]

Stats	10 MPH Pace Speed :	21-30 MPH
	Number in Pace :	279
	Percent in Pace :	53.0%
	Number of Vehicles > 25 MPH :	135
	Percent of Vehicles > 25 MPH :	25.7%
	Mean Speed(Average) :	20 MPH

Walnut Street
west of Willow Street
City, State: Needham, MA
Client: Bayside/K. Cram
westbound

[illegible]

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

05171Aclass
Site Code: 2192633

Walnut Street
west of Willow Street
City, State: Needham, MA
Client: Bayside/K. Cram
Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/01/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
06:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
07:00	1	37	3	0	1	0	0	0	0	0	0	0	0	42
08:00	0	24	3	2	0	0	0	0	0	0	0	0	0	29
09:00	2	12	1	0	0	0	0	0	0	0	0	0	0	15
10:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
11:00	1	9	0	0	1	2	0	0	0	0	0	0	0	13
12 PM	1	6	0	0	0	0	0	0	0	0	0	0	0	7
13:00	2	11	0	0	0	0	0	0	0	0	0	0	0	13
14:00	0	13	1	0	1	0	0	0	0	0	0	0	0	15
15:00	0	7	2	1	1	1	0	0	0	0	0	0	0	12
16:00	0	5	1	0	1	0	0	0	0	0	0	0	0	7
17:00	0	9	1	0	2	0	0	0	0	0	0	0	0	12
18:00	1	7	0	0	0	1	0	0	0	0	0	0	0	9
19:00	0	4	3	1	0	0	0	0	0	0	0	0	0	8
20:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	8	168	16	4	7	4	0	0	0	0	0	0	0	207
Percent	3.9%	81.2%	7.7%	1.9%	3.4%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	07:00	07:00	08:00	07:00	11:00								07:00
Vol.	2	37	3	2	1	2								42
PM Peak	13:00	14:00	19:00	15:00	17:00	15:00								14:00
Vol.	2	13	3	1	2	1								15

Walnut Street
west of Willow Street
City, State: Needham, MA
Client: Bayside/K. Cram

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/02/19	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
06:00	0	4	1	0	0	1	0	0	0	0	0	0	0	6
07:00	1	33	5	0	1	0	0	1	0	0	0	0	0	41
08:00	0	30	6	0	1	0	0	0	0	0	0	0	0	37
09:00	1	34	4	1	3	0	0	0	0	0	0	0	0	43
10:00	0	25	5	0	2	0	0	0	0	0	0	0	0	32
11:00	1	20	7	0	0	1	0	1	0	0	0	0	0	30
12 PM	0	14	4	0	1	0	0	0	0	0	0	0	0	19
13:00	1	10	1	0	0	0	0	0	0	0	0	0	0	12
14:00	0	13	3	1	1	0	0	0	0	0	0	0	0	18
15:00	0	14	2	0	2	0	0	0	0	0	0	0	0	18
16:00	1	8	5	0	0	0	0	0	0	0	0	0	0	14
17:00	0	13	0	0	0	0	0	0	0	0	0	0	0	13
18:00	0	10	1	2	0	0	0	0	0	0	0	0	0	13
19:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
20:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
21:00	0	4	0	1	1	0	0	0	0	0	0	0	0	6
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	5	246	46	5	12	2	0	2	0	0	0	0	0	318
Percent	1.6%	77.4%	14.5%	1.6%	3.8%	0.6%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.	07:00 1	09:00 34	11:00 7	09:00 1	09:00 3	06:00 1		07:00 1						09:00 43
PM Peak Vol.	13:00 1	12:00 14	16:00 5	18:00 2	15:00 2									12:00 19
Grand Total	13	414	62	9	19	6	0	2	0	0	0	0	0	525
Percent	2.5%	78.9%	11.8%	1.7%	3.6%	1.1%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

05171Aclass
Site Code: 2192633

Walnut Street
west of Willow Street
City, State: Needham, MA
Client: Bayside/K. Cram
Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/01/19	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	1	14	2	0	0	0	0	0	0	0	0	0	0	17
08:00	0	12	4	1	0	1	0	0	0	0	0	0	0	18
09:00	0	4	3	0	0	0	0	0	0	0	0	0	0	7
10:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
11:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
12 PM	0	9	2	0	1	0	0	0	0	0	0	0	0	12
13:00	0	4	0	0	0	1	0	0	0	0	0	0	0	5
14:00	0	11	3	0	1	0	0	0	0	0	0	0	0	15
15:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
16:00	0	17	0	0	0	0	0	0	0	0	0	0	0	17
17:00	2	13	1	0	1	0	0	0	0	0	0	0	0	17
18:00	1	9	1	0	0	1	0	0	0	0	0	0	0	12
19:00	1	9	0	0	0	0	0	0	0	0	0	0	0	10
20:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
21:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
22:00	1	1	1	0	0	0	0	0	0	0	0	0	0	3
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	6	143	20	1	3	3	0	0	0	0	0	0	0	176
Percent	3.4%	81.3%	11.4%	0.6%	1.7%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	08:00	08:00		08:00								08:00
Vol.	1	14	4	1		1								18
PM Peak	17:00	16:00	14:00		12:00	13:00								16:00
Vol.	2	17	3		1	1								17

Walnut Street
west of Willow Street
City, State: Needham, MA
Client: Bayside/K. Cram

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

Page 4
05171Aclass
Site Code: 2192633

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/02/19	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	1	0	0	0	1	0	0	0	0	0	0	0	2
07:00	1	13	3	0	0	0	0	0	0	0	0	0	0	17
08:00	0	3	4	2	0	0	0	0	0	0	0	0	0	9
09:00	1	7	0	0	1	0	0	0	0	0	0	0	0	9
10:00	1	8	2	0	1	1	0	0	0	0	0	0	0	13
11:00	1	12	0	0	2	0	0	1	0	0	0	0	0	16
12 PM	0	7	3	0	1	0	0	0	0	0	0	0	0	11
13:00	2	7	1	0	0	0	0	0	0	0	0	0	0	10
14:00	0	18	3	0	1	0	0	0	0	0	0	0	0	22
15:00	0	10	1	2	2	0	0	0	0	0	0	0	0	15
16:00	0	13	3	1	0	0	0	0	0	0	0	0	0	17
17:00	0	18	3	0	0	0	0	0	0	0	0	0	0	21
18:00	2	10	2	0	0	0	0	0	0	0	0	0	0	14
19:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
20:00	0	7	4	0	0	0	0	0	0	0	0	0	0	11
21:00	0	7	0	0	1	0	0	0	0	0	0	0	0	8
22:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	8	158	29	5	9	2	0	1	0	0	0	0	0	212
Percent	3.8%	74.5%	13.7%	2.4%	4.2%	0.9%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.	07:00 1	07:00 13	08:00 4	08:00 2	11:00 2	06:00 1		11:00 1						07:00 17
PM Peak Vol.	13:00 2	14:00 18	20:00 4	15:00 2	15:00 2									14:00 22
Grand Total	14	301	49	6	12	5	0	1	0	0	0	0	0	388
Percent	3.6%	77.6%	12.6%	1.5%	3.1%	1.3%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Gage Street/Marked Tree Road
E/W: Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171A
Site Code : 2192633
Start Date : 5/2/2019
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	5	0	60	10	0	25	0	9	4	1	101	1	0	216
07:15 AM	2	0	0	5	0	87	8	0	21	1	12	0	4	95	0	0	235
07:30 AM	3	0	0	2	0	78	7	0	24	0	15	0	4	136	0	0	269
07:45 AM	1	0	1	5	0	112	11	0	15	0	18	2	2	116	0	0	283
Total	6	0	1	17	0	337	36	0	85	1	54	6	11	448	1	0	1003
08:00 AM	1	0	0	1	0	110	7	0	11	0	13	0	0	95	0	0	238
08:15 AM	1	0	0	1	0	113	12	0	12	0	12	0	4	86	0	0	241
08:30 AM	0	0	0	2	0	112	12	0	12	0	21	1	3	110	0	0	273
08:45 AM	1	0	1	0	0	117	10	0	13	0	17	0	0	111	1	0	271
Total	3	0	1	4	0	452	41	0	48	0	63	1	7	402	1	0	1023
Grand Total	9	0	2	21	0	789	77	0	133	1	117	7	18	850	2	0	2026
Apprch %	28.1	0	6.2	65.6	0	91.1	8.9	0	51.6	0.4	45.3	2.7	2.1	97.7	0.2	0	
Total %	0.4	0	0.1	1	0	38.9	3.8	0	6.6	0	5.8	0.3	0.9	42	0.1	0	
Cars & Peds	8	0	1	21	0	757	72	0	132	1	117	7	18	817	1	0	1952
% Cars & Peds	88.9	0	50	100	0	95.9	93.5	0	99.2	100	100	100	100	96.1	50	0	96.3
Trucks & Buses	1	0	1	0	0	31	5	0	1	0	0	0	0	26	1	0	66
% Trucks & Buses	11.1	0	50	0	0	3.9	6.5	0	0.8	0	0	0	0	3.1	50	0	3.3
Bikes by Direction	0	0	0	0	0	1	0	0	0	0	0	0	0	7	0	0	8
% Bikes by Direction	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.8	0	0	0.4

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	1	0	1	5	7	0	112	11	0	123	15	0	18	2	35	2	116	0	0	118	283
08:00 AM	1	0	0	1	2	0	110	7	0	117	11	0	13	0	24	0	95	0	0	95	238
08:15 AM	1	0	0	1	2	0	113	12	0	125	12	0	12	0	24	4	86	0	0	90	241
08:30 AM	0	0	0	2	2	0	112	12	0	124	12	0	21	1	34	3	110	0	0	113	273
Total Volume	3	0	1	9	13	0	447	42	0	489	50	0	64	3	117	9	407	0	0	416	1035
% App. Total	23.1	0	7.7	69.2		0	91.4	8.6	0		42.7	0	54.7	2.6		2.2	97.8	0	0		
PHF	.750	.000	.250	.450	.464	.000	.989	.875	.000	.978	.833	.000	.762	.375	.836	.563	.877	.000	.000	.881	.914
Cars & Peds	2	0	0	9	11	0	430	41	0	471	49	0	64	3	116	9	389	0	0	398	996
% Cars & Peds	66.7	0	0	100	84.6	0	96.2	97.6	0	96.3	98.0	0	100	100	99.1	100	95.6	0	0	95.7	96.2
Trucks & Buses	1	0	1	0	2	0	16	1	0	17	1	0	0	0	1	0	15	0	0	15	35
% Trucks & Buses	33.3	0	100	0	15.4	0	3.6	2.4	0	3.5	2.0	0	0	0	0.9	0	3.7	0	0	3.6	3.4
Bikes by Direction	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
% Bikes by Direction	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.7	0	0	0.7	0.4

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Gage Street/Marked Tree Road
E/W: Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171A
Site Code : 2192633
Start Date : 5/2/2019
Page No : 1

Groups Printed- Cars & Peds

	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	5	0	56	9	0	25	0	9	4	1	97	0	0	206
07:15 AM	2	0	0	5	0	83	6	0	21	1	12	0	4	91	0	0	225
07:30 AM	3	0	0	2	0	73	6	0	24	0	15	0	4	131	0	0	258
07:45 AM	0	0	0	5	0	105	11	0	15	0	18	2	2	112	0	0	270
Total	5	0	0	17	0	317	32	0	85	1	54	6	11	431	0	0	959
08:00 AM	1	0	0	1	0	107	7	0	11	0	13	0	0	93	0	0	233
08:15 AM	1	0	0	1	0	108	12	0	12	0	12	0	4	80	0	0	230
08:30 AM	0	0	0	2	0	110	11	0	11	0	21	1	3	104	0	0	263
08:45 AM	1	0	1	0	0	115	10	0	13	0	17	0	0	109	1	0	267
Total	3	0	1	4	0	440	40	0	47	0	63	1	7	386	1	0	993
Grand Total	8	0	1	21	0	757	72	0	132	1	117	7	18	817	1	0	1952
Apprch %	26.7	0	3.3	70	0	91.3	8.7	0	51.4	0.4	45.5	2.7	2.2	97.7	0.1	0	
Total %	0.4	0	0.1	1.1	0	38.8	3.7	0	6.8	0.1	6	0.4	0.9	41.9	0.1	0	

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	5	5	0	105	11	0	116	15	0	18	2	35	2	112	0	0	114	270
08:00 AM	1	0	0	1	2	0	107	7	0	114	11	0	13	0	24	0	93	0	0	93	233
08:15 AM	1	0	0	1	2	0	108	12	0	120	12	0	12	0	24	4	80	0	0	84	230
08:30 AM	0	0	0	2	2	0	110	11	0	121	11	0	21	1	33	3	104	0	0	107	263
Total Volume	2	0	0	9	11	0	430	41	0	471	49	0	64	3	116	9	389	0	0	398	996
% App. Total	18.2	0	0	81.8		0	91.3	8.7	0		42.2	0	55.2	2.6		2.3	97.7	0	0		
PHF	.500	.000	.000	.450	.550	.000	.977	.854	.000	.973	.817	.000	.762	.375	.829	.563	.868	.000	.000	.873	.922

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Gage Street/Marked Tree Road
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City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171A
Site Code : 2192633
Start Date : 5/2/2019
Page No : 1

Groups Printed- Trucks & Buses

	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	4	1	0	0	0	0	0	0	3	1	0	9
07:15 AM	0	0	0	0	0	4	2	0	0	0	0	0	0	2	0	0	8
07:30 AM	0	0	0	0	0	5	1	0	0	0	0	0	0	4	0	0	10
07:45 AM	1	0	1	0	0	7	0	0	0	0	0	0	0	3	0	0	12
Total	1	0	1	0	0	20	4	0	0	0	0	0	0	12	1	0	39
08:00 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	5
08:15 AM	0	0	0	0	0	4	0	0	0	0	0	0	0	5	0	0	9
08:30 AM	0	0	0	0	0	2	1	0	1	0	0	0	0	5	0	0	9
08:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	4
Total	0	0	0	0	0	11	1	0	1	0	0	0	0	14	0	0	27
Grand Total	1	0	1	0	0	31	5	0	1	0	0	0	0	26	1	0	66
Apprch %	50	0	50	0	0	86.1	13.9	0	100	0	0	0	0	96.3	3.7	0	
Total %	1.5	0	1.5	0	0	47	7.6	0	1.5	0	0	0	0	39.4	1.5	0	

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	3	1	0	4	9
07:15 AM	0	0	0	0	0	0	4	2	0	6	0	0	0	0	0	0	2	0	0	2	8
07:30 AM	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	0	4	0	0	4	10
07:45 AM	1	0	1	0	2	0	7	0	0	7	0	0	0	0	0	0	3	0	0	3	12
Total Volume	1	0	1	0	2	0	20	4	0	24	0	0	0	0	0	0	12	1	0	13	39
% App. Total	50	0	50	0		0	83.3	16.7	0		0	0	0	0		0	92.3	7.7	0		
PHF	.250	.000	.250	.000	.250	.000	.714	.500	.000	.857	.000	.000	.000	.000	.000	.000	.750	.250	.000	.813	.813

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

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City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171A
Site Code : 2192633
Start Date : 5/2/2019
Page No : 1

Groups Printed- Bikes by Direction

	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
Grand Total	0	0	0	0	0	1	0	0	0	0	0	0	0	7	0	0	8
Apprch %	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	12.5	0	0	0	0	0	0	0	87.5	0	0	

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.625	.000	.000	.625	.625

Transportation Data Corporation

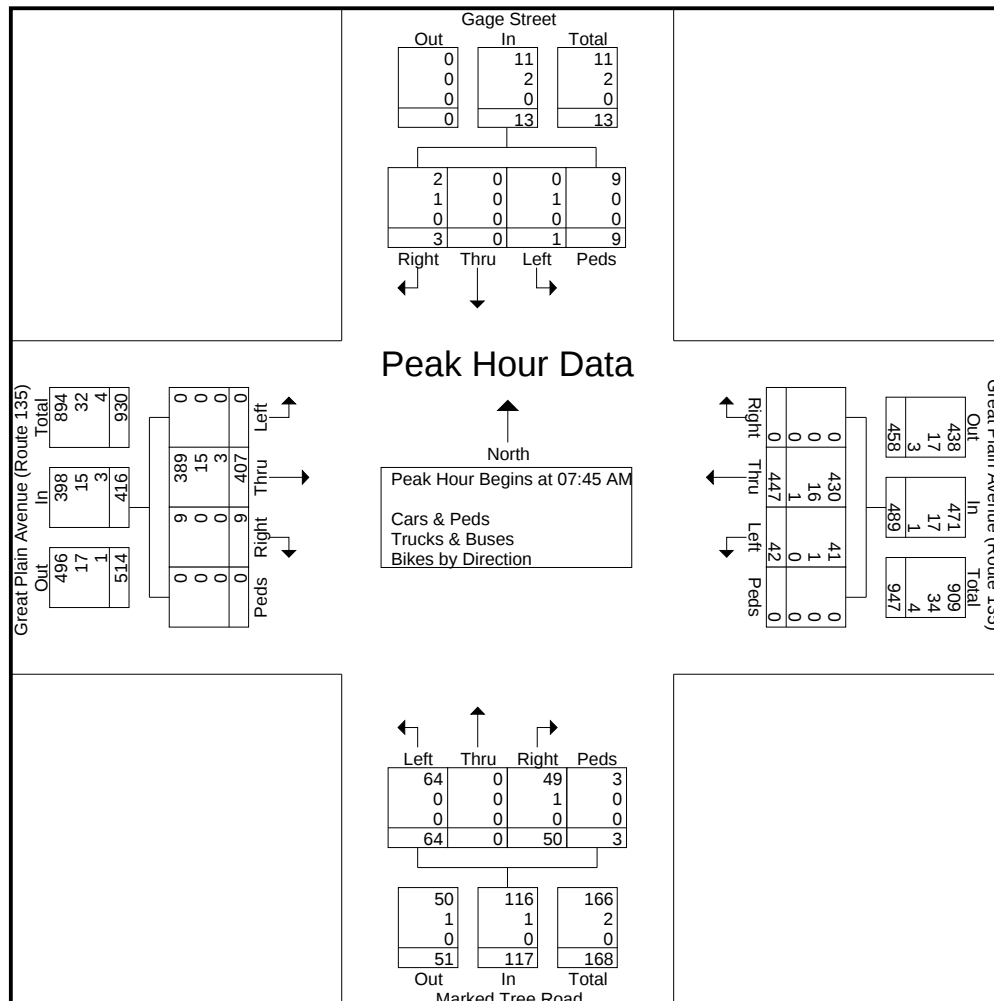
Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Gage Street/Marked Tree Road
E/W: Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171A
Site Code : 2192633
Start Date : 5/2/2019
Page No : 1

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) 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 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	1	0	1	5	7	0	112	11	0	123	15	0	18	2	35	2	116	0	0	118	283
08:00 AM	1	0	0	1	2	0	110	7	0	117	11	0	13	0	24	0	95	0	0	95	238
08:15 AM	1	0	0	1	2	0	113	12	0	125	12	0	12	0	24	4	86	0	0	90	241
08:30 AM	0	0	0	2	2	0	112	12	0	124	12	0	21	1	34	3	110	0	0	113	273
Total Volume	3	0	1	9	13	0	447	42	0	489	50	0	64	3	117	9	407	0	0	416	1035
% App. Total	23.1	0	7.7	69.2		0	91.4	8.6	0		42.7	0	54.7	2.6		2.2	97.8	0	0		
PHF	.750	.000	.250	.450	.464	.000	.989	.875	.000	.978	.833	.000	.762	.375	.836	.563	.877	.000	.000	.881	.914
Cars & Peds	2	0	0	9	11	0	430	41	0	471	49	0	64	3	116	9	389	0	0	398	996
% Cars & Peds	66.7	0	0	100	84.6	0	96.2	97.6	0	96.3	98.0	0	100	100	99.1	100	95.6	0	0	95.7	96.2
Trucks & Buses	1	0	1	0	2	0	16	1	0	17	1	0	0	0	1	0	15	0	0	15	35
% Trucks & Buses	33.3	0	100	0	15.4	0	3.6	2.4	0	3.5	2.0	0	0	0	0.9	0	3.7	0	0	3.6	3.4
Bikes by Direction	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
% Bikes by Direction	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.7	0	0	0.7	0.4



Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

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City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171AA
Site Code : 2192633
Start Date : 5/2/2019
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	1	0	117	40	0	10	0	4	0	15	112	0	0	299
04:15 PM	1	0	0	0	0	90	53	0	17	0	7	1	15	101	0	0	285
04:30 PM	0	0	0	1	0	102	38	1	11	0	5	1	10	96	0	0	265
04:45 PM	0	2	0	3	0	109	51	0	11	0	9	0	15	91	0	0	291
Total	1	2	0	5	0	418	182	1	49	0	25	2	55	400	0	0	1140
05:00 PM	2	1	1	1	0	120	56	0	15	0	6	0	19	92	0	0	313
05:15 PM	1	0	0	1	0	109	65	0	15	0	5	0	20	112	0	0	328
05:30 PM	2	0	0	1	0	122	58	0	19	0	11	1	15	116	0	0	345
05:45 PM	0	0	0	1	0	115	53	0	17	0	9	0	17	108	0	0	320
Total	5	1	1	4	0	466	232	0	66	0	31	1	71	428	0	0	1306
06:00 PM	2	0	2	0	1	105	49	0	15	0	5	1	14	124	1	0	319
06:15 PM	1	0	0	2	0	110	45	0	19	0	3	1	9	94	1	0	285
Grand Total	9	3	3	11	1	1099	508	1	149	0	64	5	149	1046	2	0	3050
Apprch %	34.6	11.5	11.5	42.3	0.1	68.3	31.6	0.1	68.3	0	29.4	2.3	12.4	87.4	0.2	0	
Total %	0.3	0.1	0.1	0.4	0	36	16.7	0	4.9	0	2.1	0.2	4.9	34.3	0.1	0	
Cars & Peds	9	3	3	11	1	1082	506	1	148	0	64	5	149	1035	2	0	3019
% Cars & Peds	100	100	100	100	100	98.5	99.6	100	99.3	0	100	100	100	98.9	100	0	99
Trucks & Buses	0	0	0	0	0	6	2	0	1	0	0	0	0	6	0	0	15
% Trucks & Buses	0	0	0	0	0	0.5	0.4	0	0.7	0	0	0	0	0.6	0	0	0.5
Bikes by Direction	0	0	0	0	0	11	0	0	0	0	0	0	0	5	0	0	16
% Bikes by Direction	0	0	0	0	0	1	0	0	0	0	0	0	0	0.5	0	0	0.5

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
05:15 PM	1	0	0	1	2	0	109	65	0	174	15	0	5	0	20	20	112	0	0	132	328
05:30 PM	2	0	0	1	3	0	122	58	0	180	19	0	11	1	31	15	116	0	0	131	345
05:45 PM	0	0	0	1	1	0	115	53	0	168	17	0	9	0	26	17	108	0	0	125	320
06:00 PM	2	0	2	0	4	1	105	49	0	155	15	0	5	1	21	14	124	1	0	139	319
Total Volume	5	0	2	3	10	1	451	225	0	677	66	0	30	2	98	66	460	1	0	527	1312
% App. Total	50	0	20	30		0.1	66.6	33.2	0		67.3	0	30.6	2		12.5	87.3	0.2	0		
PHF	.625	.000	.250	.750	.625	.250	.924	.865	.000	.940	.868	.000	.682	.500	.790	.825	.927	.250	.000	.948	.951
Cars & Peds	5	0	2	3	10	1	442	225	0	668	65	0	30	2	97	66	457	1	0	524	1299
% Cars & Peds	100	0	100	100	100	100	98.0	100	0	98.7	98.5	0	100	100	99.0	100	99.3	100	0	99.4	99.0
Trucks & Buses	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	3	0	0	3	6
% Trucks & Buses	0	0	0	0	0	0	0.4	0	0	0.3	1.5	0	0	0	1.0	0	0.7	0	0	0.6	0.5
Bikes by Direction	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	7
% Bikes by Direction	0	0	0	0	0	0	1.6	0	0	1.0	0	0	0	0	0	0	0	0	0	0	0.5

Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:15 PM

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

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File Name : 05171AA
Site Code : 2192633
Start Date : 5/2/2019
Page No : 1

Groups Printed- Cars & Peds

	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	1	0	116	40	0	10	0	4	0	15	110	0	0	296
04:15 PM	1	0	0	0	0	88	53	0	17	0	7	1	15	99	0	0	281
04:30 PM	0	0	0	1	0	102	37	1	11	0	5	1	10	94	0	0	262
04:45 PM	0	2	0	3	0	109	51	0	11	0	9	0	15	90	0	0	290
Total	1	2	0	5	0	415	181	1	49	0	25	2	55	393	0	0	1129
05:00 PM	2	1	1	1	0	119	56	0	15	0	6	0	19	92	0	0	312
05:15 PM	1	0	0	1	0	106	65	0	15	0	5	0	20	112	0	0	325
05:30 PM	2	0	0	1	0	120	58	0	18	0	11	1	15	115	0	0	341
05:45 PM	0	0	0	1	0	112	53	0	17	0	9	0	17	107	0	0	316
Total	5	1	1	4	0	457	232	0	65	0	31	1	71	426	0	0	1294
06:00 PM	2	0	2	0	1	104	49	0	15	0	5	1	14	123	1	0	317
06:15 PM	1	0	0	2	0	106	44	0	19	0	3	1	9	93	1	0	279
Grand Total	9	3	3	11	1	1082	506	1	148	0	64	5	149	1035	2	0	3019
Apprch %	34.6	11.5	11.5	42.3	0.1	68.1	31.8	0.1	68.2	0	29.5	2.3	12.6	87.3	0.2	0	
Total %	0.3	0.1	0.1	0.4	0	35.8	16.8	0	4.9	0	2.1	0.2	4.9	34.3	0.1	0	

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
05:15 PM	1	0	0	1	2	0	106	65	0	171	15	0	5	0	20	20	112	0	0	132	325
05:30 PM	2	0	0	1	3	0	120	58	0	178	18	0	11	1	30	15	115	0	0	130	341
05:45 PM	0	0	0	1	1	0	112	53	0	165	17	0	9	0	26	17	107	0	0	124	316
06:00 PM	2	0	2	0	4	1	104	49	0	154	15	0	5	1	21	14	123	1	0	138	317
Total Volume	5	0	2	3	10	1	442	225	0	668	65	0	30	2	97	66	457	1	0	524	1299
% App. Total	50	0	20	30		0.1	66.2	33.7	0		67	0	30.9	2.1		12.6	87.2	0.2	0		
PHF	.625	.000	.250	.750	.625	.250	.921	.865	.000	.938	.903	.000	.682	.500	.808	.825	.929	.250	.000	.949	.952

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Gage Street/Marked Tree Road
E/W: Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171AA
Site Code : 2192633
Start Date : 5/2/2019
Page No : 1

Groups Printed- Trucks & Buses																	
	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
04:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	2	1	0	0	0	0	0	0	2	0	0	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
05:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
Total	0	0	0	0	0	1	0	0	1	0	0	0	0	2	0	0	4
06:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
06:15 PM	0	0	0	0	0	2	1	0	0	0	0	0	0	1	0	0	4
Grand Total	0	0	0	0	0	6	2	0	1	0	0	0	0	6	0	0	15
Apprch %	0	0	0	0	0	75	25	0	100	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	40	13.3	0	6.7	0	0	0	0	40	0	0	

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:30 PM																					
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	2
05:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
06:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
06:15 PM	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	1	0	0	1	4
Total Volume	0	0	0	0	0	0	4	1	0	5	1	0	0	0	1	0	4	0	0	4	10
% App. Total	0	0	0	0		0	80	20	0		100	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.500	.250	.000	.417	.250	.000	.000	.000	.250	.000	1.00	.000	.000	1.00	.625

tel (781) 587-0086 cell (781) 439-4999

File Name : 05171AA
Site Code : 2192633
Start Date : 5/2/2019
Page No : 1

[illegible]

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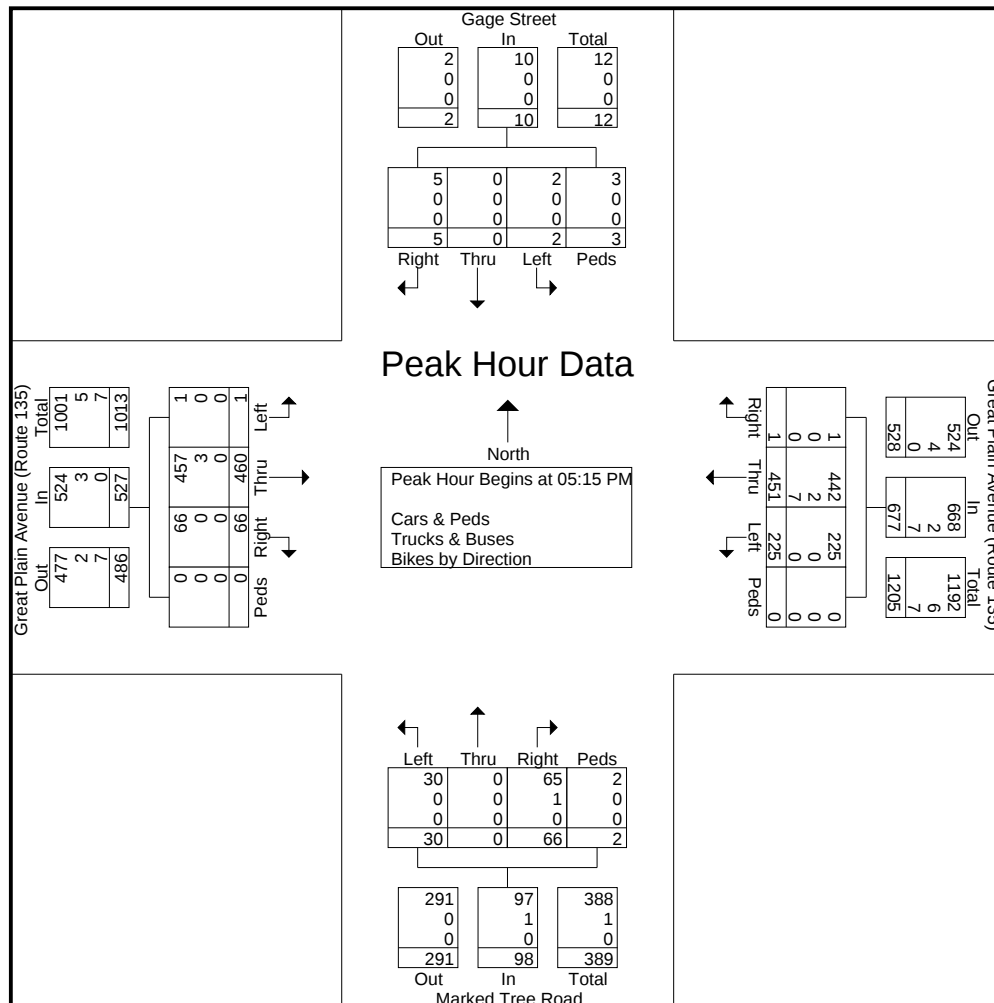
Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Gage Street/Marked Tree Road
E/W: Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171AA
Site Code : 2192633
Start Date : 5/2/2019
Page No : 1

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) 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 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
05:15 PM	1	0	0	1	2	0	109	65	0	174	15	0	5	0	20	20	112	0	0	132	328
05:30 PM	2	0	0	1	3	0	122	58	0	180	19	0	11	1	31	15	116	0	0	131	345
05:45 PM	0	0	0	1	1	0	115	53	0	168	17	0	9	0	26	17	108	0	0	125	320
06:00 PM	2	0	2	0	4	1	105	49	0	155	15	0	5	1	21	14	124	1	0	139	319
Total Volume	5	0	2	3	10	1	451	225	0	677	66	0	30	2	98	66	460	1	0	527	1312
% App. Total	50	0	20	30		0.1	66.6	33.2	0		67.3	0	30.6	2		12.5	87.3	0.2	0		
PHF	.625	.000	.250	.750	.625	.250	.924	.865	.000	.940	.868	.000	.682	.500	.790	.825	.927	.250	.000	.948	.951
Cars & Peds	5	0	2	3	10	1	442	225	0	668	65	0	30	2	97	66	457	1	0	524	1299
% Cars & Peds	100	0	100	100	100	100	98.0	100	0	98.7	98.5	0	100	100	99.0	100	99.3	100	0	99.4	99.0
Trucks & Buses	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	3	0	0	3	6
% Trucks & Buses	0	0	0	0	0	0	0.4	0	0	0.3	1.5	0	0	0	1.0	0	0.7	0	0	0.6	0.5
Bikes by Direction	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	7
% Bikes by Direction	0	0	0	0	0	0	1.6	0	0	1.0	0	0	0	0	0	0	0	0	0	0	0.5



Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Marshall Street / #1180 Driveway

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside / K. Cram

File Name : 05171B

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Marshall Street From North				Great Plain Avenue (Route 135) From East				#1180 Loop Driveway (Vacant) From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	2	0	1	5	0	68	0	0	0	0	0	3	0	129	0	0	208
07:15 AM	0	0	1	6	1	94	0	0	0	0	0	1	0	118	0	0	221
07:30 AM	0	0	1	1	2	86	0	0	0	0	0	1	0	157	0	0	248
07:45 AM	0	0	4	4	4	122	0	0	0	0	0	3	0	132	0	0	269
Total	2	0	7	16	7	370	0	0	0	0	0	8	0	536	0	0	946
08:00 AM	1	0	3	1	0	117	0	0	0	0	0	0	0	106	0	0	228
08:15 AM	0	0	0	1	1	125	0	0	0	0	0	0	0	97	0	0	224
08:30 AM	0	0	2	2	1	123	0	0	0	0	0	5	0	124	0	0	257
08:45 AM	0	0	1	1	1	128	0	0	0	0	0	1	0	122	0	0	254
Total	1	0	6	5	3	493	0	0	0	0	0	6	0	449	0	0	963
Grand Total	3	0	13	21	10	863	0	0	0	0	0	14	0	985	0	0	1909
Apprch %	8.1	0	35.1	56.8	1.1	98.9	0	0	0	0	0	100	0	100	0	0	
Total %	0.2	0	0.7	1.1	0.5	45.2	0	0	0	0	0	0.7	0	51.6	0	0	
Cars & Peds	2	0	13	21	8	827	0	0	0	0	0	14	0	951	0	0	1836
% Cars & Peds	66.7	0	100	100	80	95.8	0	0	0	0	0	100	0	96.5	0	0	96.2
Trucks & Buses	1	0	0	0	2	35	0	0	0	0	0	0	0	27	0	0	65
% Trucks & Buses	33.3	0	0	0	20	4.1	0	0	0	0	0	0	0	2.7	0	0	3.4
Bikes by Direction	0	0	0	0	0	1	0	0	0	0	0	0	0	7	0	0	8
% Bikes by Direction	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.7	0	0	0.4

	Marshall Street From North					Great Plain Avenue (Route 135) From East					#1180 Loop Driveway (Vacant) From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	4	4	8	4	122	0	0	126	0	0	0	3	3	0	132	0	0	132	269
08:00 AM	1	0	3	1	5	0	117	0	0	117	0	0	0	0	0	0	106	0	0	106	228
08:15 AM	0	0	0	1	1	1	125	0	0	126	0	0	0	0	0	0	97	0	0	97	224
08:30 AM	0	0	2	2	4	1	123	0	0	124	0	0	0	5	5	0	124	0	0	124	257
Total Volume	1	0	9	8	18	6	487	0	0	493	0	0	0	8	8	0	459	0	0	459	978
% App. Total	5.6	0	50	44.4		1.2	98.8	0	0		0	0	0	100		0	100	0	0		
PHF	.250	.000	.563	.500	.563	.375	.974	.000	.000	.978	.000	.000	.000	.400	.400	.000	.869	.000	.000	.869	.909
Cars & Peds	1	0	9	8	18	4	469	0	0	473	0	0	0	8	8	0	439	0	0	439	938
% Cars & Peds	100	0	100	100	100	66.7	96.3	0	0	95.9	0	0	0	100	100	0	95.6	0	0	95.6	95.9
Trucks & Buses	0	0	0	0	0	2	17	0	0	19	0	0	0	0	0	0	17	0	0	17	36
% Trucks & Buses	0	0	0	0	0	33.3	3.5	0	0	3.9	0	0	0	0	0	0	3.7	0	0	3.7	3.7
Bikes by Direction	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
% Bikes by Direction	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.7	0	0	0.7	0.4

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Marshall Street / #1180 Driveway

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside / K. Cram

File Name : 05171B

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Cars & Peds

	Marshall Street From North				Great Plain Avenue (Route 135) From East				#1180 Loop Driveway (Vacant) From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	1	0	1	5	0	64	0	0	0	0	0	3	0	125	0	0	199
07:15 AM	0	0	1	6	1	88	0	0	0	0	0	1	0	113	0	0	210
07:30 AM	0	0	1	1	2	80	0	0	0	0	0	1	0	153	0	0	238
07:45 AM	0	0	4	4	2	115	0	0	0	0	0	3	0	127	0	0	255
Total	1	0	7	16	5	347	0	0	0	0	0	8	0	518	0	0	902
08:00 AM	1	0	3	1	0	114	0	0	0	0	0	0	0	104	0	0	223
08:15 AM	0	0	0	1	1	120	0	0	0	0	0	0	0	91	0	0	213
08:30 AM	0	0	2	2	1	120	0	0	0	0	0	5	0	117	0	0	247
08:45 AM	0	0	1	1	1	126	0	0	0	0	0	1	0	121	0	0	251
Total	1	0	6	5	3	480	0	0	0	0	0	6	0	433	0	0	934
Grand Total	2	0	13	21	8	827	0	0	0	0	0	14	0	951	0	0	1836
Apprch %	5.6	0	36.1	58.3	1	99	0	0	0	0	0	100	0	100	0	0	
Total %	0.1	0	0.7	1.1	0.4	45	0	0	0	0	0	0.8	0	51.8	0	0	

	Marshall Street From North					Great Plain Avenue (Route 135) From East					#1180 Loop Driveway (Vacant) From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	4	4	8	2	115	0	0	117	0	0	0	3	3	0	127	0	0	127	255
08:00 AM	1	0	3	1	5	0	114	0	0	114	0	0	0	0	0	0	104	0	0	104	223
08:15 AM	0	0	0	1	1	1	120	0	0	121	0	0	0	0	0	0	91	0	0	91	213
08:30 AM	0	0	2	2	4	1	120	0	0	121	0	0	0	5	5	0	117	0	0	117	247
Total Volume	1	0	9	8	18	4	469	0	0	473	0	0	0	8	8	0	439	0	0	439	938
% App. Total	5.6	0	50	44.4		0.8	99.2	0	0		0	0	0	100		0	100	0	0		
PHF	.250	.000	.563	.500	.563	.500	.977	.000	.000	.977	.000	.000	.000	.400	.400	.000	.864	.000	.000	.864	.920

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Marshall Street / #1180 Driveway

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside / K. Cram

File Name : 05171B

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Trucks & Buses

	Marshall Street From North				Great Plain Avenue (Route 135) From East				#1180 Loop Driveway (Vacant) From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	1	0	0	0	0	4	0	0	0	0	0	0	0	3	0	0	8
07:15 AM	0	0	0	0	0	6	0	0	0	0	0	0	0	2	0	0	8
07:30 AM	0	0	0	0	0	6	0	0	0	0	0	0	0	4	0	0	10
07:45 AM	0	0	0	0	2	7	0	0	0	0	0	0	0	4	0	0	13
Total	1	0	0	0	2	23	0	0	0	0	0	0	0	13	0	0	39
08:00 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	5
08:15 AM	0	0	0	0	0	4	0	0	0	0	0	0	0	5	0	0	9
08:30 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	6	0	0	9
08:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
Total	0	0	0	0	0	12	0	0	0	0	0	0	0	14	0	0	26
Grand Total	1	0	0	0	2	35	0	0	0	0	0	0	0	27	0	0	65
Apprch %	100	0	0	0	5.4	94.6	0	0	0	0	0	0	0	100	0	0	
Total %	1.5	0	0	0	3.1	53.8	0	0	0	0	0	0	0	41.5	0	0	

	Marshall Street From North					Great Plain Avenue (Route 135) From East					#1180 Loop Driveway (Vacant) From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
07:00 AM	1	0	0	0	1	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	8
07:15 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	2	0	0	2	8
07:30 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	10
07:45 AM	0	0	0	0	0	2	7	0	0	9	0	0	0	0	0	0	4	0	0	4	13
Total Volume	1	0	0	0	1	2	23	0	0	25	0	0	0	0	0	0	13	0	0	13	39
% App. Total	100	0	0	0		8	92	0	0		0	0	0	0		0	100	0	0		
PHF	.250	.000	.000	.000	.250	.250	.821	.000	.000	.694	.000	.000	.000	.000	.000	.000	.813	.000	.000	.813	.750

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:00 AM

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Marshall Street / #1180 Driveway

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside / K. Cram

File Name : 05171B

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Bikes by Direction

	Marshall Street From North				Great Plain Avenue (Route 135) From East				#1180 Loop Driveway (Vacant) From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
Grand Total	0	0	0	0	0	1	0	0	0	0	0	0	0	7	0	0	8
Apprch %	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	12.5	0	0	0	0	0	0	0	87.5	0	0	

	Marshall Street From North					Great Plain Avenue (Route 135) From East					#1180 Loop Driveway (Vacant) From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.417	.000	.000	.417	.417

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Marshall Street / #1180 Driveway

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside / K. Cram

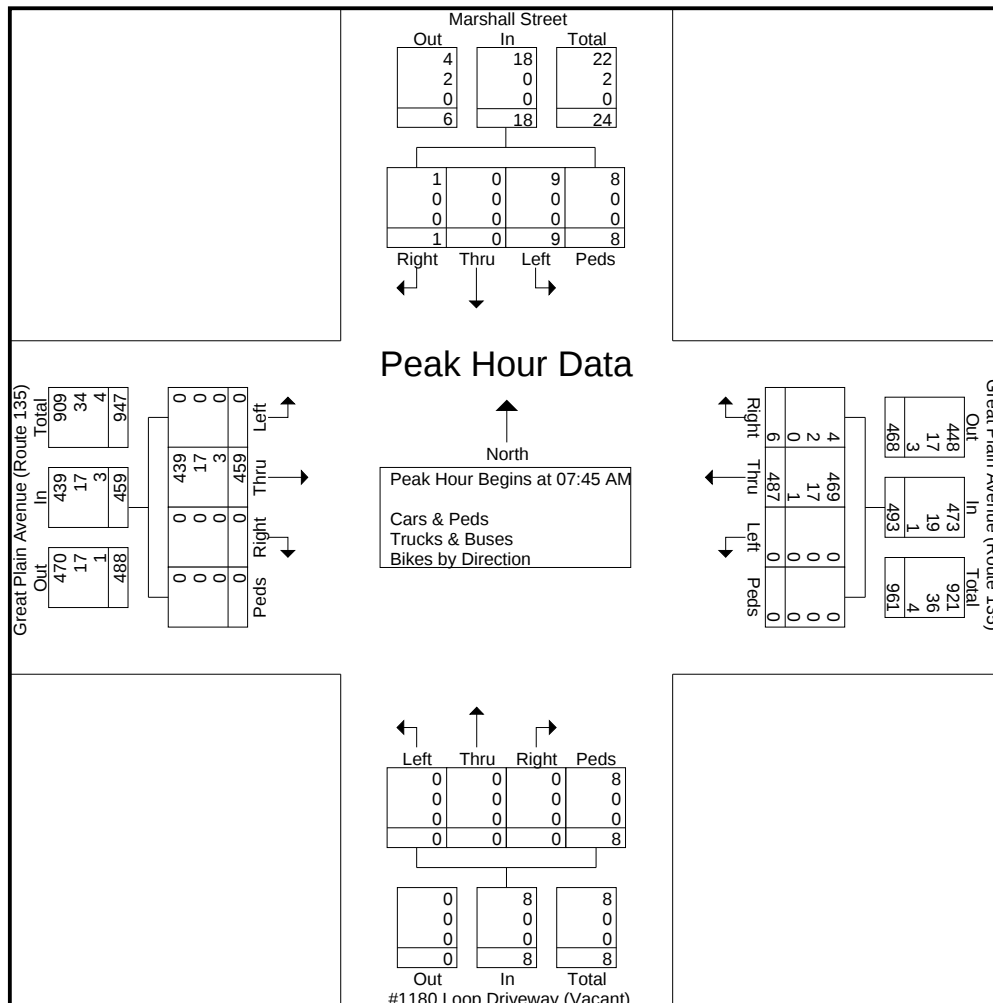
File Name : 05171B

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

	Marshall Street From North					Great Plain Avenue (Route 135) From East					#1180 Loop Driveway (Vacant) From South					Great Plain Avenue (Route 135) 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 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	4	4	8	4	122	0	0	126	0	0	0	3	3	0	132	0	0	132	269
08:00 AM	1	0	3	1	5	0	117	0	0	117	0	0	0	0	0	0	106	0	0	106	228
08:15 AM	0	0	0	1	1	1	125	0	0	126	0	0	0	0	0	0	97	0	0	97	224
08:30 AM	0	0	2	2	4	1	123	0	0	124	0	0	0	5	5	0	124	0	0	124	257
Total Volume	1	0	9	8	18	6	487	0	0	493	0	0	0	8	8	0	459	0	0	459	978
% App. Total	5.6	0	50	44.4		1.2	98.8	0	0		0	0	0	100		0	100	0	0		
PHF	.250	.000	.563	.500	.563	.375	.974	.000	.000	.978	.000	.000	.000	.400	.400	.000	.869	.000	.000	.869	.909
Cars & Peds	1	0	9	8	18	4	469	0	0	473	0	0	0	8	8	0	439	0	0	439	938
% Cars & Peds	100	0	100	100	100	66.7	96.3	0	0	95.9	0	0	0	100	100	0	95.6	0	0	95.6	95.9
Trucks & Buses	0	0	0	0	0	2	17	0	0	19	0	0	0	0	0	0	17	0	0	17	36
% Trucks & Buses	0	0	0	0	0	33.3	3.5	0	0	3.9	0	0	0	0	0	0	3.7	0	0	3.7	3.7
Bikes by Direction	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
% Bikes by Direction	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.7	0	0	0.7	0.4



Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Marshall Street / #1180 Driveway

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside / K. Cram

File Name : 05171BB

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Marshall Street From North				Great Plain Avenue (Route 135) From East				#1180 Loop Driveway (Vacant) From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	1	2	4	159	0	0	0	0	0	0	0	126	0	0	292
04:15 PM	0	0	1	0	1	141	0	0	0	0	0	3	0	104	0	0	250
04:30 PM	0	0	1	0	2	141	0	0	0	0	1	1	0	116	0	0	262
04:45 PM	1	0	0	6	1	158	0	0	0	0	0	4	0	92	0	0	262
Total	1	0	3	8	8	599	0	0	0	0	1	8	0	438	0	0	1066
05:00 PM	1	0	3	5	2	180	0	0	0	0	0	0	0	112	1	0	304
05:15 PM	1	0	2	1	1	173	0	0	0	0	0	0	0	136	0	0	314
05:30 PM	0	0	2	3	2	177	0	0	0	0	0	1	0	133	0	0	318
05:45 PM	0	0	2	1	6	169	0	0	0	0	0	0	0	130	0	0	308
Total	2	0	9	10	11	699	0	0	0	0	0	1	0	511	1	0	1244
06:00 PM	1	0	2	0	0	149	0	0	0	0	0	2	0	139	1	0	294
06:15 PM	0	0	1	2	4	158	0	0	0	0	0	5	0	112	1	0	283
Grand Total	4	0	15	20	23	1605	0	0	0	0	1	16	0	1200	3	0	2887
Apprch %	10.3	0	38.5	51.3	1.4	98.6	0	0	0	0	5.9	94.1	0	99.8	0.2	0	
Total %	0.1	0	0.5	0.7	0.8	55.6	0	0	0	0	0	0.6	0	41.6	0.1	0	
Cars & Peds	4	0	15	20	23	1585	0	0	0	0	0	16	0	1188	3	0	2854
% Cars & Peds	100	0	100	100	100	98.8	0	0	0	0	0	100	0	99	100	0	98.9
Trucks & Buses	0	0	0	0	0	8	0	0	0	0	0	0	0	7	0	0	15
% Trucks & Buses	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0.6	0	0	0.5
Bikes by Direction	0	0	0	0	0	12	0	0	0	0	1	0	0	5	0	0	18
% Bikes by Direction	0	0	0	0	0	0.7	0	0	0	0	100	0	0	0.4	0	0	0.6

	Marshall Street From North					Great Plain Avenue (Route 135) From East					#1180 Loop Driveway (Vacant) From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
05:00 PM	1	0	3	5	9	2	180	0	0	182	0	0	0	0	0	0	112	1	0	113	304
05:15 PM	1	0	2	1	4	1	173	0	0	174	0	0	0	0	0	0	136	0	0	136	314
05:30 PM	0	0	2	3	5	2	177	0	0	179	0	0	0	1	1	0	133	0	0	133	318
05:45 PM	0	0	2	1	3	6	169	0	0	175	0	0	0	0	0	0	130	0	0	130	308
Total Volume	2	0	9	10	21	11	699	0	0	710	0	0	0	1	1	0	511	1	0	512	1244
% App. Total	9.5	0	42.9	47.6		1.5	98.5	0	0		0	0	0	100		0	99.8	0.2	0		
PHF	.500	.000	.750	.500	.583	.458	.971	.000	.000	.975	.000	.000	.000	.250	.250	.000	.939	.250	.000	.941	.978
Cars & Peds	2	0	9	10	21	11	690	0	0	701	0	0	0	1	1	0	508	1	0	509	1232
% Cars & Peds	100	0	100	100	100	100	98.7	0	0	98.7	0	0	0	100	100	0	99.4	100	0	99.4	99.0
Trucks & Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
% Trucks & Buses	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0	0.6	0	0	0.6	0.3
Bikes by Direction	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	8
% Bikes by Direction	0	0	0	0	0	0	1.1	0	0	1.1	0	0	0	0	0	0	0	0	0	0	0.6

Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:00 PM

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Marshall Street / #1180 Driveway

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside / K. Cram

File Name : 05171BB

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Cars & Peds

	Marshall Street From North				Great Plain Avenue (Route 135) From East				#1180 Loop Driveway (Vacant) From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	1	2	4	158	0	0	0	0	0	0	0	124	0	0	289
04:15 PM	0	0	1	0	1	139	0	0	0	0	0	3	0	102	0	0	246
04:30 PM	0	0	1	0	2	139	0	0	0	0	0	1	0	114	0	0	257
04:45 PM	1	0	0	6	1	158	0	0	0	0	0	4	0	91	0	0	261
Total	1	0	3	8	8	594	0	0	0	0	0	8	0	431	0	0	1053
05:00 PM	1	0	3	5	2	179	0	0	0	0	0	0	0	112	1	0	303
05:15 PM	1	0	2	1	1	168	0	0	0	0	0	0	0	136	0	0	309
05:30 PM	0	0	2	3	2	177	0	0	0	0	0	1	0	131	0	0	316
05:45 PM	0	0	2	1	6	166	0	0	0	0	0	0	0	129	0	0	304
Total	2	0	9	10	11	690	0	0	0	0	0	1	0	508	1	0	1232
06:00 PM	1	0	2	0	0	148	0	0	0	0	0	2	0	138	1	0	292
06:15 PM	0	0	1	2	4	153	0	0	0	0	0	5	0	111	1	0	277
Grand Total	4	0	15	20	23	1585	0	0	0	0	0	16	0	1188	3	0	2854
Apprch %	10.3	0	38.5	51.3	1.4	98.6	0	0	0	0	0	100	0	99.7	0.3	0	
Total %	0.1	0	0.5	0.7	0.8	55.5	0	0	0	0	0	0.6	0	41.6	0.1	0	

	Marshall Street From North					Great Plain Avenue (Route 135) From East					#1180 Loop Driveway (Vacant) From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	1	0	3	5	9	2	179	0	0	181	0	0	0	0	0	0	112	1	0	113	303
05:15 PM	1	0	2	1	4	1	168	0	0	169	0	0	0	0	0	0	136	0	0	136	309
05:30 PM	0	0	2	3	5	2	177	0	0	179	0	0	0	1	1	0	131	0	0	131	316
05:45 PM	0	0	2	1	3	6	166	0	0	172	0	0	0	0	0	0	129	0	0	129	304
Total Volume	2	0	9	10	21	11	690	0	0	701	0	0	0	1	1	0	508	1	0	509	1232
% App. Total	9.5	0	42.9	47.6		1.6	98.4	0	0		0	0	0	100		0	99.8	0.2	0		
PHF	.500	.000	.750	.500	.583	.458	.964	.000	.000	.968	.000	.000	.000	.250	.250	.000	.934	.250	.000	.936	.975

Transportation Data Corporation

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City, State: Needham, MA

Client: Bayside / K. Cram

File Name : 05171BB

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Trucks & Buses

	Marshall Street From North				Great Plain Avenue (Route 135) From East				#1180 Loop Driveway (Vacant) From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
04:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
05:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	4
06:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
06:15 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	4
Grand Total	0	0	0	0	0	8	0	0	0	0	0	0	0	7	0	0	15
Apprch %	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	53.3	0	0	0	0	0	0	0	46.7	0	0	

	Marshall Street From North					Great Plain Avenue (Route 135) From East					#1180 Loop Driveway (Vacant) From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:30 PM																					
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
05:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
06:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
06:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
Total Volume	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	10
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.417	.000	.000	.417	.000	.000	.000	.000	.000	.000	.625	.000	.000	.625	.625

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Groups Printed- Bikes by Direction

	Marshall Street From North				Great Plain Avenue (Route 135) From East				#1180 Loop Driveway (Vacant) From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
04:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
04:30 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	2	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	0	0	0	1	0	0	5	0	0	8
05:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	8
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	0	0	0	0	12	0	0	0	0	1	0	0	5	0	0	18
Apprch %	0	0	0	0	0	100	0	0	0	0	100	0	0	100	0	0	
Total %	0	0	0	0	0	66.7	0	0	0	0	5.6	0	0	27.8	0	0	

	Marshall Street From North					Great Plain Avenue (Route 135) From East					#1180 Loop Driveway (Vacant) From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	2	0	0	2	4
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	5
Total Volume	0	0	0	0	0	0	7	0	0	7	0	0	1	0	1	0	2	0	0	2	10
% App. Total	0	0	0	0		0	100	0	0		0	0	100	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.350	.000	.000	.350	.000	.000	.250	.000	.250	.000	.250	.000	.000	.250	.500

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Marshall Street / #1180 Driveway

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside / K. Cram

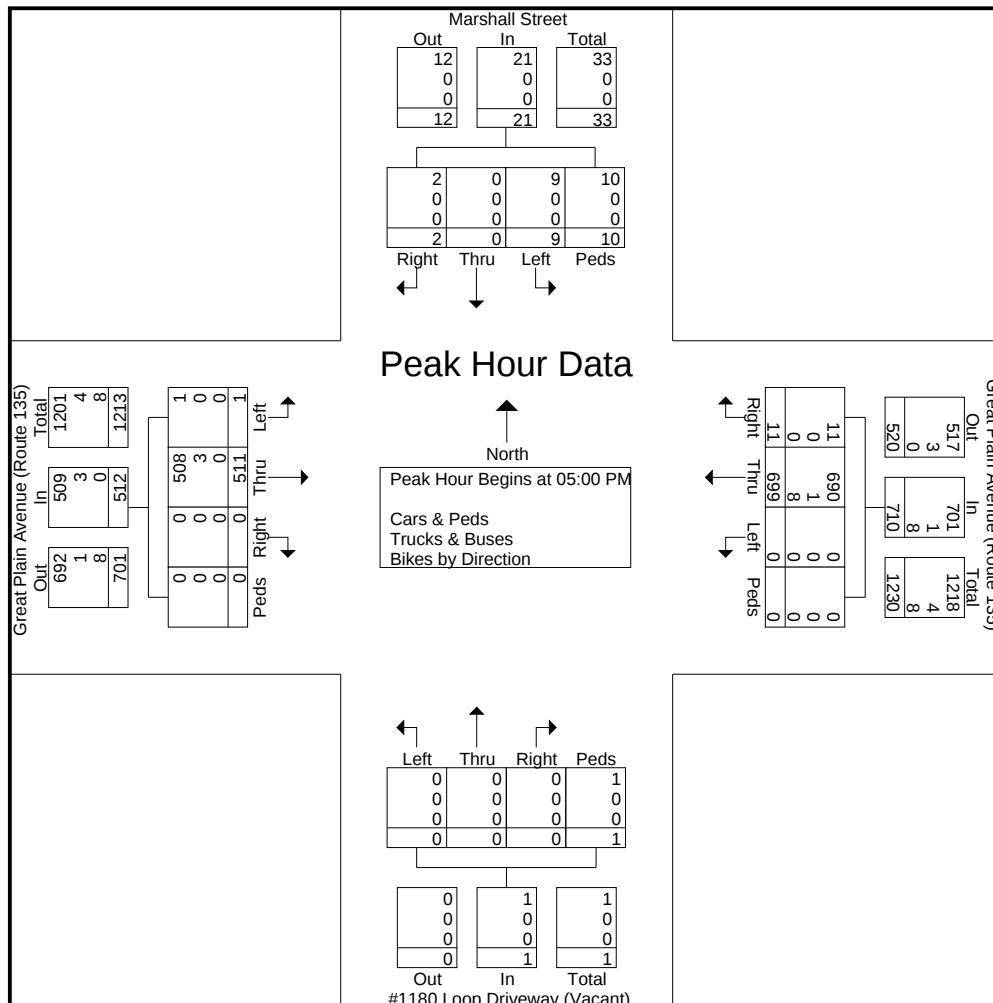
File Name : 05171BB

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

	Marshall Street From North					Great Plain Avenue (Route 135) From East					#1180 Loop Driveway (Vacant) From South					Great Plain Avenue (Route 135) 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 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	1	0	3	5	9	2	180	0	0	182	0	0	0	0	0	0	112	1	0	113	304
05:15 PM	1	0	2	1	4	1	173	0	0	174	0	0	0	0	0	0	136	0	0	136	314
05:30 PM	0	0	2	3	5	2	177	0	0	179	0	0	0	1	1	0	133	0	0	133	318
05:45 PM	0	0	2	1	3	6	169	0	0	175	0	0	0	0	0	0	130	0	0	130	308
Total Volume	2	0	9	10	21	11	699	0	0	710	0	0	0	1	1	0	511	1	0	512	1244
% App. Total	9.5	0	42.9	47.6		1.5	98.5	0	0		0	0	0	100		0	99.8	0.2	0		
PHF	.500	.000	.750	.500	.583	.458	.971	.000	.000	.975	.000	.000	.000	.250	.250	.000	.939	.250	.000	.941	.978
Cars & Peds	2	0	9	10	21	11	690	0	0	701	0	0	0	1	1	0	508	1	0	509	1232
% Cars & Peds	100	0	100	100	100	100	98.7	0	0	98.7	0	0	0	100	100	0	99.4	100	0	99.4	99.0
Trucks & Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
% Trucks & Buses	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0	0.6	0	0	0.6	0.3
Bikes by Direction	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	8
% Bikes by Direction	0	0	0	0	0	0	1.1	0	0	1.1	0	0	0	0	0	0	0	0	0	0	0.6



Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Washburn Avenue/Linden Street

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171C

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Washburn Avenue From North				Great Plain Avenue (Route 135) From East				Linden Street From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	5	0	70	14	0	18	0	0	3	8	117	0	2	237
07:15 AM	1	0	0	10	0	95	67	0	32	0	0	1	13	110	0	8	337
07:30 AM	1	2	0	2	0	85	43	0	93	1	3	1	9	146	1	2	389
07:45 AM	0	0	1	6	2	125	20	1	60	0	2	1	7	130	0	0	355
Total	2	2	1	23	2	375	144	1	203	1	5	6	37	503	1	12	1318
08:00 AM	1	0	0	1	0	111	35	0	77	0	5	0	4	107	0	0	341
08:15 AM	1	0	0	1	0	122	22	0	43	0	3	0	5	86	3	3	289
08:30 AM	0	0	2	1	1	117	29	0	54	0	7	3	14	109	2	2	341
08:45 AM	2	0	1	1	1	126	15	0	64	0	2	2	12	112	2	0	340
Total	4	0	3	4	2	476	101	0	238	0	17	5	35	414	7	5	1311
Grand Total	6	2	4	27	4	851	245	1	441	1	22	11	72	917	8	17	2629
Apprch %	15.4	5.1	10.3	69.2	0.4	77.3	22.3	0.1	92.8	0.2	4.6	2.3	7.1	90.4	0.8	1.7	
Total %	0.2	0.1	0.2	1	0.2	32.4	9.3	0	16.8	0	0.8	0.4	2.7	34.9	0.3	0.6	
Cars & Peds	6	2	4	27	4	814	225	1	434	1	22	11	71	885	8	17	2532
% Cars & Peds	100	100	100	100	100	95.7	91.8	100	98.4	100	100	100	98.6	96.5	100	100	96.3
Trucks & Buses	0	0	0	0	0	36	18	0	5	0	0	0	1	25	0	0	85
% Trucks & Buses	0	0	0	0	0	4.2	7.3	0	1.1	0	0	0	1.4	2.7	0	0	3.2
Bikes by Direction	0	0	0	0	0	1	2	0	2	0	0	0	0	7	0	0	12
% Bikes by Direction	0	0	0	0	0	0.1	0.8	0	0.5	0	0	0	0	0.8	0	0	0.5

	Washburn Avenue From North					Great Plain Avenue (Route 135) From East					Linden Street From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	1	0	0	10	11	0	95	67	0	162	32	0	0	1	33	13	110	0	8	131	337
07:30 AM	1	2	0	2	5	0	85	43	0	128	93	1	3	1	98	9	146	1	2	158	389
07:45 AM	0	0	1	6	7	2	125	20	1	148	60	0	2	1	63	7	130	0	0	137	355
08:00 AM	1	0	0	1	2	0	111	35	0	146	77	0	5	0	82	4	107	0	0	111	341
Total Volume	3	2	1	19	25	2	416	165	1	584	262	1	10	3	276	33	493	1	10	537	1422
% App. Total	12	8	4	76		0.3	71.2	28.3	0.2		94.9	0.4	3.6	1.1		6.1	91.8	0.2	1.9		
PHF	.750	.250	.250	.475	.568	.250	.832	.616	.250	.901	.704	.250	.500	.750	.704	.635	.844	.250	.313	.850	.914
Cars & Peds	3	2	1	19	25	2	393	151	1	547	260	1	10	3	274	33	477	1	10	521	1367
% Cars & Peds	100	100	100	100	100	100	94.5	91.5	100	93.7	99.2	100	100	100	99.3	100	96.8	100	100	97.0	96.1
Trucks & Buses	0	0	0	0	0	0	23	13	0	36	2	0	0	0	2	0	12	0	0	12	50
% Trucks & Buses	0	0	0	0	0	0	5.5	7.9	0	6.2	0.8	0	0	0	0.7	0	2.4	0	0	2.2	3.5
Bikes by Direction	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	4	0	0	4	5
% Bikes by Direction	0	0	0	0	0	0	0	0.6	0	0.2	0	0	0	0	0	0	0.8	0	0	0.7	0.4

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Washburn Avenue/Linden Street

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171C

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Cars & Peds

	Washburn Avenue From North				Great Plain Avenue (Route 135) From East				Linden Street From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	5	0	66	11	0	18	0	0	3	8	113	0	2	226
07:15 AM	1	0	0	10	0	89	59	0	32	0	0	1	13	105	0	8	318
07:30 AM	1	2	0	2	0	80	42	0	93	1	3	1	9	142	1	2	379
07:45 AM	0	0	1	6	2	116	20	1	58	0	2	1	7	125	0	0	339
Total	2	2	1	23	2	351	132	1	201	1	5	6	37	485	1	12	1262
08:00 AM	1	0	0	1	0	108	30	0	77	0	5	0	4	105	0	0	331
08:15 AM	1	0	0	1	0	117	22	0	41	0	3	0	4	81	3	3	276
08:30 AM	0	0	2	1	1	114	27	0	51	0	7	3	14	103	2	2	327
08:45 AM	2	0	1	1	1	124	14	0	64	0	2	2	12	111	2	0	336
Total	4	0	3	4	2	463	93	0	233	0	17	5	34	400	7	5	1270
Grand Total	6	2	4	27	4	814	225	1	434	1	22	11	71	885	8	17	2532
Apprch %	15.4	5.1	10.3	69.2	0.4	78	21.6	0.1	92.7	0.2	4.7	2.4	7.2	90.2	0.8	1.7	
Total %	0.2	0.1	0.2	1.1	0.2	32.1	8.9	0	17.1	0	0.9	0.4	2.8	35	0.3	0.7	

	Washburn Avenue From North					Great Plain Avenue (Route 135) From East					Linden Street From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
07:15 AM	1	0	0	10	11	0	89	59	0	148	32	0	0	1	33	13	105	0	8	126	318
07:30 AM	1	2	0	2	5	0	80	42	0	122	93	1	3	1	98	9	142	1	2	154	379
07:45 AM	0	0	1	6	7	2	116	20	1	139	58	0	2	1	61	7	125	0	0	132	339
08:00 AM	1	0	0	1	2	0	108	30	0	138	77	0	5	0	82	4	105	0	0	109	331
Total Volume	3	2	1	19	25	2	393	151	1	547	260	1	10	3	274	33	477	1	10	521	1367
% App. Total	12	8	4	76		0.4	71.8	27.6	0.2		94.9	0.4	3.6	1.1		6.3	91.6	0.2	1.9		
PHF	.750	.250	.250	.475	.568	.250	.847	.640	.250	.924	.699	.250	.500	.750	.699	.635	.840	.250	.313	.846	.902

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:15 AM

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Washburn Avenue/Linden Street

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171C

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Trucks & Buses

	Washburn Avenue From North				Great Plain Avenue (Route 135) From East				Linden Street From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	4	3	0	0	0	0	0	0	3	0	0	10
07:15 AM	0	0	0	0	0	6	7	0	0	0	0	0	0	2	0	0	15
07:30 AM	0	0	0	0	0	5	1	0	0	0	0	0	0	4	0	0	10
07:45 AM	0	0	0	0	0	9	0	0	2	0	0	0	0	4	0	0	15
Total	0	0	0	0	0	24	11	0	2	0	0	0	0	13	0	0	50
08:00 AM	0	0	0	0	0	3	5	0	0	0	0	0	0	2	0	0	10
08:15 AM	0	0	0	0	0	4	0	0	1	0	0	0	1	4	0	0	10
08:30 AM	0	0	0	0	0	3	2	0	2	0	0	0	0	5	0	0	12
08:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
Total	0	0	0	0	0	12	7	0	3	0	0	0	1	12	0	0	35
Grand Total	0	0	0	0	0	36	18	0	5	0	0	0	1	25	0	0	85
Apprch %	0	0	0	0	0	66.7	33.3	0	100	0	0	0	3.8	96.2	0	0	
Total %	0	0	0	0	0	42.4	21.2	0	5.9	0	0	0	1.2	29.4	0	0	

	Washburn Avenue From North					Great Plain Avenue (Route 135) From East					Linden Street From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	4	3	0	7	0	0	0	0	0	0	3	0	0	3	10
07:15 AM	0	0	0	0	0	0	6	7	0	13	0	0	0	0	0	0	2	0	0	2	15
07:30 AM	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	0	4	0	0	4	10
07:45 AM	0	0	0	0	0	0	9	0	0	9	2	0	0	0	2	0	4	0	0	4	15
Total Volume	0	0	0	0	0	0	24	11	0	35	2	0	0	0	2	0	13	0	0	13	50
% App. Total	0	0	0	0		0	68.6	31.4	0		100	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.667	.393	.000	.673	.250	.000	.000	.000	.250	.000	.813	.000	.000	.813	.833

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Washburn Avenue/Linden Street

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171C

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Bikes by Direction

	Washburn Avenue From North				Great Plain Avenue (Route 135) From East				Linden Street From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
07:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	4
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	0	1	0	0	0	0	0	0	5	0	0	6
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	3
08:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
08:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	1	1	0	2	0	0	0	0	2	0	0	6
Grand Total	0	0	0	0	0	1	2	0	2	0	0	0	0	7	0	0	12
Apprch %	0	0	0	0	0	33.3	66.7	0	100	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	8.3	16.7	0	16.7	0	0	0	0	58.3	0	0	

	Washburn Avenue From North					Great Plain Avenue (Route 135) From East					Linden Street From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	3	0	0	3	4
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Volume	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	5	0	0	5	6
% App. Total	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	100	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.417	.000	.000	.417	.375

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Washburn Avenue/Linden Street

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside/K. Cram

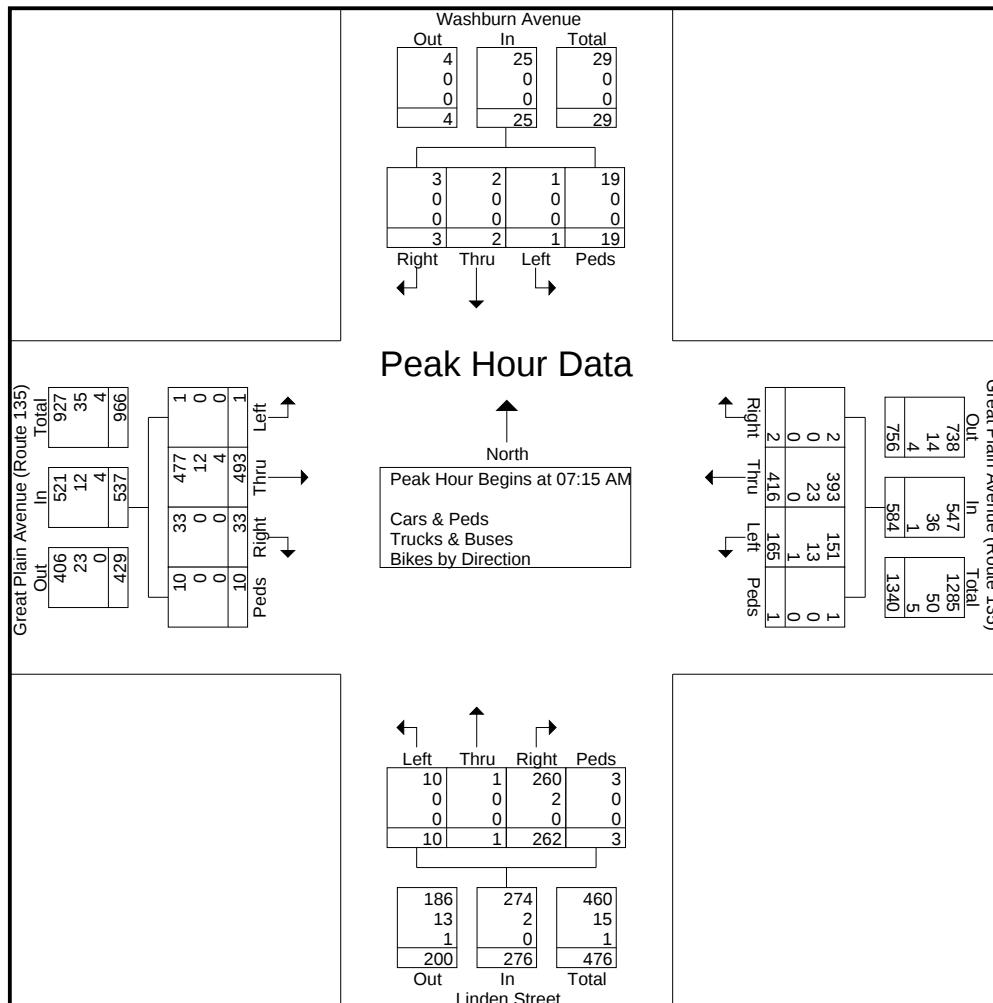
File Name : 05171C

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

	Washburn Avenue From North					Great Plain Avenue (Route 135) From East					Linden Street From South					Great Plain Avenue (Route 135) 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 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	1	0	0	10	11	0	95	67	0	162	32	0	0	1	33	13	110	0	8	131	337
07:30 AM	1	2	0	2	5	0	85	43	0	128	93	1	3	1	98	9	146	1	2	158	389
07:45 AM	0	0	1	6	7	2	125	20	1	148	60	0	2	1	63	7	130	0	0	137	355
08:00 AM	1	0	0	1	2	0	111	35	0	146	77	0	5	0	82	4	107	0	0	111	341
Total Volume	3	2	1	19	25	2	416	165	1	584	262	1	10	3	276	33	493	1	10	537	1422
% App. Total	12	8	4	76		0.3	71.2	28.3	0.2		94.9	0.4	3.6	1.1		6.1	91.8	0.2	1.9		
PHF	.750	.250	.250	.475	.568	.250	.832	.616	.250	.901	.704	.250	.500	.750	.704	.635	.844	.250	.313	.850	.914
Cars & Peds	3	2	1	19	25	2	393	151	1	547	260	1	10	3	274	33	477	1	10	521	1367
% Cars & Peds	100	100	100	100	100	100	94.5	91.5	100	93.7	99.2	100	100	100	99.3	100	96.8	100	100	97.0	96.1
Trucks & Buses	0	0	0	0	0	0	23	13	0	36	2	0	0	0	2	0	12	0	0	12	50
% Trucks & Buses	0	0	0	0	0	0	5.5	7.9	0	6.2	0.8	0	0	0	0.7	0	2.4	0	0	2.2	3.5
Bikes by Direction	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	4	0	0	4	5
% Bikes by Direction	0	0	0	0	0	0	0	0.6	0	0.2	0	0	0	0	0	0	0.8	0	0	0.7	0.4



tel (781) 587-0086 cell (781) 439-4999

Client: Bayside / K. Cram

Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction																	
	Washburn Avenue From North				Great Plain Avenue (Route 135) From East				Linden Street From South				Great Plain Avenue (Route 135) From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	1	2	2	3	0	159	36	0	17	0	3	0	15	115	0	0	353
04:15 PM	2	1	2	0	1	134	38	0	14	0	2	7	11	95	0	0	307
04:30 PM	2	1	0	0	1	140	31	0	19	0	3	2	12	101	0	0	312
04:45 PM	0	0	0	9	0	153	36	1	23	0	4	4	4	95	0	1	330
Total	5	4	4	12	2	586	141	1	73	0	12	13	42	406	0	1	1302
05:00 PM	0	2	1	5	0	181	40	0	22	0	2	5	6	107	1	1	373
05:15 PM	3	0	2	1	0	165	39	0	13	0	4	2	14	123	0	0	366
05:30 PM	2	1	0	5	1	173	64	0	18	0	4	2	13	119	1	5	408
05:45 PM	2	0	1	2	1	175	59	0	24	0	2	4	15	119	0	0	404
Total	7	3	4	13	2	694	202	0	77	0	12	13	48	468	2	6	1551
06:00 PM	0	1	2	0	2	148	47	0	22	1	3	2	15	121	3	1	368
06:15 PM	2	0	0	1	1	159	33	0	16	1	4	6	4	110	2	2	341
Grand Total	14	8	10	26	7	1587	423	1	188	2	31	34	109	1105	7	10	3562
Apprch %	24.1	13.8	17.2	44.8	0.3	78.6	21	0	73.7	0.8	12.2	13.3	8.9	89.8	0.6	0.8	
Total %	0.4	0.2	0.3	0.7	0.2	44.6	11.9	0	5.3	0.1	0.9	1	3.1	31	0.2	0.3	
Cars & Peds	14	8	10	26	7	1567	420	1	186	2	31	34	109	1093	7	10	3525
% Cars & Peds	100	100	100	100	100	98.7	99.3	100	98.9	100	100	100	100	98.9	100	100	99
Trucks & Buses	0	0	0	0	0	7	3	0	2	0	0	0	0	7	0	0	19
% Trucks & Buses	0	0	0	0	0	0.4	0.7	0	1.1	0	0	0	0	0.6	0	0	0.5
Bikes by Direction	0	0	0	0	0	13	0	0	0	0	0	0	0	5	0	0	18
% Bikes by Direction	0	0	0	0	0	0.8	0	0	0	0	0	0	0	0.5	0	0	0.5

[illegible]

Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:00 PM

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Washburn Avenue/Linden Street

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171CC

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Cars & Peds

	Washburn Avenue From North				Great Plain Avenue (Route 135) From East				Linden Street From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	1	2	2	3	0	158	36	0	17	0	3	0	15	113	0	0	350
04:15 PM	2	1	2	0	1	132	37	0	14	0	2	7	11	93	0	0	302
04:30 PM	2	1	0	0	1	138	30	0	18	0	3	2	12	99	0	0	306
04:45 PM	0	0	0	9	0	151	36	1	22	0	4	4	4	94	0	1	326
Total	5	4	4	12	2	579	139	1	71	0	12	13	42	399	0	1	1284
05:00 PM	0	2	1	5	0	180	40	0	22	0	2	5	6	107	1	1	372
05:15 PM	3	0	2	1	0	161	39	0	13	0	4	2	14	123	0	0	362
05:30 PM	2	1	0	5	1	173	64	0	18	0	4	2	13	117	1	5	406
05:45 PM	2	0	1	2	1	172	58	0	24	0	2	4	15	118	0	0	399
Total	7	3	4	13	2	686	201	0	77	0	12	13	48	465	2	6	1539
06:00 PM	0	1	2	0	2	147	47	0	22	1	3	2	15	120	3	1	366
06:15 PM	2	0	0	1	1	155	33	0	16	1	4	6	4	109	2	2	336
Grand Total	14	8	10	26	7	1567	420	1	186	2	31	34	109	1093	7	10	3525
Apprch %	24.1	13.8	17.2	44.8	0.4	78.5	21.1	0.1	73.5	0.8	12.3	13.4	8.9	89.7	0.6	0.8	
Total %	0.4	0.2	0.3	0.7	0.2	44.5	11.9	0	5.3	0.1	0.9	1	3.1	31	0.2	0.3	

	Washburn Avenue From North					Great Plain Avenue (Route 135) From East					Linden Street From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	2	1	5	8	0	180	40	0	220	22	0	2	5	29	6	107	1	1	115	372
05:15 PM	3	0	2	1	6	0	161	39	0	200	13	0	4	2	19	14	123	0	0	137	362
05:30 PM	2	1	0	5	8	1	173	64	0	238	18	0	4	2	24	13	117	1	5	136	406
05:45 PM	2	0	1	2	5	1	172	58	0	231	24	0	2	4	30	15	118	0	0	133	399
Total Volume	7	3	4	13	27	2	686	201	0	889	77	0	12	13	102	48	465	2	6	521	1539
% App. Total	25.9	11.1	14.8	48.1		0.2	77.2	22.6	0		75.5	0	11.8	12.7		9.2	89.3	0.4	1.2		
PHF	.583	.375	.500	.650	.844	.500	.953	.785	.000	.934	.802	.000	.750	.650	.850	.800	.945	.500	.300	.951	.948

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Washburn Avenue/Linden Street

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171CC

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Trucks & Buses

	Washburn Avenue From North				Great Plain Avenue (Route 135) From East				Linden Street From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	3
04:30 PM	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	3
04:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
Total	0	0	0	0	0	3	2	0	2	0	0	0	0	2	0	0	9
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
05:45 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	3
Total	0	0	0	0	0	1	1	0	0	0	0	0	0	3	0	0	5
06:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
06:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
Grand Total	0	0	0	0	0	7	3	0	2	0	0	0	0	7	0	0	19
Apprch %	0	0	0	0	0	70	30	0	100	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	36.8	15.8	0	10.5	0	0	0	0	36.8	0	0	

	Washburn Avenue From North					Great Plain Avenue (Route 135) From East					Linden Street From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:30 PM																					
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
05:45 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	3
06:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
06:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Total Volume	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	5	0	0	5	10
% App. Total	0	0	0	0		0	80	20	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.500	.250	.000	.625	.000	.000	.000	.000	.000	.000	.625	.000	.000	.625	.833

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Washburn Avenue/Linden Street

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171CC

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Bikes by Direction

	Washburn Avenue From North				Great Plain Avenue (Route 135) From East				Linden Street From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
04:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
04:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
04:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	4	0	0	0	0	0	0	0	5	0	0	9
05:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	7
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	0	0	0	0	13	0	0	0	0	0	0	0	5	0	0	18
Apprch %	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	72.2	0	0	0	0	0	0	0	27.8	0	0	

	Washburn Avenue From North					Great Plain Avenue (Route 135) From East					Linden Street From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
04:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4
Total Volume	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	2	0	0	2	10
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.625

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Washburn Avenue/Linden Street

E/W: Great Plain Avenue (Route 135)

City, State: Needham, MA

Client: Bayside/K. Cram

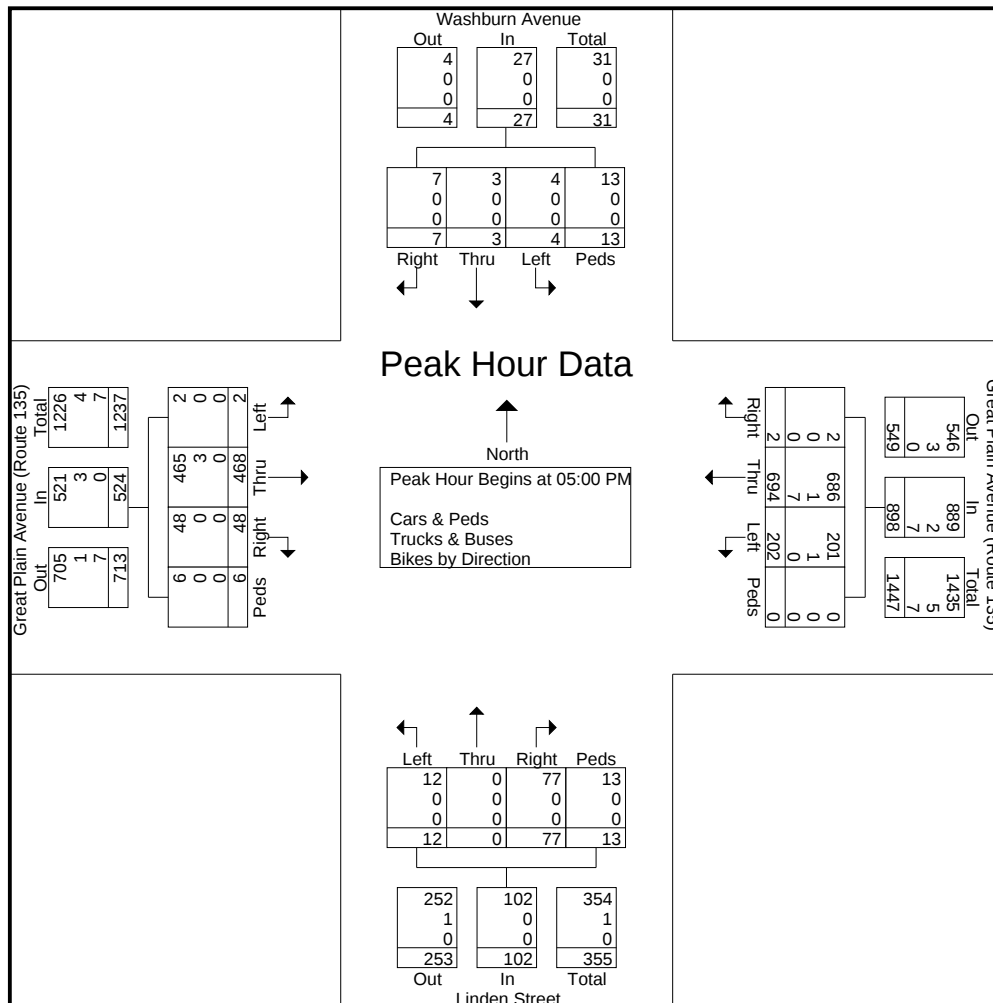
File Name : 05171CC

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

	Washburn Avenue From North					Great Plain Avenue (Route 135) From East					Linden Street From South					Great Plain Avenue (Route 135) 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 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	2	1	5	8	0	181	40	0	221	22	0	2	5	29	6	107	1	1	115	373
05:15 PM	3	0	2	1	6	0	165	39	0	204	13	0	4	2	19	14	123	0	0	137	366
05:30 PM	2	1	0	5	8	1	173	64	0	238	18	0	4	2	24	13	119	1	5	138	408
05:45 PM	2	0	1	2	5	1	175	59	0	235	24	0	2	4	30	15	119	0	0	134	404
Total Volume	7	3	4	13	27	2	694	202	0	898	77	0	12	13	102	48	468	2	6	524	1551
% App. Total	25.9	11.1	14.8	48.1		0.2	77.3	22.5	0		75.5	0	11.8	12.7		9.2	89.3	0.4	1.1		
PHF	.583	.375	.500	.650	.844	.500	.959	.789	.000	.943	.802	.000	.750	.650	.850	.800	.951	.500	.300	.949	.950
Cars & Peds	7	3	4	13	27	2	686	201	0	889	77	0	12	13	102	48	465	2	6	521	1539
% Cars & Peds	100	100	100	100	100	100	98.8	99.5	0	99.0	100	0	100	100	100	100	99.4	100	100	99.4	99.2
Trucks & Buses	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	3	0	0	3	5
% Trucks & Buses	0	0	0	0	0	0	0.1	0.5	0	0.2	0	0	0	0	0	0	0.6	0	0	0.6	0.3
Bikes by Direction	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	7
% Bikes by Direction	0	0	0	0	0	0	1.0	0	0	0.8	0	0	0	0	0	0	0	0	0	0	0.5



Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Walnut Place/Willow Street

E/W: Walnut Street

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171D

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Walnut Place From North				Walnut Street From East				Willow Street From South				Walnut Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	2	0	1	0	0	2	0	1	1	1	3	0	0	11
07:15 AM	0	0	0	1	0	2	0	0	0	0	0	0	3	1	0	0	7
07:30 AM	0	0	0	0	0	3	0	0	0	0	0	1	1	14	0	0	19
07:45 AM	0	0	0	1	0	6	2	0	1	0	1	1	1	14	0	0	27
Total	0	0	0	4	0	12	2	0	3	0	2	3	6	32	0	0	64
08:00 AM	1	0	0	1	0	0	0	0	1	0	0	0	1	8	0	0	12
08:15 AM	0	0	5	0	0	1	0	0	0	0	1	1	2	8	0	0	18
08:30 AM	1	0	7	1	0	3	0	0	2	0	1	0	4	9	0	0	28
08:45 AM	1	0	17	1	0	0	1	0	1	0	0	2	1	2	0	0	26
Total	3	0	29	3	0	4	1	0	4	0	2	3	8	27	0	0	84
Grand Total	3	0	29	7	0	16	3	0	7	0	4	6	14	59	0	0	148
Apprch %	7.7	0	74.4	17.9	0	84.2	15.8	0	41.2	0	23.5	35.3	19.2	80.8	0	0	
Total %	2	0	19.6	4.7	0	10.8	2	0	4.7	0	2.7	4.1	9.5	39.9	0	0	
Cars & Peds	2	0	27	7	0	15	3	0	7	0	4	6	14	59	0	0	144
% Cars & Peds	66.7	0	93.1	100	0	93.8	100	0	100	0	100	100	100	100	0	0	97.3
Trucks & Buses	1	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	4
% Trucks & Buses	33.3	0	6.9	0	0	6.2	0	0	0	0	0	0	0	0	0	0	2.7
Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Walnut Place From North					Walnut Street From East					Willow Street From South					Walnut Street From West					Int. Total
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	
07:45 AM	0	0	0	1	1	0	6	2	0	8	1	0	1	1	3	1	14	0	0	15	27
08:00 AM	1	0	0	1	2	0	0	0	0	0	1	0	0	0	1	1	8	0	0	9	12
08:15 AM	0	0	5	0	5	0	1	0	0	1	0	0	1	1	2	2	8	0	0	10	18
08:30 AM	1	0	7	1	9	0	3	0	0	3	2	0	1	0	3	4	9	0	0	13	28
Total Volume	2	0	12	3	17	0	10	2	0	12	4	0	3	2	9	8	39	0	0	47	85
% App. Total	11.8	0	70.6	17.6		0	83.3	16.7	0		44.4	0	33.3	22.2		17	83	0	0		
PHF	.500	.000	.429	.750	.472	.000	.417	.250	.000	.375	.500	.000	.750	.500	.750	.500	.696	.000	.000	.783	.759
Cars & Peds	1	0	10	3	14	0	9	2	0	11	4	0	3	2	9	8	39	0	0	47	81
% Cars & Peds	50.0	0	83.3	100	82.4	0	90.0	100	0	91.7	100	0	100	100	100	100	100	0	0	100	95.3
Trucks & Buses	1	0	2	0	3	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	4
% Trucks & Buses	50.0	0	16.7	0	17.6	0	10.0	0	0	8.3	0	0	0	0	0	0	0	0	0	0	4.7
Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:45 AM

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Walnut Place/Willow Street

E/W: Walnut Street

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171D

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Cars & Peds

	Walnut Place From North				Walnut Street From East				Willow Street From South				Walnut Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	2	0	1	0	0	2	0	1	1	1	3	0	0	11
07:15 AM	0	0	0	1	0	2	0	0	0	0	0	0	3	1	0	0	7
07:30 AM	0	0	0	0	0	3	0	0	0	0	0	1	1	14	0	0	19
07:45 AM	0	0	0	1	0	6	2	0	1	0	1	1	1	14	0	0	27
Total	0	0	0	4	0	12	2	0	3	0	2	3	6	32	0	0	64
08:00 AM	1	0	0	1	0	0	0	0	1	0	0	0	1	8	0	0	12
08:15 AM	0	0	5	0	0	0	0	0	0	0	1	1	2	8	0	0	17
08:30 AM	0	0	5	1	0	3	0	0	2	0	1	0	4	9	0	0	25
08:45 AM	1	0	17	1	0	0	1	0	1	0	0	2	1	2	0	0	26
Total	2	0	27	3	0	3	1	0	4	0	2	3	8	27	0	0	80
Grand Total	2	0	27	7	0	15	3	0	7	0	4	6	14	59	0	0	144
Apprch %	5.6	0	75	19.4	0	83.3	16.7	0	41.2	0	23.5	35.3	19.2	80.8	0	0	
Total %	1.4	0	18.8	4.9	0	10.4	2.1	0	4.9	0	2.8	4.2	9.7	41	0	0	

	Walnut Place From North					Walnut Street From East					Willow Street From South					Walnut Street From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	1	1	0	6	2	0	8	1	0	1	1	3	1	14	0	0	15	27
08:00 AM	1	0	0	1	2	0	0	0	0	0	1	0	0	0	1	1	8	0	0	9	12
08:15 AM	0	0	5	0	5	0	0	0	0	0	0	0	1	1	2	2	8	0	0	10	17
08:30 AM	0	0	5	1	6	0	3	0	0	3	2	0	1	0	3	4	9	0	0	13	25
Total Volume	1	0	10	3	14	0	9	2	0	11	4	0	3	2	9	8	39	0	0	47	81
% App. Total	7.1	0	71.4	21.4		0	81.8	18.2	0		44.4	0	33.3	22.2		17	83	0	0		
PHF	.250	.000	.500	.750	.583	.000	.375	.250	.000	.344	.500	.000	.750	.500	.750	.500	.696	.000	.000	.783	.750

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Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Walnut Place/Willow Street

E/W: Walnut Street

City, State: Needham, MA

Client: Bayside/K. Cram

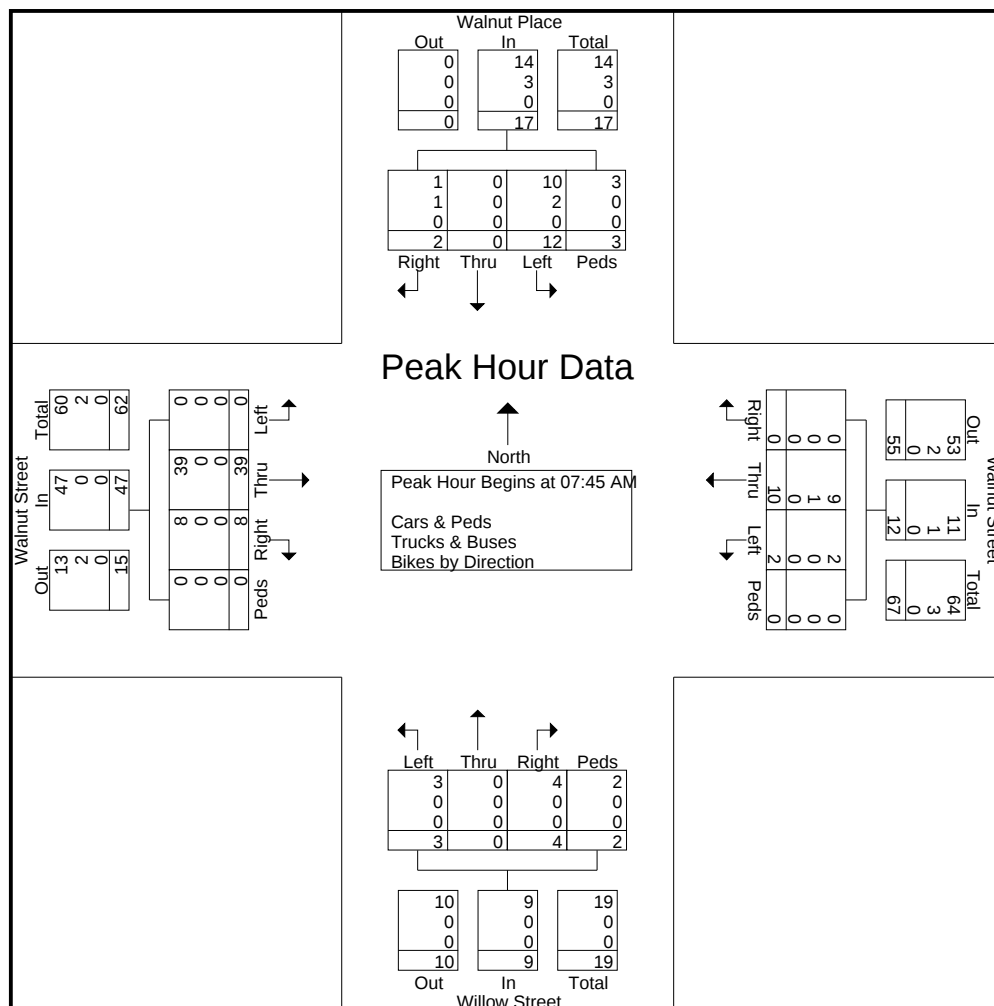
File Name : 05171D

Site Code : 2192633

Start Date : 5/2/2019

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	Walnut Place From North					Walnut Street From East					Willow Street From South					Walnut 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 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	1	1	0	6	2	0	8	1	0	1	1	3	1	14	0	0	15	27
08:00 AM	1	0	0	1	2	0	0	0	0	0	1	0	0	0	1	1	8	0	0	9	12
08:15 AM	0	0	5	0	5	0	1	0	0	1	0	0	1	1	2	2	8	0	0	10	18
08:30 AM	1	0	7	1	9	0	3	0	0	3	2	0	1	0	3	4	9	0	0	13	28
Total Volume	2	0	12	3	17	0	10	2	0	12	4	0	3	2	9	8	39	0	0	47	85
% App. Total	11.8	0	70.6	17.6		0	83.3	16.7	0		44.4	0	33.3	22.2		17	83	0	0		
PHF	.500	.000	.429	.750	.472	.000	.417	.250	.000	.375	.500	.000	.750	.500	.750	.500	.696	.000	.000	.783	.759
Cars & Peds	1	0	10	3	14	0	9	2	0	11	4	0	3	2	9	8	39	0	0	47	81
% Cars & Peds	50.0	0	83.3	100	82.4	0	90.0	100	0	91.7	100	0	100	100	100	100	100	0	0	100	95.3
Trucks & Buses	1	0	2	0	3	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	4
% Trucks & Buses	50.0	0	16.7	0	17.6	0	10.0	0	0	8.3	0	0	0	0	0	0	0	0	0	0	4.7
Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Walnut Place/Willow Street

E/W: Walnut Street

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171DD

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Cars & Peds

	Walnut Place From North				Walnut Street From East				Willow Street From South				Walnut Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	2	0	4	0	0	0	0	0	1	1	3	0	1	12
04:15 PM	0	0	0	1	0	6	0	1	0	0	0	1	0	4	0	1	14
04:30 PM	1	0	0	0	0	3	0	1	1	0	0	0	0	1	0	0	7
04:45 PM	0	0	0	0	0	2	1	0	2	0	0	0	0	3	0	0	8
Total	1	0	0	3	0	15	1	2	3	0	0	2	1	11	0	2	41
05:00 PM	0	0	1	0	0	3	0	0	0	0	0	1	0	5	0	0	10
05:15 PM	1	0	1	0	0	8	1	0	1	0	0	0	0	2	0	1	15
05:30 PM	2	0	2	0	0	5	0	0	0	0	0	1	0	2	0	0	12
05:45 PM	0	0	2	1	0	2	0	0	1	0	0	0	0	3	0	0	9
Total	3	0	6	1	0	18	1	0	2	0	0	2	0	12	0	1	46
06:00 PM	1	0	3	0	0	4	0	0	1	0	1	1	0	2	0	0	13
06:15 PM	0	0	0	3	0	4	0	1	0	0	0	0	0	3	0	1	12
Grand Total	5	0	9	7	0	41	2	3	6	0	1	5	1	28	0	4	112
Apprch %	23.8	0	42.9	33.3	0	89.1	4.3	6.5	50	0	8.3	41.7	3	84.8	0	12.1	
Total %	4.5	0	8	6.2	0	36.6	1.8	2.7	5.4	0	0.9	4.5	0.9	25	0	3.6	

	Walnut Place From North					Walnut Street From East					Willow Street From South					Walnut Street From West					Int. Total
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	
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
05:15 PM	1	0	1	0	2	0	8	1	0	9	1	0	0	0	1	0	2	0	1	3	15
05:30 PM	2	0	2	0	4	0	5	0	0	5	0	0	0	1	1	0	2	0	0	2	12
05:45 PM	0	0	2	1	3	0	2	0	0	2	1	0	0	0	1	0	3	0	0	3	9
06:00 PM	1	0	3	0	4	0	4	0	0	4	1	0	1	1	3	0	2	0	0	2	13
Total Volume	4	0	8	1	13	0	19	1	0	20	3	0	1	2	6	0	9	0	1	10	49
% App. Total	30.8	0	61.5	7.7		0	95	5	0		50	0	16.7	33.3		0	90	0	10		
PHF	.500	.000	.667	.250	.813	.000	.594	.250	.000	.556	.750	.000	.250	.500	.500	.000	.750	.000	.250	.833	.817

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Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Walnut Place/Willow Street

E/W: Walnut Street

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171DD

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

Groups Printed- Bikes by Direction

	Walnut Place From North				Walnut Street From East				Willow Street From South				Walnut Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	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
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	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
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total %																	

	Walnut Place From North					Walnut Street From East					Willow Street From South					Walnut Street From West					Int. Total
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	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

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Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Walnut Place/Willow Street

E/W: Walnut Street

City, State: Needham, MA

Client: Bayside/K. Cram

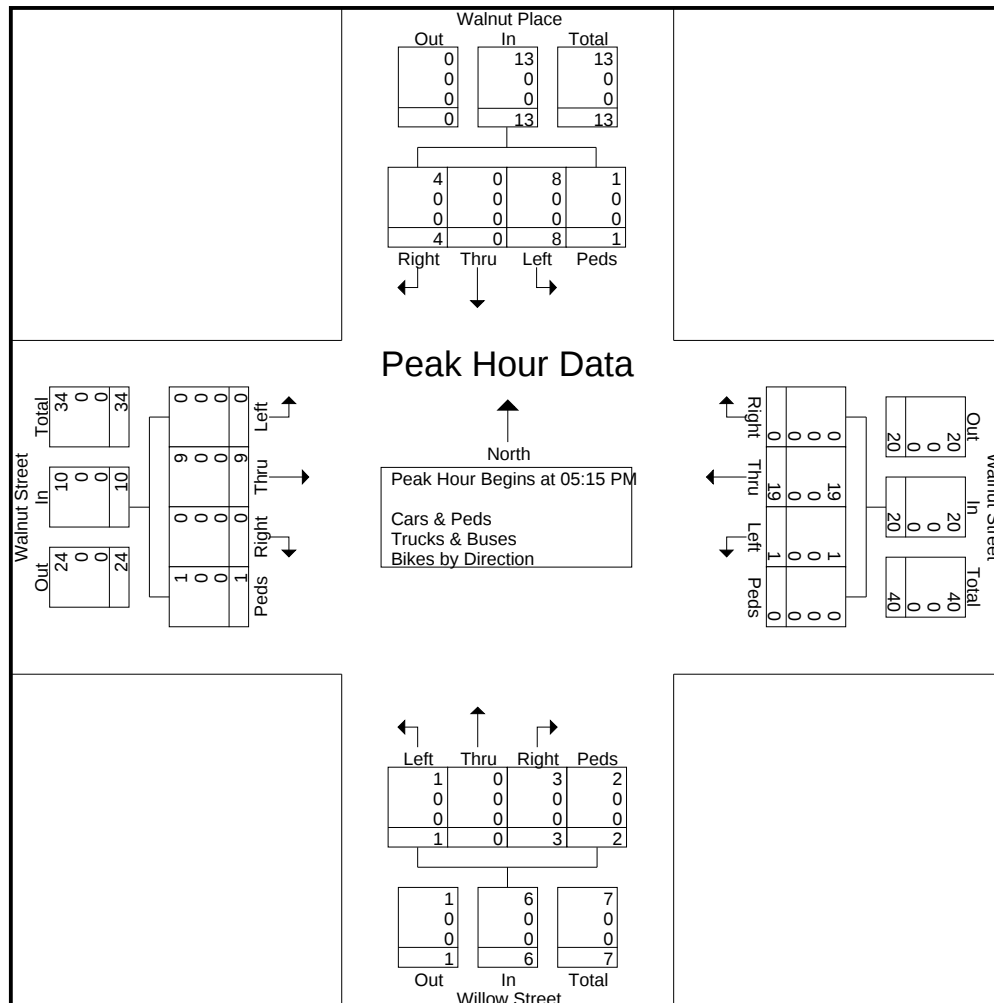
File Name : 05171DD

Site Code : 2192633

Start Date : 5/2/2019

Page No : 1

	Walnut Place From North					Walnut Street From East					Willow Street From South					Walnut 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 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
05:15 PM	1	0	1	0	2	0	8	1	0	9	1	0	0	0	1	0	2	0	1	3	15
05:30 PM	2	0	2	0	4	0	5	0	0	5	0	0	0	1	1	0	2	0	0	2	12
05:45 PM	0	0	2	1	3	0	2	0	0	2	1	0	0	0	1	0	3	0	0	3	9
06:00 PM	1	0	3	0	4	0	4	0	0	4	1	0	1	1	3	0	2	0	0	2	13
Total Volume	4	0	8	1	13	0	19	1	0	20	3	0	1	2	6	0	9	0	1	10	49
% App. Total	30.8	0	61.5	7.7		0	95	5	0		50	0	16.7	33.3		0	90	0	10		
PHF	.500	.000	.667	.250	.813	.000	.594	.250	.000	.556	.750	.000	.250	.500	.500	.000	.750	.000	.250	.833	.817
Cars & Peds	4	0	8	1	13	0	19	1	0	20	3	0	1	2	6	0	9	0	1	10	49
% Cars & Peds	100	0	100	100	100	0	100	100	0	100	100	0	100	100	100	0	100	0	100	100	100
Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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Client: Bayside / K. Cram

Page No : 1

	Walnut Place From North				Walnut Street From East				Willow Street From South				Walnut Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
07:15 AM	0	0	0	0	0	4	0	0	0	0	0	1	1	1	7	0	14
07:30 AM	0	0	0	0	0	4	1	0	0	0	0	0	1	0	11	0	17
07:45 AM	0	0	0	1	0	6	0	0	2	0	0	0	0	0	4	0	14
Total	0	0	0	1	0	17	1	0	2	0	1	2	1	22	0	1	48
08:00 AM	0	0	1	3	0	1	0	0	2	0	0	0	1	4	0	0	12
08:15 AM	1	0	1	0	0	3	0	0	0	0	0	0	0	1	0	0	6
08:30 AM	1	1	10	1	0	1	0	0	0	0	0	1	0	5	0	0	20
08:45 AM	0	0	20	0	0	0	0	0	2	0	3	1	0	4	0	0	30
Total	2	1	32	4	0	5	0	0	4	0	3	2	1	14	0	0	68
Grand Total	2	1	32	5	0	22	1	0	6	0	4	4	2	36	0	1	116
Apprch %	5	2.5	80	12.5	0	95.7	4.3	0	42.9	0	28.6	28.6	5.1	92.3	0	2.6	
Total %	1.7	0.9	27.6	4.3	0	19	0.9	0	5.2	0	3.4	3.4	1.7	31	0	0.9	
Cars & Peds	1	0	31	5	0	21	1	0	6	0	4	4	2	35	0	1	111
% Cars & Peds	50	0	96.9	100	0	95.5	100	0	100	0	100	100	100	97.2	0	100	95.7
Trucks & Buses	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	4
% Trucks & Buses	50	100	3.1	0	0	4.5	0	0	0	0	0	0	0	0	0	0	3.4
Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	2.8	0	0	0.9

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Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Walnut Place/Willow Street

E/W: Walnut Street

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171F

Site Code : 2192633

Start Date : 5/7/2019

Page No : 1

Groups Printed- Cars & Peds

	Walnut Place From North				Walnut Street From East				Willow Street From South				Walnut Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
07:15 AM	0	0	0	0	0	4	0	0	0	0	1	1	1	7	0	0	14
07:30 AM	0	0	0	0	0	4	1	0	0	0	0	1	0	10	0	0	16
07:45 AM	0	0	0	1	0	6	0	0	2	0	0	0	0	4	0	1	14
Total	0	0	0	1	0	17	1	0	2	0	1	2	1	21	0	1	47
08:00 AM	0	0	1	3	0	1	0	0	2	0	0	0	1	4	0	0	12
08:15 AM	1	0	1	0	0	2	0	0	0	0	0	0	0	1	0	0	5
08:30 AM	0	0	9	1	0	1	0	0	0	0	0	1	0	5	0	0	17
08:45 AM	0	0	20	0	0	0	0	0	2	0	3	1	0	4	0	0	30
Total	1	0	31	4	0	4	0	0	4	0	3	2	1	14	0	0	64
Grand Total	1	0	31	5	0	21	1	0	6	0	4	4	2	35	0	1	111
Apprch %	2.7	0	83.8	13.5	0	95.5	4.5	0	42.9	0	28.6	28.6	5.3	92.1	0	2.6	
Total %	0.9	0	27.9	4.5	0	18.9	0.9	0	5.4	0	3.6	3.6	1.8	31.5	0	0.9	

	Walnut Place From North					Walnut Street From East					Willow Street From South					Walnut Street From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	1	3	4	0	1	0	0	1	2	0	0	0	2	1	4	0	0	5	12
08:15 AM	1	0	1	0	2	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	5
08:30 AM	0	0	9	1	10	0	1	0	0	1	0	0	0	1	1	0	5	0	0	5	17
08:45 AM	0	0	20	0	20	0	0	0	0	0	2	0	3	1	6	0	4	0	0	4	30
Total Volume	1	0	31	4	36	0	4	0	0	4	4	0	3	2	9	1	14	0	0	15	64
% App. Total	2.8	0	86.1	11.1		0	100	0	0		44.4	0	33.3	22.2		6.7	93.3	0	0		
PHF	.250	.000	.388	.333	.450	.000	.500	.000	.000	.500	.500	.000	.250	.500	.375	.250	.700	.000	.000	.750	.533

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N/S: Walnut Place/Willow Street

E/W: Walnut Street

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171F

Site Code : 2192633

Start Date : 5/7/2019

Page No : 1

Groups Printed- Bikes by Direction

	Walnut Place From North				Walnut Street From East				Willow Street From South				Walnut Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	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
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Apprch %	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	

	Walnut Place From North					Walnut Street From East					Willow Street From South					Walnut Street From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Walnut Place/Willow Street

E/W: Walnut Street

City, State: Needham, MA

Client: Bayside/K. Cram

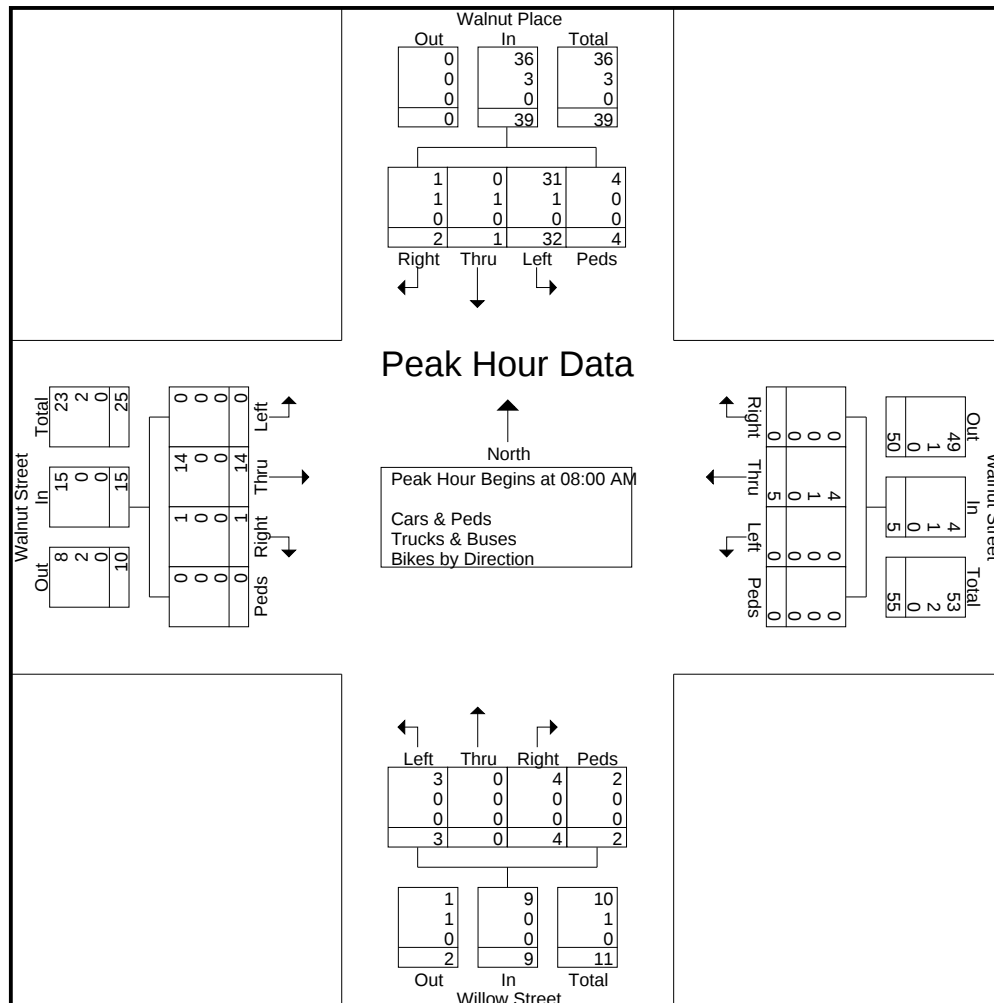
File Name : 05171F

Site Code : 2192633

Start Date : 5/7/2019

Page No : 1

	Walnut Place From North					Walnut Street From East					Willow Street From South					Walnut 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 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	1	3	4	0	1	0	0	1	2	0	0	0	2	1	4	0	0	5	12
08:15 AM	1	0	1	0	2	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	6
08:30 AM	1	1	10	1	13	0	1	0	0	1	0	0	0	1	1	0	5	0	0	5	20
08:45 AM	0	0	20	0	20	0	0	0	0	0	2	0	3	1	6	0	4	0	0	4	30
Total Volume	2	1	32	4	39	0	5	0	0	5	4	0	3	2	9	1	14	0	0	15	68
% App. Total	5.1	2.6	82.1	10.3		0	100	0	0		44.4	0	33.3	22.2		6.7	93.3	0	0		
PHF	.500	.250	.400	.333	.488	.000	.417	.000	.000	.417	.500	.000	.250	.500	.375	.250	.700	.000	.000	.750	.567
Cars & Peds	1	0	31	4	36	0	4	0	0	4	4	0	3	2	9	1	14	0	0	15	64
% Cars & Peds	50.0	0	96.9	100	92.3	0	80.0	0	0	80.0	100	0	100	100	100	100	100	0	0	100	94.1
Trucks & Buses	1	1	1	0	3	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	4
% Trucks & Buses	50.0	100	3.1	0	7.7	0	20.0	0	0	20.0	0	0	0	0	0	0	0	0	0	0	5.9
Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



tel (781) 587-0086 cell (781) 439-4999

Client: Bayside / K. Cram

Page No : 1

	Walnut Place From North				Walnut Street From East				Willow Street From South				Walnut Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	2	0	1	0	0	3	1	0	1	0	0	1	1	4	0	0	14
04:15 PM	0	0	1	0	0	2	0	0	0	0	0	0	0	3	0	0	6
04:30 PM	0	0	0	1	0	9	1	0	0	0	1	0	1	2	0	0	15
04:45 PM	0	0	0	4	0	6	1	1	0	0	1	0	1	1	0	0	15
Total	2	0	2	5	0	20	3	1	1	0	2	1	3	10	0	0	50
05:00 PM	0	0	0	1	0	4	2	0	0	0	0	0	0	1	0	0	8
05:15 PM	0	0	2	0	0	3	0	0	1	0	0	2	1	4	0	0	13
05:30 PM	0	0	2	1	0	4	2	0	0	0	0	2	0	1	0	0	12
05:45 PM	2	0	3	0	0	4	0	0	1	0	0	1	0	1	0	0	12
Total	2	0	7	2	0	15	4	0	2	0	0	5	1	7	0	0	45
06:00 PM	0	0	3	2	0	1	0	0	0	0	0	0	0	4	0	2	12
06:15 PM	1	0	5	0	0	2	0	0	0	0	2	0	0	4	0	1	15
Grand Total	5	0	17	9	0	38	7	1	3	0	4	6	4	25	0	3	122
Apprch %	16.1	0	54.8	29	0	82.6	15.2	2.2	23.1	0	30.8	46.2	12.5	78.1	0	9.4	
Total %	4.1	0	13.9	7.4	0	31.1	5.7	0.8	2.5	0	3.3	4.9	3.3	20.5	0	2.5	
Cars & Peds	5	0	17	9	0	38	7	1	3	0	4	6	4	23	0	3	120
% Cars & Peds	100	0	100	100	0	100	100	100	100	0	100	100	100	92	0	100	98.4
Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	1.0

[illegible]

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Walnut Place/Willow Street

E/W: Walnut Street

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171FF

Site Code : 2192633

Start Date : 5/7/2019

Page No : 1

Groups Printed- Cars & Peds

	Walnut Place From North				Walnut Street From East				Willow Street From South				Walnut Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	2	0	1	0	0	3	1	0	1	0	0	1	1	4	0	0	14
04:15 PM	0	0	1	0	0	2	0	0	0	0	0	0	0	3	0	0	6
04:30 PM	0	0	0	1	0	9	1	0	0	0	1	0	1	2	0	0	15
04:45 PM	0	0	0	4	0	6	1	1	0	0	1	0	1	1	0	0	15
Total	2	0	2	5	0	20	3	1	1	0	2	1	3	10	0	0	50
05:00 PM	0	0	0	1	0	4	2	0	0	0	0	0	0	1	0	0	8
05:15 PM	0	0	2	0	0	3	0	0	1	0	0	2	1	4	0	0	13
05:30 PM	0	0	2	1	0	4	2	0	0	0	0	2	0	1	0	0	12
05:45 PM	2	0	3	0	0	4	0	0	1	0	0	1	0	1	0	0	12
Total	2	0	7	2	0	15	4	0	2	0	0	5	1	7	0	0	45
06:00 PM	0	0	3	2	0	1	0	0	0	0	0	0	0	2	0	2	10
06:15 PM	1	0	5	0	0	2	0	0	0	0	2	0	0	4	0	1	15
Grand Total	5	0	17	9	0	38	7	1	3	0	4	6	4	23	0	3	120
Apprch %	16.1	0	54.8	29	0	82.6	15.2	2.2	23.1	0	30.8	46.2	13.3	76.7	0	10	
Total %	4.2	0	14.2	7.5	0	31.7	5.8	0.8	2.5	0	3.3	5	3.3	19.2	0	2.5	

	Walnut Place From North					Walnut Street From East					Willow Street From South					Walnut Street From West					Int. Total
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	
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	1	1	0	9	1	0	10	0	0	1	0	1	1	2	0	0	3	15
04:45 PM	0	0	0	4	4	0	6	1	1	8	0	0	1	0	1	1	1	0	0	2	15
05:00 PM	0	0	0	1	1	0	4	2	0	6	0	0	0	0	0	0	1	0	0	1	8
05:15 PM	0	0	2	0	2	0	3	0	0	3	1	0	0	2	3	1	4	0	0	5	13
Total Volume	0	0	2	6	8	0	22	4	1	27	1	0	2	2	5	3	8	0	0	11	51
% App. Total	0	0	25	75		0	81.5	14.8	3.7		20	0	40	40		27.3	72.7	0	0		
PHF	.000	.000	.250	.375	.500	.000	.611	.500	.250	.675	.250	.000	.500	.250	.417	.750	.500	.000	.000	.550	.850

tel (781) 587-0086 cell (781) 439-4999

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Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Walnut Place/Willow Street

E/W: Walnut Street

City, State: Needham, MA

Client: Bayside/K. Cram

File Name : 05171FF

Site Code : 2192633

Start Date : 5/7/2019

Page No : 1

Groups Printed- Bikes by Direction

	Walnut Place From North				Walnut Street From East				Willow Street From South				Walnut Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	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
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	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
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Apprch %	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	

	Walnut Place From North					Walnut Street From East					Willow Street From South					Walnut Street From West					Int. Total
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	
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Walnut Place/Willow Street

E/W: Walnut Street

City, State: Needham, MA

Client: Bayside/K. Cram

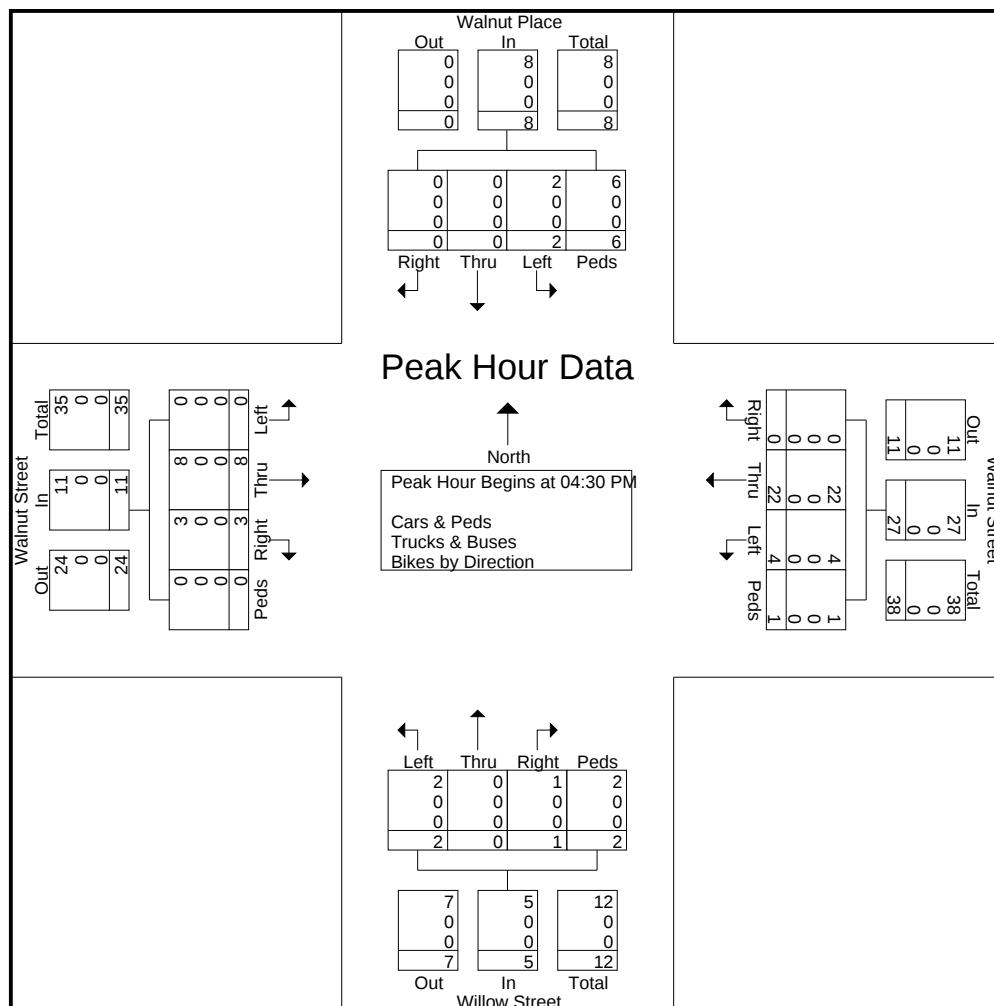
File Name : 05171FF

Site Code : 2192633

Start Date : 5/7/2019

Page No : 1

	Walnut Place From North					Walnut Street From East					Willow Street From South					Walnut 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 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	1	1	0	9	1	0	10	0	0	1	0	1	1	2	0	0	3	15
04:45 PM	0	0	0	4	4	0	6	1	1	8	0	0	1	0	1	1	1	0	0	2	15
05:00 PM	0	0	0	1	1	0	4	2	0	6	0	0	0	0	0	0	1	0	0	1	8
05:15 PM	0	0	2	0	2	0	3	0	0	3	1	0	0	2	3	1	4	0	0	5	13
Total Volume	0	0	2	6	8	0	22	4	1	27	1	0	2	2	5	3	8	0	0	11	51
% App. Total	0	0	25	75		0	81.5	14.8	3.7		20	0	40	40		27.3	72.7	0	0		
PHF	.000	.000	.250	.375	.500	.000	.611	.500	.250	.675	.250	.000	.500	.250	.417	.750	.500	.000	.000	.550	.850
Cars & Peds	0	0	2	6	8	0	22	4	1	27	1	0	2	2	5	3	8	0	0	11	51
% Cars & Peds	0	0	100	100	100	0	100	100	100	100	100	0	100	100	100	100	100	0	0	100	100
Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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File Name : 05171EE
Site Code : 2192633
Start Date : 5/7/2019
Page No : 1

	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	0	0	0	0	114	43	0	16	0	13	0	20	122	0	0	328
04:15 PM	2	0	0	0	0	109	57	0	11	0	7	2	20	104	1	0	313
04:30 PM	3	0	0	0	0	95	48	0	14	0	6	4	16	94	0	0	280
04:45 PM	0	0	0	2	0	119	53	0	18	1	4	0	19	97	0	0	313
Total	5	0	0	2	0	437	201	0	59	1	30	6	75	417	1	0	1234
05:00 PM	0	0	1	0	0	103	49	0	14	0	3	0	20	95	0	0	285
05:15 PM	2	0	1	0	0	128	51	0	20	0	6	1	14	109	0	0	332
05:30 PM	0	0	0	8	1	112	57	0	13	1	5	1	20	118	0	0	336
05:45 PM	0	0	0	1	0	110	68	0	22	0	6	0	24	108	1	0	340
Total	2	0	2	9	1	453	225	0	69	1	20	2	78	430	1	0	1293
06:00 PM	0	0	0	0	0	112	54	0	18	0	6	0	19	111	1	0	321
06:15 PM	0	0	0	6	0	106	47	0	18	0	4	3	10	113	0	0	307
Grand Total	7	0	2	17	1	1108	527	0	164	2	60	11	182	1071	3	0	3155
Approch %	26.9	0	7.7	65.4	0.1	67.7	32.2	0	69.2	0.8	25.3	4.6	14.5	85.3	0.2	0	
Total %	0.2	0	0.1	0.5	0	35.1	16.7	0	5.2	0.1	1.9	0.3	5.8	33.9	0.1	0	
Cars & Peds	7	0	2	17	1	1091	526	0	162	2	60	11	182	1059	3	0	3123
% Cars & Peds	100	0	100	100	100	98.5	99.8	0	98.8	100	100	100	100	98.9	100	0	99
Trucks & Buses	0	0	0	0	0	6	1	0	2	0	0	0	0	6	0	0	15
% Trucks & Buses	0	0	0	0	0	0.5	0.2	0	1.2	0	0	0	0	0.6	0	0	0.5
Bikes by Direction	0	0	0	0	0	11	0	0	0	0	0	0	0	6	0	0	17
% Bikes by Direction	0	0	0	0	0	1	0	0	0	0	0	0	0	0.6	0	0	0.5

[illegible]

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Gage Street/Marked Tree Road
E/W: Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171EE
Site Code : 2192633
Start Date : 5/7/2019
Page No : 1

Groups Printed- Cars & Peds

	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	0	0	0	0	113	43	0	16	0	13	0	20	120	0	0	325
04:15 PM	2	0	0	0	0	104	57	0	11	0	7	2	20	103	1	0	307
04:30 PM	3	0	0	0	0	95	48	0	12	0	6	4	16	94	0	0	278
04:45 PM	0	0	0	2	0	118	53	0	18	1	4	0	19	97	0	0	312
Total	5	0	0	2	0	430	201	0	57	1	30	6	75	414	1	0	1222
05:00 PM	0	0	1	0	0	101	49	0	14	0	3	0	20	92	0	0	280
05:15 PM	2	0	1	0	0	127	51	0	20	0	6	1	14	109	0	0	331
05:30 PM	0	0	0	8	1	111	57	0	13	1	5	1	20	117	0	0	334
05:45 PM	0	0	0	1	0	110	68	0	22	0	6	0	24	108	1	0	340
Total	2	0	2	9	1	449	225	0	69	1	20	2	78	426	1	0	1285
06:00 PM	0	0	0	0	0	108	54	0	18	0	6	0	19	110	1	0	316
06:15 PM	0	0	0	6	0	104	46	0	18	0	4	3	10	109	0	0	300
Grand Total	7	0	2	17	1	1091	526	0	162	2	60	11	182	1059	3	0	3123
Apprch %	26.9	0	7.7	65.4	0.1	67.4	32.5	0	68.9	0.9	25.5	4.7	14.6	85.1	0.2	0	
Total %	0.2	0	0.1	0.5	0	34.9	16.8	0	5.2	0.1	1.9	0.4	5.8	33.9	0.1	0	

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) 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 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
05:15 PM	2	0	1	0	3	0	127	51	0	178	20	0	6	1	27	14	109	0	0	123	331
05:30 PM	0	0	0	8	8	1	111	57	0	169	13	1	5	1	20	20	117	0	0	137	334
05:45 PM	0	0	0	1	1	0	110	68	0	178	22	0	6	0	28	24	108	1	0	133	340
06:00 PM	0	0	0	0	0	0	108	54	0	162	18	0	6	0	24	19	110	1	0	130	316
Total Volume	2	0	1	9	12	1	456	230	0	687	73	1	23	2	99	77	444	2	0	523	1321
% App. Total	16.7	0	8.3	75		0.1	66.4	33.5	0		73.7	1	23.2	2		14.7	84.9	0.4	0		
PHF	.250	.000	.250	.281	.375	.250	.898	.846	.000	.965	.830	.250	.958	.500	.884	.802	.949	.500	.000	.954	.971

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Gage Street/Marked Tree Road
E/W: Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171EE
Site Code : 2192633
Start Date : 5/7/2019
Page No : 1

Groups Printed- Trucks & Buses

	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
04:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	0	2	0	0	0	0	2	0	0	6
05:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
06:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
06:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	3
Grand Total	0	0	0	0	0	6	1	0	2	0	0	0	0	6	0	0	15
Apprch %	0	0	0	0	0	85.7	14.3	0	100	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	40	6.7	0	13.3	0	0	0	0	40	0	0	

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:30 PM																					
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
06:15 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0	2	3
Total Volume	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	4	0	0	4	7
% App. Total	0	0	0	0		0	66.7	33.3	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.375	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.583

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Gage Street/Marked Tree Road
E/W: Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171EE
Site Code : 2192633
Start Date : 5/7/2019
Page No : 1

Groups Printed- Bikes by Direction

	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	5
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	5	0	0	0	0	0	0	0	1	0	0	6
05:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	4
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	5
06:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
06:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	4
Grand Total	0	0	0	0	0	11	0	0	0	0	0	0	0	6	0	0	17
Apprch %	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	64.7	0	0	0	0	0	0	0	35.3	0	0	

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	5
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
Total Volume	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	10
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.375	.000	.000	.375	.000	.000	.000	.000	.000	.000	.333	.000	.000	.333	.500

Transportation Data Corporation

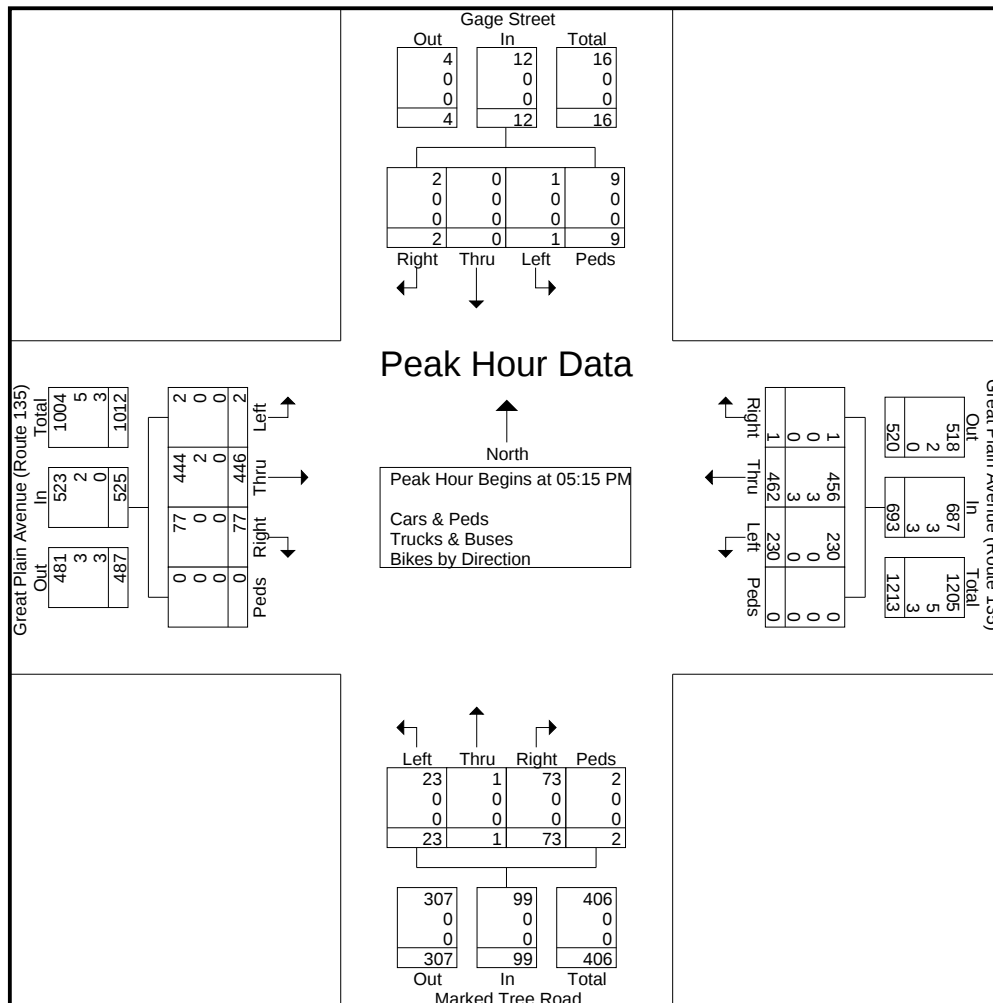
Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Gage Street/Marked Tree Road
E/W: Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171EE
Site Code : 2192633
Start Date : 5/7/2019
Page No : 1

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) 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 04:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
05:15 PM	2	0	1	0	3	0	128	51	0	179	20	0	6	1	27	14	109	0	0	123	332
05:30 PM	0	0	0	8	8	1	112	57	0	170	13	1	5	1	20	20	118	0	0	138	336
05:45 PM	0	0	0	1	1	0	110	68	0	178	22	0	6	0	28	24	108	1	0	133	340
06:00 PM	0	0	0	0	0	0	112	54	0	166	18	0	6	0	24	19	111	1	0	131	321
Total Volume	2	0	1	9	12	1	462	230	0	693	73	1	23	2	99	77	446	2	0	525	1329
% App. Total	16.7	0	8.3	75		0.1	66.7	33.2	0		73.7	1	23.2	2		14.7	85	0.4	0		
PHF	.250	.000	.250	.281	.375	.250	.902	.846	.000	.968	.830	.250	.958	.500	.884	.802	.945	.500	.000	.951	.977
Cars & Peds	2	0	1	9	12	1	456	230	0	687	73	1	23	2	99	77	444	2	0	523	1321
% Cars & Peds	100	0	100	100	100	100	98.7	100	0	99.1	100	100	100	100	100	100	99.6	100	0	99.6	99.4
Trucks & Buses	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
% Trucks & Buses	0	0	0	0	0	0	0.6	0	0	0.4	0	0	0	0	0	0	0.4	0	0	0.4	0.4
Bikes by Direction	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
% Bikes by Direction	0	0	0	0	0	0	0.6	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0.2



Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Gage Street/Marked Tree Road
E/W: Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171E
Site Code : 2192633
Start Date : 5/7/2019
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	2	0	53	9	0	35	0	11	1	0	78	1	0	190
07:15 AM	2	0	0	7	0	79	8	0	48	0	17	2	6	93	0	0	262
07:30 AM	0	0	0	4	0	104	7	0	40	0	28	0	4	109	0	0	296
07:45 AM	4	0	1	1	0	120	12	0	49	1	30	1	2	125	0	0	346
Total	6	0	1	14	0	356	36	0	172	1	86	4	12	405	1	0	1094
08:00 AM	2	0	0	1	0	104	21	1	43	0	32	1	3	89	0	0	297
08:15 AM	0	0	0	1	0	120	19	0	39	0	26	0	7	93	0	0	305
08:30 AM	1	0	0	1	0	110	9	0	52	0	32	3	6	98	0	0	312
08:45 AM	1	0	1	1	0	104	8	0	62	0	43	5	5	110	0	0	340
Total	4	0	1	4	0	438	57	1	196	0	133	9	21	390	0	0	1254
Grand Total	10	0	2	18	0	794	93	1	368	1	219	13	33	795	1	0	2348
Apprch %	33.3	0	6.7	60	0	89.4	10.5	0.1	61.2	0.2	36.4	2.2	4	95.9	0.1	0	
Total %	0.4	0	0.1	0.8	0	33.8	4	0	15.7	0	9.3	0.6	1.4	33.9	0	0	
Cars & Peds	9	0	1	18	0	771	88	1	362	1	215	13	32	773	0	0	2284
% Cars & Peds	90	0	50	100	0	97.1	94.6	100	98.4	100	98.2	100	97	97.2	0	0	97.3
Trucks & Buses	1	0	1	0	0	20	5	0	5	0	1	0	1	14	1	0	49
% Trucks & Buses	10	0	50	0	0	2.5	5.4	0	1.4	0	0.5	0	3	1.8	100	0	2.1
Bikes by Direction	0	0	0	0	0	3	0	0	1	0	3	0	0	8	0	0	15
% Bikes by Direction	0	0	0	0	0	0.4	0	0	0.3	0	1.4	0	0	1	0	0	0.6

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	4	0	1	1	6	0	120	12	0	132	49	1	30	1	81	2	125	0	0	127	346
08:00 AM	2	0	0	1	3	0	104	21	1	126	43	0	32	1	76	3	89	0	0	92	297
08:15 AM	0	0	0	1	1	0	120	19	0	139	39	0	26	0	65	7	93	0	0	100	305
08:30 AM	1	0	0	1	2	0	110	9	0	119	52	0	32	3	87	6	98	0	0	104	312
Total Volume	7	0	1	4	12	0	454	61	1	516	183	1	120	5	309	18	405	0	0	423	1260
% App. Total	58.3	0	8.3	33.3		0	88	11.8	0.2		59.2	0.3	38.8	1.6		4.3	95.7	0	0		
PHF	.438	.000	.250	1.00	.500	.000	.946	.726	.250	.928	.880	.250	.938	.417	.888	.643	.810	.000	.000	.833	.910
Cars & Peds	6	0	0	4	10	0	440	57	1	498	178	1	119	5	303	18	392	0	0	410	1221
% Cars & Peds	85.7	0	0	100	83.3	0	96.9	93.4	100	96.5	97.3	100	99.2	100	98.1	100	96.8	0	0	96.9	96.9
Trucks & Buses	1	0	1	0	2	0	12	4	0	16	4	0	1	0	5	0	8	0	0	8	31
% Trucks & Buses	14.3	0	100	0	16.7	0	2.6	6.6	0	3.1	2.2	0	0.8	0	1.6	0	2.0	0	0	1.9	2.5
Bikes by Direction	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	5	0	0	5	8
% Bikes by Direction	0	0	0	0	0	0	0.4	0	0	0.4	0.5	0	0	0	0.3	0	1.2	0	0	1.2	0.6

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

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City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171E
Site Code : 2192633
Start Date : 5/7/2019
Page No : 1

Groups Printed- Cars & Peds

	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	2	0	52	8	0	35	0	10	1	0	73	0	0	181
07:15 AM	2	0	0	7	0	76	8	0	47	0	16	2	6	91	0	0	255
07:30 AM	0	0	0	4	0	101	7	0	40	0	27	0	3	108	0	0	290
07:45 AM	3	0	0	1	0	115	12	0	46	1	30	1	2	120	0	0	331
Total	5	0	0	14	0	344	35	0	168	1	83	4	11	392	0	0	1057
08:00 AM	2	0	0	1	0	102	17	1	43	0	32	1	3	86	0	0	288
08:15 AM	0	0	0	1	0	114	19	0	38	0	26	0	7	91	0	0	296
08:30 AM	1	0	0	1	0	109	9	0	51	0	31	3	6	95	0	0	306
08:45 AM	1	0	1	1	0	102	8	0	62	0	43	5	5	109	0	0	337
Total	4	0	1	4	0	427	53	1	194	0	132	9	21	381	0	0	1227
Grand Total	9	0	1	18	0	771	88	1	362	1	215	13	32	773	0	0	2284
Apprch %	32.1	0	3.6	64.3	0	89.7	10.2	0.1	61.3	0.2	36.4	2.2	4	96	0	0	
Total %	0.4	0	0	0.8	0	33.8	3.9	0	15.8	0	9.4	0.6	1.4	33.8	0	0	

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	2	0	0	1	3	0	102	17	1	120	43	0	32	1	76	3	86	0	0	89	288
08:15 AM	0	0	0	1	1	0	114	19	0	133	38	0	26	0	64	7	91	0	0	98	296
08:30 AM	1	0	0	1	2	0	109	9	0	118	51	0	31	3	85	6	95	0	0	101	306
08:45 AM	1	0	1	1	3	0	102	8	0	110	62	0	43	5	110	5	109	0	0	114	337
Total Volume	4	0	1	4	9	0	427	53	1	481	194	0	132	9	335	21	381	0	0	402	1227
% App. Total	44.4	0	11.1	44.4		0	88.8	11	0.2		57.9	0	39.4	2.7		5.2	94.8	0	0		
PHF	.500	.000	.250	1.00	.750	.000	.936	.697	.250	.904	.782	.000	.767	.450	.761	.750	.874	.000	.000	.882	.910

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Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

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Page No : 1

Groups Printed- Trucks & Buses

	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	4	1	0	7
07:15 AM	0	0	0	0	0	3	0	0	1	0	0	0	0	1	0	0	5
07:30 AM	0	0	0	0	0	3	0	0	0	0	0	0	1	1	0	0	5
07:45 AM	1	0	1	0	0	3	0	0	2	0	0	0	0	4	0	0	11
Total	1	0	1	0	0	10	1	0	3	0	0	0	1	10	1	0	28
08:00 AM	0	0	0	0	0	2	4	0	0	0	0	0	0	2	0	0	8
08:15 AM	0	0	0	0	0	6	0	0	1	0	0	0	0	1	0	0	8
08:30 AM	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	4
08:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	10	4	0	2	0	1	0	0	4	0	0	21
Grand Total	1	0	1	0	0	20	5	0	5	0	1	0	1	14	1	0	49
Apprch %	50	0	50	0	0	80	20	0	83.3	0	16.7	0	6.2	87.5	6.2	0	
Total %	2	0	2	0	0	40.8	10.2	0	10.2	0	2	0	2	28.6	2	0	

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) From West					Int. Total
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	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	1	0	0	2	5
07:45 AM	1	0	1	0	2	0	3	0	0	3	2	0	0	0	2	0	4	0	0	4	11
08:00 AM	0	0	0	0	0	0	2	4	0	6	0	0	0	0	0	0	2	0	0	2	8
08:15 AM	0	0	0	0	0	0	6	0	0	6	1	0	0	0	1	0	1	0	0	1	8
Total Volume	1	0	1	0	2	0	14	4	0	18	3	0	0	0	3	1	8	0	0	9	32
% App. Total	50	0	50	0		0	77.8	22.2	0		100	0	0	0		11.1	88.9	0	0		
PHF	.250	.000	.250	.000	.250	.000	.583	.250	.000	.750	.375	.000	.000	.000	.375	.250	.500	.000	.000	.563	.727

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Gage Street/Marked Tree Road
E/W: Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171E
Site Code : 2192633
Start Date : 5/7/2019
Page No : 1

Groups Printed- Bikes by Direction

	Gage Street From North				Great Plain Avenue (Route 135) From East				Marked Tree Road From South				Great Plain Avenue (Route 135) From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	2	0	0	1	0	0	0	0	1	0	0	4
Total	0	0	0	0	0	2	0	0	1	0	3	0	0	3	0	0	9
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
08:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	5	0	0	6
Grand Total	0	0	0	0	0	3	0	0	1	0	3	0	0	8	0	0	15
Apprch %	0	0	0	0	0	100	0	0	25	0	75	0	0	100	0	0	
Total %	0	0	0	0	0	20	0	0	6.7	0	20	0	0	53.3	0	0	

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) 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 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	1	0	0	1	4
Total Volume	0	0	0	0	0	0	2	0	0	2	1	0	3	0	4	0	3	0	0	3	9
% App. Total	0	0	0	0		0	100	0	0		25	0	75	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250	.000	.750	.000	1.00	.000	.750	.000	.000	.750	.563

Transportation Data Corporation

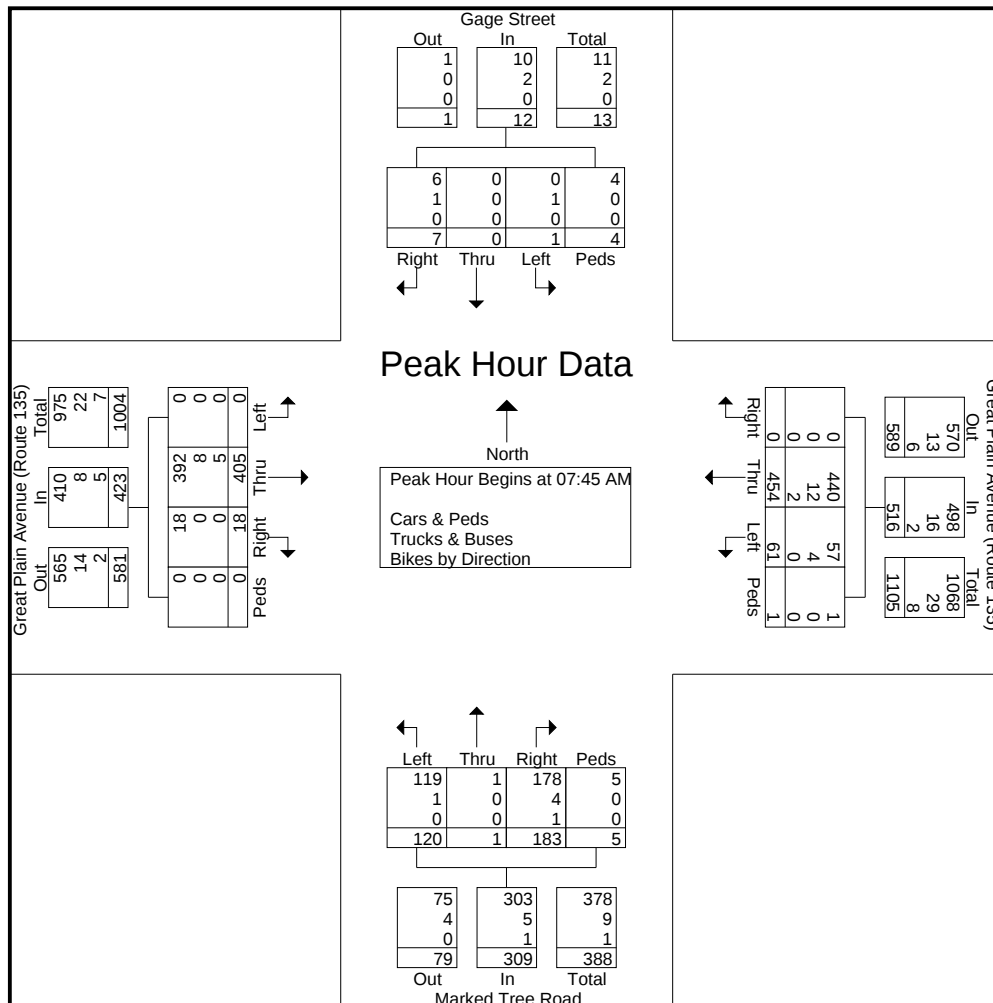
Mario Perone, mperone1@verizon.net

tel (781) 587-0086 cell (781) 439-4999

N/S: Gage Street/Marked Tree Road
E/W: Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Bayside/K. Cram

File Name : 05171E
Site Code : 2192633
Start Date : 5/7/2019
Page No : 1

	Gage Street From North					Great Plain Avenue (Route 135) From East					Marked Tree Road From South					Great Plain Avenue (Route 135) 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 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	4	0	1	1	6	0	120	12	0	132	49	1	30	1	81	2	125	0	0	127	346
08:00 AM	2	0	0	1	3	0	104	21	1	126	43	0	32	1	76	3	89	0	0	92	297
08:15 AM	0	0	0	1	1	0	120	19	0	139	39	0	26	0	65	7	93	0	0	100	305
08:30 AM	1	0	0	1	2	0	110	9	0	119	52	0	32	3	87	6	98	0	0	104	312
Total Volume	7	0	1	4	12	0	454	61	1	516	183	1	120	5	309	18	405	0	0	423	1260
% App. Total	58.3	0	8.3	33.3		0	88	11.8	0.2		59.2	0.3	38.8	1.6		4.3	95.7	0	0		
PHF	.438	.000	.250	1.00	.500	.000	.946	.726	.250	.928	.880	.250	.938	.417	.888	.643	.810	.000	.000	.833	.910
Cars & Peds	6	0	0	4	10	0	440	57	1	498	178	1	119	5	303	18	392	0	0	410	1221
% Cars & Peds	85.7	0	0	100	83.3	0	96.9	93.4	100	96.5	97.3	100	99.2	100	98.1	100	96.8	0	0	96.9	96.9
Trucks & Buses	1	0	1	0	2	0	12	4	0	16	4	0	1	0	5	0	8	0	0	8	31
% Trucks & Buses	14.3	0	100	0	16.7	0	2.6	6.6	0	3.1	2.2	0	0.8	0	1.6	0	2.0	0	0	1.9	2.5
Bikes by Direction	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	5	0	0	5	8
% Bikes by Direction	0	0	0	0	0	0	0.4	0	0	0.4	0.5	0	0	0	0.3	0	1.2	0	0	1.2	0.6



Seasonal Adjustment Worksheets

Massachusetts Highway Department

H8502: Monthly Hourly Volume for February 2017

Location ID:	H8502										Seasonal Factor Group:										U1-Boston									
County:	Norfolk										Daily Factor Group:																			
Functional Class	1										Axle Factor Group:										U1-Boston									
Location:	Interstate 95, North of Route 9										Growth Factor Group:																			
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL					
1	785	580	445	669	1255	3651	8373	11472	11974	10335	7866	7611	8034	8589	9865	9173	9155	10438	9491	6712	4667	3774	2680	1746	149340					
2	934	576	497	709	1375	4858	9975	12226	13092	11005	9238	8933	8934	9375	9840	9062	9681	10164	9384	6662	4914	3911	2755	1891	159991					
3	1032	688	534	726	1421	4623	9221	11681	11058	10244	9085	9136	9455	9297	8980	9848	9908	10586	9661	6997	4684	4021	3359	2494	158739					
4	1576	948	669	593	746	1583	2828	4361	5929	7240	8289	9270	9703	9637	9341	9414	9249	9219	7831	5669	4291	3941	3538	2692	128557					
5	1524	836	686	452	339	565	1411	2362	3417	4673	6152	7118	7721	8409	8097	8115	8042	7984	4515	2343	2425	2562	2186	5330	97264					
6	1821	671	455	527	1216	4321	9223	12285	12096	10029	8957	8368	8281	8389	9883	9488	9523	10447	8078	5766	4158	3246	2298	1628	151154					
7	853	532	526	626	1312	4737	9609	11836	11186	9391	6655	6796	6347	6254	7042	7176	7765	8358	7543	4313	2946	2478	1770	1376	127427					
8	791	541	459	656	1226	3842	6470	7336	10753	9152	9148	8490	8577	8987	9318	9720	9229	9190	9309	7385	5419	4270	2782	1878	144928					
9	1227	786	646	740	1185	2506	3769	3405	1431	984	2154	1874	1717	1583	1676	1630	1150	1109	1151	853	914	957	841	842	35130					
10	655	483	469	487	1064	3292	6867	8931	9128	8583	7922	7921	8611	9181	10366	10860	10488	10816	9753	6877	4616	3707	3112	2306	146495					
11	1543	895	645	561	607	1522	2898	4166	4934	5496	6604	7080	7650	7670	7432	7832	7582	7442	6645	5122	4111	3629	3307	2621	107994					
12	1495	960	619	441	362	679	1539	2459	3346	4509	5423	6186	5864	4809	4626	5107	4219	3688	2556	2257	1612	1308	1092	1008	66164					
13	563	502	481	447	744	2251	4032	4306	4372	4895	4600	4920	4985	5050	5665	5887	5808	6665	5842	4208	3017	2542	1972	1434	85188					
14	874	638	560	698	1313	4596	8900	11404	12237	10292	9753	8823	8387	8949	8912	8626	8874	9731	8976	7406	4327	3520	2521	1862	152179					
15	1092	633	583	740	1384	4655	9122	11992	12660	11439	8833	8694	8688	8668	9033	8687	8859	9058	8752	6643	3850	3166	2321	1416	150968					
16	775	581	440	645	1268	3862	8137	10992	12201	10957	8749	8262	8443	8803	10992	9086	9643	9921	9508	7104	5232	4217	2931	1956	154705					
17	1101	747	601	682	1396	4677	9656	11833	10646	10140	9602	9379	10106	10117	9556	11441	12116	11061	10063	8141	5435	4141	3274	2443	168354					
18	1500	940	657	596	811	1508	2684	4182	5885	7268	8608	9620	9754	10049	9624	9815	9201	8584	7424	5724	4392	3891	3578	2622	128917					
19	1520	979	718	466	404	624	1327	2159	3348	4987	6785	8108	8508	8562	8297	8574	8183	7726	7017	5390	4322	3207	2391	1634	105236					
20	991	559	424	577	936	2736	5258	6480	6756	7339	8082	8706	8911	9022	9745	9246	9246	8610	7405	5525	4273	3332	2241	1565	127965					
21	866	556	559	562	1518	4955	9336	12221	12711	10201	9240	8471	9368	9310	9411	8980	9158	9748	8787	6558	4421	3409	2510	1621	154477					
22	924	550	465	633	1456	4650	9501	11181	10793	9902	9442	9201	9322	9438	9509	8993	9219	9988	9273	6675	4657	3802	2613	1733	153920					
23	917	655	566	659	1355	4660	9226	11635	12101	10019	9759	9115	9259	9679	8195	8943	8969	9652	9324	7031	5033	3998	2793	1799	155342					
24																														
25	1362	971	694	546	658	1326	2500	3922	5330	6754	8061	9167	9872	9400	8384	8139	8620	8356	7454	5354	3931	3625	2932	2280	119638					
26	1434	921	654	470	361	587	1329	2264	3575	5354	6999	8297	9120	9257	9526	9465	9249	8166	6827	5505	4055	2913	2056	1330	109714					
27	824	573	401	509	1322	4803	9227	11936	12844	10575	8392	8021	8289	8345	9362	8987	9862	10577	9423	6260	4215	3078	2494	1551	151870					
28	898	552	543	620	1366	4781	9605	12579	12644	9619	8290	8432	8578	8638	9580	8404	9116	9147	9056	6203	4495	3466	2544	1678	150834					

Massachusetts Highway Department

H8502: Monthly Hourly Volume for April 2017

Location ID:	H8502		Seasonal Factor Group:	U1-Boston																					
County:	Norfolk		Daily Factor Group:																						
Functional Class	1		Axle Factor Group:	U1-Boston																					
Location:	Interstate 95; North of Route 9		Growth Factor Group:																						
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL
1	1233	893	504	395	476	996	1801	2847	3488	4195	4303	4555	5040	5035	5035	5052	5170	4445	3683	3058	3158	3455	3218	2415	74450
2	1450	909	639	474	365	626	1498	2539	3473	5569	7460	8297	9672	9429	9010	9178	8880	8121	6923	5496	5043	3552	2283	1526	112412
3	964	611	572	654	1337	4685	9100	12609	13440	10750	8970	8563	8786	8726	9346	8872	9121	10317	8990	6496	4586	3571	2261	1520	154847
4	893	600	558	691	1154	3803	7461	10375	11554	10209	7172	6819	6539	6642	7572	7534	6965	8025	7869	4879	3456	2962	1989	1345	127066
5	911	713	479	596	1292	4651	8998	11828	12344	10449	8789	8711	8822	9117	10317	8812	8778	9803	9048	6989	4888	3832	2716	1986	154869
6	1169	641	562	748	1434	4885	9469	10253	12155	8501	7508	7410	7093	7403	7315	6808	7426	8566	7308	5039	3853	3355	2484	1710	133095
7	1096	754	608	702	1224	4152	8477	10634	12941	9702	9339	9580	9858	10495	8819	9157	8957	9031	8770	6645	5076	4295	3472	2596	156380
8	1419	1034	648	635	722	1637	3228	5509	7532	8488	9268	9951	10463	9517	9599	8817	9269	9649	8304	6354	5172	4597	3936	3111	138859
9	1674	1065	659	497	372	682	1794	3844	4445	6182	7636	8660	9327	9215	9223	9281	9098	8347	7458	6013	5061	3692	2381	1556	118162
10	923	524	434	561	1277	4797	9648	12707	12787	11230	8643	8330	8170	8636	9580	8669	8616	9196	8679	5983	4657	3951	3103	2036	153137
11	1114	656	547	640	1346	5055	9440	12627	13099	10526	9453	8689	8393	8434	9011	8254	8271	6067	7542	6827	4832	3984	2993	1993	149793
12	1045	596	519	686	1315	4898	9800	12513	12902	10489	9284	8658	9022	9587	7992	8624	7323	8857	9416	7024	5089	4218	2869	2007	154733
13	1078	657	567	761	1496	5104	9890	13129	13221	11214	9531	9317	9480	9713	9674	8959	8740	8920	9369	7713	4540	2944	3051	2001	161069
14	1165	778	616	750	1446	4661	9099	11330	10498	9928	9142	9512	10015	9395	8351	8176	8577	8827	8475	6804	5103	4235	3527	2629	153039
15	1464	955	639	575	697	1592	3132	4894	6162	7457	8697	9631	10009	9488	9671	9747	8693	7138	6421	5662	4777	3983	3385	2497	127366
16	1341	896	598	450	335	550	1127	1905	3050	5005	7359	9432	8886	7584	7603	7121	7660	8612	9177	8689	7639	5219	3213	1758	115209
17	916	530	422	631	1275	3735	7376	9484	11113	11978	11968	10259	9884	9903	10903	11305	11214	10474	7788	5735	4528	3360	2617	1741	159119
18	978	645	563	657	1440	4835	9335	12216	13298	10608	7930	8948	8922	9345	9625	9086	10314	9364	9172	6703	4879	3636	2721	1805	157025
19	939	649	513	668	1456	4186	8867	12228	13070	10635	9316	7762	9229	9447	10760	8758	8504	9138	9339	6756	4934	3808	2469	1420	154851
20	811	532	456	617	1081	3824	8452	12034	12682	9913	8627	8545	9703	9299	9290	9967	9195	9393	9065	7078	4910	4082	2929	1984	154469
21	1219	736	580	577	1043	3103	6621	8682	7531	7024	7758	7603	7706	7837	6795	6891	7130	6920	7223	5367	3530	2821	2420	1738	118855
22	1114	739	502	434	520	1131	2312	3650	4820	6122	7812	8484	9397	8672	8274	6711	9220	9010	7508	5398	4543	4353	4180	2968	117874
23	1711	1183	749	462	422	713	1778	3421	4338	6191	7566	8266	9070	8650	8711	8656	8564	7723	6981	5907	4854	3481	2433	1530	113360
24	832	626	432	597	1413	4759	9642	12729	13170	11293	8731	8030	7949	8370	9422	8856	8985	9261	8561	6159	4587	3416	2340	1572	151732
25	924	609	519	759	1437	4868	9173	12300	12160	11276	9257	8542	8787	8579	7319	6676	5545	5960	7025	5505	3314	2509	1600	1118	135761
26	669	452	373	422	979	3019	6120	10356	10863	8654	7129	6361	6643	7199	7087	7349	7190	7414	5581	4478	4206	3644	2458	1525	120191
27	823	598	462	537	1097	3524	8026	11719	12548	11302	9372	9101	9083	9567	10289	9297	9329	9776	9430	7216	5267	3854	2812	2179	157208
28	1305	910	730	719	1412	4823	9359	10611	11274	9857	9369	9432	9673	9718	8005	8232	7874	8996	8863	7139	5108	4309	3843	2951	154512
29	1780	1186	806	578	721	1638	3612	5229	6785	7731	8632	9656	9805	9633	9720	9519	9390	9161	7764	6080	5312	4552	4114	3139	136543
30	1781	1109	690	545	432	710	1804	3266	4744	6424	7925	8931	9792	10004	9526	9810	9807	8949	7523	6060	4661	3433	2401	1573	121900

Massachusetts Highway Department

H8502: Monthly Hourly Volume for May 2017

Location ID:	H8502		Seasonal Factor Group: U1-Boston																					
	Norfolk		Daily Factor Group:																					
	1		Axle Factor Group: U1-Boston																					
	Interstate 95; North of Route 9		Growth Factor Group:																					
0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL
1	1765	626	487	646	1432	4952	10059	12979	9770	8592	8513	8611	8751	9863	9110	9328	9881	8797	6451	4354	3641	2478	1784	154905
2	1021	568	590	644	1137	4025	7925	11688	10278	7203	8786	9151	9489	9663	8034	8702	9352	9147	6841	4944	4280	3091	1956	149821
3	1446	780	653	735	1509	5370	10469	12975	12738	10174	10259	9901	10120	9526	8914	8660	9602	9210	7896	5440	4172	2948	2014	169097
4	1129	836	714	813	1661	5424	10085	11594	11167	9891	10024	9907	9978	9309	8618	8591	9007	8842	7960	5240	4170	3037	2154	163739
5	1245	926	680	826	1485	5019	9855	12364	10891	9532	9599	7823	7630	7673	6249	5228	5725	6374	5593	3468	3026	2744	2076	135626
6	1414	908	664	515	710	1441	2962	4843	6789	7666	9189	8064	7146	8041	9230	10259	10222	8450	6607	5760	5525	4654	3481	132841
7	1727	1074	734	548	483	937	1999	3660	5032	7257	8703	9839	10620	10520	10567	10118	9474	8241	6167	5207	3912	2562	1669	131697
8																								
9	951	647	567	676	1523	5488	10527	12167	9365	9965	9585	9797	9940	8663	8109	9069	9123	8685	7040	5096	3955	2697	1854	156967
10																								
11																								
12	1274	809	662	743	1523	5154	9946	11436	8695	10644	11191	9957	10220	8643	9246	8326	8521	8450	7823	5327	4152	3377	3036	160150
13	1798	1071	826	644	798	1922	3766	5728	8986	10005	10826	9259	8111	8129	8255	7908	7972	8712	7217	5399	4825	4084	2403	136075
14	1264	794	436	314	249	455	1044	1592	3457	5139	6349	6778	7033	6260	7594	8715	8259	7569	6467	5367	3934	2450	1371	95150
15	735	532	394	488	1140	4826	9116	12267	9718	7745	8277	8913	9428	9292	8855	9094	9536	8697	6653	4569	3614	2606	1964	150629
16	1134	686	636	771	1623	5326	10418	12279	10513	10156	9558	9635	9770	8969	8179	8392	8698	8552	7130	5318	3924	2670	1909	159386
17	1190	834	765	796	1595	5243	10077	12994	12415	8670	9441	9323	9604	8430	6842	7429	7511	7723	7309	5779	4446	2958	2122	157160
18	1339	792	617	773	1515	5265	10125	11588	12662	10008	9898	9848	9432	7981	8063	7996	8263	8169	7779	5590	3722	2930	2131	159315
19	1238	850	746	763	1570	4883	9683	12040	10698	10202	9494	8350	8096	7394	6869	7451	7547	7684	7234	5614	4734	3805	3444	152662
20	2933	1802	884	678	900	1965	3917	5931	8478	6542	6754	7409	7549	7605	6598	7078	7456	7885	6915	5766	5456	4588	3378	126824
21	1762	1143	721	565	578	952	2145	3837	7089	8431	9652	10445	10255	10062	10247	9797	10293	8552	6818	5648	4469	3137	1805	133806
22	1027	651	528	615	1485	5046	9514	10710	10194	7678	8997	9376	10401	9971	8845	8991	8812	8737	6744	4600	3212	2015	1471	151787
23	834	660	693	645	1464	5099	10102	13038	9923	9251	10027	9568	9940	9277	8226	8070	8562	8125	7180	5306	4117	2864	2287	158878
24	1472	982	705	812	1589	5230	10205	12617	8556	8737	9674	9590	9797	8444	8316	8522	8565	8740	7286	5508	4451	3175	2297	155618
25	1239	784	617	771	1631	5209	10154	12697	11884	8504	7234	7443	6634	6400	6875	6980	6643	6883	6687	5299	4099	2667	1919	141985
26	1206	700	615	724	1335	4042	7433	8493	8780	8891	8340	8485	7042	8099	7627	7102	8611	7677	6954	5199	3835	2690	2442	134535
27	1635	972	834	618	791	1696	3493	5467	9194	10249	9135	8455	9038	9188	8766	8199	8118	7452	6195	5181	4656	3807	2845	133022
28	1562	972	643	436	489	796	1756	2968	6300	8393	9464	9821	10036	9550	9034	8312	7754	7172	6070	5442	4738	3583	2587	121943
29	1484	832	484	437	457	960	1848	2956	5093	6972	8379	8071	8423	8427	7977	7620	6508	5539	4159	3718	3104	2144	1550	100952
30	844	532	485	623	1474	5467	10094	12262	10284	8617	9782	9717	10142	9526	8391	8118	8991	8665	7019	4935	3949	2698	1869	157807
31	1176	722	631	795	1561	5601	10705	12920	10611	7516	9874	8944	9968	8748	8487	8230	8021	8511	7422	5330	4389	2721	1861	157731

Massachusetts Highway Department

H8502: Monthly Hourly Volume for June 2017

Location ID:	H8502		Seasonal Factor Group:	U1-Boston																					
County:	Norfolk		Daily Factor Group:																						
Functional Class	1		Axle Factor Group:	U1-Boston																					
Location:	Interstate 95; North of Route 9		Growth Factor Group:																						
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL
1	1177	780	617	751	1587	5259	10013	13002	13519	13186	10020	8623	10338	10204	8407	9309	8509	8774	8535	8016	5894	4520	3174	2274	166488
2	1376	888	714	786	1611	5452	10597	11960	11374	10879	10614	10524	10267	9349	8530	8406	8168	8816	8881	7516	5392	4632	3882	2851	163465
3	1691	1203	839	676	860	1990	4067	6146	7387	8707	9907	10131	9901	8831	7666	7919	8353	9110	8398	6409	5142	5067	4876	3554	138830
4	2063	1150	772	565	466	878	2103	3275	4498	6337	8194	9173	10003	10047	10416	10412	9422	10009	8977	6512	5117	3245	2208	1518	127360
5	803	547	397	621	1411	4336	7621	11022	12921	12028	10219	9484	9171	9700	8853	8438	8095	8428	8116	5873	3762	2767	1899	1309	147821
6	828	582	460	647	1253	3580	6873	10041	11072	10054	8002	7448	7647	8331	7837	7660	8298	8856	7852	6157	4139	3688	2377	1682	135364
7	956	722	564	732	1498	4982	9738	12716	12418	13105	10236	9649	9869	10025	8881	8111	8453	8401	8501	7665	5926	4725	3057	2173	163103
8	1343	840	688	804	1695	5617	8838	12321	12951	12314	9483	9868	9451	9121	7871	7901	8048	8468	8745	7748	5719	4712	3501	2310	160357
9																									
10	2255	1253	794	726	923	2158	4076	5986	7541	8925	8909	8316	7883	7621	7393	7472	8382	9337	7839	6306	5184	5282	5202	3965	133728
11	1994	1147	752	519	522	894	1920	3459	5010	6886	9004	7913	7358	8817	8751	9031	8560	7984	7783	7067	6277	4884	3376	2300	122208
12	1396	878	538	720	1649	5353	9612	12574	13718	12308	8722	8491	8304	8424	8106	7455	6756	6392	7791	6686	4996	4111	2804	1912	149696
13	1230	759	806	800	1591	5446	10294	12319	12758	12611	9358	9339	9096	9127	7987	7581	7676	8463	8269	6729	5038	4364	3088	2167	156896
14	1291	825	656	757	1662	5601	9471	11850	13074	13260	9895	9965	9913	9959	8127	7971	7800	8465	8300	7881	6009	4733	3643	2302	163410
15	1284	826	660	800	1744	5856	10727	12848	13137	13108	10769	9915	10086	10173	8310	7972	8162	8547	8555	7943	6091	4889	3542	2418	168362
16	1322	880	726	860	1659	4915	9982	12858	13077	10237	10056	10293	10360	8431	7453	7033	6014	5770	6452	6152	4740	3940	3217	2487	148914
17	1569	799	657	554	725	1581	3385	5225	6759	7809	9233	10246	10855	10254	8767	8528	8275	9497	8493	6504	5612	5551	5216	3958	140052
18	1963	1196	776	523	480	833	1829	3250	4372	6035	8030	9602	10370	9381	9412	9292	9278	8757	8042	7518	6414	4964	3421	2175	127913
19	1056	751	564	685	1554	5245	9851	12567	12845	12576	9050	9181	9249	9186	8608	7467	8699	8696	8862	6719	4976	3518	2495	1779	156179
20	1016	620	565	761	1595	4690	8598	12279	12682	12747	8829	7364	8310	8602	8541	8158	8525	9162	9751	7251	5439	4732	3169	2070	155456
21	1126	745	577	778	1800	5829	10513	13056	13828	11734	10514	10510	10147	9687	8171	8089	8230	8633	8636	7343	5785	4803	3252	2180	165966
22	1232	788	626	801	1805	5741	10648	12985	13196	12804	8549	7821	8443	7969	7913	8023	7917	8833	8767	8016	5801	4486	3368	2157	158709
23	1249	835	756	775	1665	5401	9973	11682	10973	10830	9966	8934	8693	7257	7125	7070	7810	8616	8819	7628	5869	4458	3773	2864	153021
24	1793	1167	790	655	872	1904	3712	5257	6780	6987	7616	8893	8455	8481	7905	7975	8758	8580	6990	5720	5382	5185	4474	3531	127862
25	2328	1238	763	560	533	960	2059	3119	4570	6328	8188	9563	10219	9655	9174	8552	7527	7886	8066	6626	6151	5136	3716	2853	125770
26	2548	1584	594	743	1541	5522	10082	12595	13180	10889	9739	9633	9965	9879	9156	7902	8208	8980	8323	6697	5209	4112	3096	2221	163398
27	1202	720	635	753	1735	5736	10383	12646	12751	11702	10305	9722	10148	9766	8249	8308	7617	7753	8658	7258	5109	3903	2893	2082	160034
28	1328	738	661	821	1760	5325	10077	12247	12404	11994	10459	9783	9973	9982	8069	8154	7849	8056	8515	7639	5924	4087	3818	2827	162490
29	1369	853	808	779	1689	5492	10010	12465	11942	9710	8447	8493	8544	8586	7603	7750	8278	8643	8848	8089	5508	4936	3684	2701	155227
30	1424	1091	888	857	1660	5097	9363	10939	10694	9950	8861	9127	9348	7083	6342	7484	6599	8227	7683	6450	4915	4150	3193	2469	143904

H8502: Monthly Hourly Volume for August 2017

H18502

Norfolk

1

Interstate 95; North of Route 9

U1-Boston

Daily Factor Group:

Axle Factor Group:

U1-Boston

Growth Factor Group:

	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL
1	1040	637	628	675	1579	5424	9982	12865	13039	11811	9941	9878	9172	9776	8407	7580	8212	8400	8855	7132	5238	4327	3166	2512	160276
2	1357	842	651	817	1590	5319	9721	12767	12910	12398	10038	9762	9618	9707	8014	7882	7959	6006	6088	5808	5195	4122	2977	2079	153627
3	1214	920	849	868	1713	5257	10314	13109	13479	12666	10386	10336	10277	10307	8502	7945	8098	9076	9053	8183	6443	4878	3968	3245	171086
4	1627	999	846	911	1665	5287	9957	11785	11310	10757	10281	8296	8086	6968	5968	7083	7348	7752	8188	7955	5982	4896	3688	3611	151246
5	3281	1870	921	714	1082	2179	3911	5429	6602	7935	8773	7054	7219	7238	7802	6977	7692	8031	7090	5556	4984	4998	4396	3414	125148
6	1928	1073	662	526	544	915	1906	2884	4626	6472	8382	9958	10000	9860	9671	9136	8935	9065	8606	7797	6518	5910	4417	2399	132190

Massachusetts Highway Department

H8502: Monthly Hourly Volume for November 2016

Location ID:		H8502	Seasonal Factor Group: U1-Boston																						
County:		Norfolk	Daily Factor Group:																						
Functional Class		1	Axle Factor Group: U1-Boston																						
Location:		Interstate 95; North of Route 9	Growth Factor Group:																						
0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL	
1	929	647	660	766	1513	5013	9836	12243	12458	12265	10209	9137	8980	9103	9819	10959	9706	10490	10253	7159	4597	3876	2409	1586	164613
2	978	640	546	699	1536	4947	9912	12898	12843	10696	9211	9051	8909	9184	9917	11749	9873	10141	9959	6797	4846	3567	2449	1677	163025
3	1025	737	580	790	1566	4821	8786	11251	12324	12235	9613	9042	8951	9038	7505	8309	8945	10051	9194	7047	4794	4045	2494	1855	154998
4	1033	748	640	742	1475	4717	9619	11190	13152	9493	8815	9174	9490	9736	8562	9056	9754	9958	9171	6507	3764	3364	2882	2110	155152
5																									
6																									
7	749	554	443	662	1380	5042	9326	12218	12905	11284	8431	8542	8543	8779	9803	9394	10025	10628	9167	6052	4172	3476	2362	1603	155540
8	982	583	534	715	1460	5041	9859	11697	13263	10396	9262	8718	8822	9052	8707	8940	9041	9742	8621	5869	4097	3145	2194	1669	152409
9	912	753	634	726	1526	5060	10121	12374	13054	10144	8900	8650	8917	9256	8820	9354	9114	9733	9344	6511	4498	3517	2457	1709	156084
10	991	664	554	716	1575	5054	9828	12252	12844	12880	9531	9191	9321	9627	9518	8120	9495	10201	10093	7779	5006	4363	3291	2178	165072
11	1204	850	667	760	1329	3835	7665	9542	9283	9413	9393	8234	8353	9607	9679	10071	9989	10143	8330	6094	4107	3433	3067	2415	147463
12	1429	829	749	670	790	1498	3071	4644	6629	7809	8166	8919	8494	8502	8634	8188	8024	8186	7007	5254	4399	3749	3321	2676	121637
13	1682	987	741	496	394	668	1661	2683	3955	5679	7184	8448	9249	9624	9940	8880	8105	7948	7250	5449	4292	2803	2055	1574	111747
14	2032	1821	1005	658	1391	4941	9640	11746	12292	11181	9050	9051	8365	8681	9476	8995	9098	9911	9184	5962	4059	3366	2225	1471	155601
15	801	673	588	669	1469	4831	9454	11744	11962	10351	8559	8524	8454	7583	7109	6917	7497	7350	8497	5470	3946	3374	2178	1383	139383
16	824	489	440	523	1283	4576	9016	11412	12203	10421	9067	9012	8818	9475	9816	9183	9476	9420	7329	6780	5084	4125	2811	1844	153427
17	969	803	633	808	1531	5085	9544	12204	13064	11063	9580	9186	9370	9619	9372	8519	9438	10027	9743	7199	5051	4136	2931	2052	161927
18	1104	779	611	780	1496	4831	9688	11171	11690	10521	9414	9615	9308	8930	8222	8995	8471	9721	9903	7471	4964	4017	3694	2701	158097
19	1647	964	715	623	809	1720	3509	5175	6709	8114	8781	9357	9466	9561	9484	10015	9338	9331	8325	5732	4473	4118	4032	3107	135105
20	1644	983	608	478	385	600	1237	2060	3388	5103	6739	7923	8666	8744	8439	8795	8278	6978	5752	4921	4343	3035	2107	1365	102571
21	797	519	399	602	1513	4967	8963	12525	12832	11641	9454	7473	6934	7860	8804	9132	9508	10077	9026	6965	4547	3574	2465	1650	152227
22	1011	717	571	684	1475	5257	9770	11159	12253	10218	9928	9945	9973	10311	9196	9378	9303	10182	10680	8056	5460	4341	3259	2175	165302
23	1334	874	677	763	1628	4772	8950	10347	9547	8841	9345	10178	8698	7524	7473	8705	8063	7457	6018	5222	4108	3302	2624	1864	138314
24	1297	906	605	476	486	707	1355	2114	2960	4458	7074	9454	8990	8488	6917	5503	6184	7099	8116	8489	8162	6100	3657	2255	111852
25	1185	669	507	622	890	2011	3606	4051	4719	5760	6866	7657	7776	6464	7144	7748	7761	7173	5918	4706	3869	3272	3007	2237	105618
26	1498	986	667	559	612	1068	2416	3466	4395	5880	7241	8177	8530	8355	8455	8525	8159	7906	6643	5234	4705	4051	3488	2723	113739
27	1628	1008	667	518	423	698	1539	2310	3616	5292	6842	8103	8875	9096	9222	9351	8635	7245	5852	5074	4928	3395	2331	1432	108080
28																									
29	921	651	561	735	1518	5166	9863	12095	12548	10390	9027	7726	7134	8260	7368	7289	8245	8919	8514	6004	4075	2999	2688	1799	144495
30	978	722	550	690	1448	4583	9245	12141	11660	10791	8831	8633	8653	9332	8457	8224	8564	9055	7963	6354	4036	3220	2292	1534	147956

Massachusetts Highway Department

H8502: Monthly Hourly Volume for December 2016

Location ID:	H8502	Seasonal Factor Group:	U1-Boston
County:	Norfolk	Daily Factor Group:	
Functional Class	1	Axle Factor Group:	U1-Boston
Location:	Interstate 95; North of Route 9		
	Growth Factor Group:		

	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL
1	858	526	463	577	1261	4344	9047	10506	12501	11755	9398	9273	9245	9563	9032	7319	9348	10073	9833	6683	5019	4090	3529	2495	156738
2	1507	989	831	973	1592	4792	9825	10998	11423	9873	9287	9295	9308	10022	8886	9469	8569	9883	9391	6910	4515	3825	3620	2744	158527
3	1640	1063	793	567	795	1689	3441	4820	6189	7646	8537	9022	9384	9384	9882	9295	9706	9789	8137	5651	4341	4134	4077	3235	133217
4	1751	981	696	459	410	686	1553	2759	4955	6802	8544	8817	8915	8359	7881	7987	8483	8626	7503	5314	4257	3069	2189	1457	112453
5	810	492	481	578	1457	4755	9604	10717	11196	9012	7167	6684	6574	7697	8874	8744	9218	8666	7886	5566	3956	3258	2444	1647	137483
6	888	615	545	631	1466	4991	9078	12084	11648	11421	9378	9068	9228	9584	9180	9131	9385	9923	9731	6751	4949	3958	2715	1724	158072
7	993	616	558	558	1329	4099	8139	10465	11032	11700	8832	8750	8819	9068	9549	9252	9630	10701	10027	6910	4965	4152	2806	1791	154741
8	1081	730	674	770	1585	5102	9956	12358	12737	11087	9327	9284	9216	9513	9374	7659	9592	10319	9890	7261	5671	4149	3097	2108	162540
9	1360	828	693	781	1433	4866	9586	12365	12287	10022	9750	9605	9748	10350	9111	9263	9159	10332	9538	7060	4655	3909	3804	3013	163518
10	1773	1094	792	600	769	1640	3154	4794	6171	7673	8976	9607	10043	9969	10040	9962	9803	9424	8661	6432	4657	4373	4541	3446	138394
11	1958	1126	743	492	386	633	1504	2349	3649	5448	6984	8248	9149	9471	9110	8873	8812	8136	6834	5347	4344	3039	2107	1512	110254
12	872	508	520	619	1259	4215	7844	9043	10563	7412	6649	7182	7486	7858	8738	8526	8708	9806	8895	5851	4146	3004	2366	1812	133882
13	2158	1943	1102	674	1401	4793	9805	12339	12091	12479	10208	9558	9302	9675	9816	9128	8597	10130	9857	6993	4894	3894	2864	1828	165529
14	970	708	514	776	1430	5018	10120	12437	12259	12860	10120	9956	10081	9818	9780	9700	9136	11676	9748	7413	5401	4511	3076	2071	169579
15	1186	678	592	715	1549	4991	10246	12257	12681	12542	9820	8124	8508	10093	9905	9585	9704	10339	9808	7685	5509	4788	3731	2428	167464
16	1420	916	724	761	1361	4435	8761	10389	12046	10073	10146	10162	10475	9840	9436	10261	10655	10320	9575	7349	5358	4590	4078	3106	166237
17	1833	1160	779	690	800	1372	2579	3462	4765	5030	5668	5574	6261	4838	6200	6637	7344	7439	6546	5140	3949	3522	3632	3046	98266
18																									
19	883	596	517	607	1456	4962	9970	11901	11087	10063	9631	9412	9167	9404	10305	9627	9554	10649	9627	6444	4771	3554	2632	1729	158548
20	1067	758	603	648	1430	4957	9985	12290	12861	10345	10205	9935	9921	10000	10193	9725	9484	10414	9883	6748	5029	4024	3117	2088	165710
21	1208	812	751	749	1432	4898	9690	11455	12392	10035	10023	10228	9882	10128	9359	9150	9811	10627	10218	7263	5084	4140	3202	2112	164649
22	1221	814	657	689	1446	4695	9490	10784	10189	9549	9305	9370	9648	9179	8917	9294	9711	10028	8701	6624	4977	4184	3374	2274	155120
23	1391	948	759	689	1362	4007	7300	7978	7967	8300	9415	10285	9644	8659	8571	9045	8564	7717	6736	5242	4285	3708	3367	2513	138452
24	1539	909	709	594	615	939	1822	2792	4241	5953	6655	6965	7295	6481	6359	6925	7315	7918	6123	4264	4704	5497	4820	3326	104760
25	1525	828	451	267	202	339	823	1182	1810	3163	4847	7204	9233	9850	7990	6507	6142	6372	6971	6819	6793	4938	3389	2075	99720
26	1054	514	303	255	471	993	1847	2399	3189	4739	6657	8014	8399	8310	8354	8252	7450	6619	5644	4671	3961	3399	2302	1507	99303
27	904	544	450	523	976	3525	6836	7954	6943	7454	8265	8884	9230	9237	9183	9315	9438	9890	7185	5261	4074	3357	2561	1831	133820
28	1096	676	536	694	1181	4186	7644	8043	8302	8736	9417	9905	9804	9544	8649	9079	9448	9939	8156	6110	4387	3846	2827	1929	144134
29	1158	810	594	677	1263	3907	7157	7702	7639	7819	8219	8475	8497	8188	7239	7665	7197	6927	5114	3056	2756	2761	2108	1611	118539
30	1084	703	591	621	973	3146	5469	6765	7090	7446	8493	9123	9865	9974	8661	9865	9380	8702	7377	5581	4242	3680	3180	2315	134326
31	1504	1095	646	550	588	1050	1867	2647	3672	5096	6064	6994	7414	7236	7411	7462	6950	6411	5579	4477	3444	2508	1989	1593	94247

Massachusetts Highway Department
H8502: Monthly Volume for 2016/2017

Location ID:	H8502	Seasonal Factor Group:	U1-Boston
County:	Norfolk	Daily Factor Group:	
Functional Class	1	Axle Factor Group:	U1-Boston
Location:	Interstate 95; North of Route 9		
		Growth Factor Group:	

Month	Volume	Seasonal Factor
January	131734	0.931
February	131203	0.928
March	144758	1.023
April	137930	0.975
May	144290	1.020
June	149689	1.058
July	139902	0.989
August	148929	1.053
September	142583	1.008
October	144034	1.018
November	142275	1.006
December	139941	0.989

Multiplier to Average Month
0.980

141439

Massachusetts Highway Department

H8501: Monthly Hourly Volume for January 2015

Location ID:		H8501										Seasonal Factor Group: U1-Boston													
County:		Norfolk										Daily Factor Group:													
Functional Class		1										U1-Boston													
Location:		Interstate 95; South of Central Avenue										Growth Factor Group:													
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL
1	1714	2019	1248	762	418	510	909	1130	1560	2489	3948	5121	6163	6472	6341	6521	5903	5363	4322	3623	2880	2458	1753	1201	74828
2	615	375	271	290	735	2833	5903	6857	7358	6997	7237	7830	8727	9242	9860	10317	10055	9787	7289	5076	3781	3289	2760	1882	129366
3	1149	757	494	315	450	966	2095	3137	4077	5587	6443	8093	8664	8707	8910	9015	8278	6393	5116	3492	2908	2442	2223	1594	101305
4	980	633	425	258	236	477	1051	1472	2187	3206	4143	5588	6276	6566	6587	6406	6044	5280	4458	3360	2709	1911	1403	934	72590
5	566	26	242	355	948	4734	9991	12318	10644	8711	6266	6775	7226	7565	9356	10634	10692	11572	9290	5715	3809	2703	1917	1288	143343
6	647	395	324	413	1028	4606	10135	12617	11022	9227	6793	7509	7683	8004	9584	10660	10766	6568	8456	6020	3959	3021	2163	1437	143037
7	759	474	342	392	1007	4341	9514	10971	11006	10370	7168	7656	7704	8265	9974	10761	10816	11139	9550	5967	4187	3167	2208	1410	149148
8	789	541	359	426	922	4135	9237	11567	10611	9161	7017	7470	7560	7867	9615	10900	10963	11488	9484	6112	4201	3252	2413	1469	147559
9	804	491	372	446	943	4310	9742	12483	10777	7859	5863	7083	7656	8388	10001	10821	10055	10800	9378	6056	4189	3492	2754	2067	146830
10	1204	730	476	397	476	1315	2661	3965	5551	6718	6775	9439	9228	9459	9396	9750	8544	6370	4972	3805	4716	5596	4692	2896	119131
11	1357	758	468	307	288	584	1490	2049	3059	4690	5740	7706	8543	8476	8412	8432	8053	7262	5804	4450	3640	2633	1765	1161	97127
12	583	415	266	398	1018	4636	10155	12164	10798	9109	6363	6868	6632	6963	8033	8881	7727	9426	8135	5260	3418	2642	1765	1120	132775
13	637	363	329	439	981	4369	9296	12224	11044	10642	7248	7515	7855	8404	9994	10861	10880	11273	9805	6247	4411	3334	2321	1446	151918
14	778	467	302	376	1023	4561	9955	12263	10755	8943	7425	7689	8083	8496	10235	11322	11158	11013	10155	6660	4618	3728	2480	1461	153946
15																									
16																									
17	1186	644	471	400	452	1196	2408	3738	5101	6360	7474	8680	9078	9200	9169	9470	9082	8595	7367	5408	4078	3726	3486	2618	119387
18	1346	840	489	338	276	475	1291	1934	2896	4265	6164	7727	8558	9194	7431	7265	6466	5825	4751	2656	2379	1930	4103	3737	92336
19	1941	651	272	290	678	2916	5931	6911	7025	6279	6506	7444	9224	9356	10250	10986	10594	10333	8240	5579	3852	2891	1974	1235	131358
20																									
21																									
22																									
23																									
24																									
25																									
26																									
27																									
28	102	64	53	86	243	996	2360	2275	5085	4621	4825	4676	4492	4644	5554	6033	6591	7558	6050	4023	2847	2305	1644	1367	78494
29	784	481	388	447	1024	4048	8636	10455	11020	8579	9147	7947	8043	8401	9367	10811	10529	10899	10020	7479	5014	3883	2711	1784	151897
30	938	612	426	486	983	3895	8948	11681	10362	9173	7416	7278	7790	8113	10051	10714	10392	10209	9186	5834	3968	3386	2841	1896	146578
31	1101	775	557	409	507	1225	2402	3902	4852	6094	7132	7854	8516	8858	8785	8681	8479	8174	7270	4999	3882	3616	3300	2481	113851

Massachusetts Highway Department

H8501: Monthly Hourly Volume for February 2015

Location ID:	H8501												Seasonal Factor Group:	U1-Boston											
County:	Norfolk												Daily Factor Group:												
Functional Class	1												Axle Factor Group:	U1-Boston											
Location:	Interstate 95; South of Central Avenue												Growth Factor Group:												
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL
1	1316	857	493	334	292	581	1325	2254	2908	4583	5849	6992	7620	7745	8010	7965	7833	7200	4310	1991	1813	1722	3411	4699	92103
2																									
3	461	312	237	347	835	3019	7006	9234	8607	8282	8134	6977	6712	7101	8216	9167	9667	9655	8734	6034	4200	3301	2205	1484	129927
4	819	555	346	469	1021	4358	9056	10324	9991	9918	9129	8226	7913	8130	9916	10604	10644	8903	3181	1078	5310	3802	2573	1562	137828
5	800	490	355	395	959	4018	8002	9435	7927	8224	7416	5496	6564	3690	4304	9705	10033	10246	8969	6180	4253	3357	2362	1476	124656
6	880	589	399	450	997	3987	9008	11786	9524	7889	8499	8167	8758	9119	10555	11511	10368	10458	9832	7018	4756	3558	3052	2110	153270
7	1222	820	550	462	600	1453	2881	4236	5010	6831	7589	8434	8939	9312	9108	9119	8478	8078	6860	5004	3726	3390	3040	2356	117498
8	1288	634	363	363	416	690	1586	2636	2231	3259	4115	5037	5419	5869	5929	5823	5207	4416	3382	2309	1656	1209	869	736	65502
9																									
10	347	258	217	352	808	2710	6356	8220	7239	7096	6606	5856	5878	6191	7642	8676	8784	9100	7608	4818	3447	2878	2007	1414	114508
11	770	522	380	423	1034	4353	9421	11477	9590	9434	9014	8123	7774	8303	9569	10735	10398	10668	9808	7823	5382	3960	2642	1782	153385
12	890	577	389	461	1053	4308	9009	10988	9556	10017	9037	7709	8113	8224	9889	10532	10528	10225	8493	6310	4368	3429	2253	1594	147952
13	912	554	443	469	1044	3920	9401	11500	10565	8808	7633	7774	8384	9281	10484	11434	8749	10536	9497	7159	4982	3733	3285	2317	152864
14	1428	875	571	480	573	1294	2624	3678	5308	6641	7181	8084	8150	8364	8204	7907	6246	3893	2889	2040	1595	1156	1493	710	91384
15																									
16	424	317	297	309	667	1876	4141	5068	5717	5603	5778	6602	6940	7440	8119	8382	8194	8009	6396	4540	3661	2934	2026	1361	104801
17	700	456	402	436	1041	4078	8630	10325	10259	8740	7544	6995	5835	7546	8611	9826	9761	9898	8753	5819	4239	3045	2096	1464	136499
18	790	574	373	389	976	4111	9175	10184	10629	9303	8753	8363	8178	8614	864	6190	6701	4307	5131	4034	1676	1785	1329	779	113208
19	550	506	271	241	416	1708	4664	4059	6109	4892	4366	3932	5170	4356	4160	4025	4091	4958	3532	3113	1999	1516	787	549	69970
20	440	268	101	179	471	1795	2792	4124	4674	3305	3751	3157	3169	4023	4264	4486	5223	5522	3949	2906	2579	1569	1425	881	65053
21	547	358	280	193	223	688	1154	1712	2129	3518	2721	3478	4839	3580	3963	4073	4096	2379	3027	2254	958	989	1083	704	48946
22																									
23	333	222	166	172	503	2472	4702	5245	3825	5647	6291	6988	7222	7820	9300	10782	10572	10932	9609	6271	4000	3051	2060	1436	119621
24	776	464	345	430	1022	4504	9996	11725	11273	10375	8417	7556	7745	8195	9962	10651	11098	11147	9794	7260	4867	3494	2407	1447	154950
25	790	471	308	402	959	3763	9277	10658	10747	10854	8748	7866	7892	8509	9876	10465	10012	9749	9909	7411	4949	3885	2551	1638	151709
26	845	478	399	451	1019	4573	9169	12362	10998	10569	8499	8170	8157	8576	10190	11292	11270	11298	10078	7140	4938	3915	2578	1701	158665
27	917	513	366	423	1005	4321	9036	10793	10066	9560	8185	8513	8781	9336	7992	9862	10907	10871	9732	7455	4879	3902	3178	2277	152910
28	1360	810	573	405	501	1319	2571	4444	5895	7021	8308	9167	9148	9511	9819	10088	9479	9665	7947	5839	4459	4193	3568	2653	128743

Massachusetts Highway Department

H8501: Monthly Hourly Volume for March 2015

Location ID:		H8501	Seasonal Factor Group: U1-Boston																						
County:		Norfolk	Daily Factor Group:																						
Functional Class		1	Axle Factor Group: U1-Boston																						
Location:		Interstate 95; South of Central Avenue	Growth Factor Group:																						
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL
1	1489	938	579	351	305	548	1398	2300	3383	5236	6622	7898	8602	8910	8965	9038	8298	7010	5316	4205	3064	2201	1510	1353	99519
2	667	334	340	421	560	3967	8793	11922	10411	9153	7235	3413	6064	7413	9294	10398	10832	11043	9098	5907	3854	3036	1967	1268	137390
3	686	404	367	411	1073	4666	10203	12155	10168	9906	8503	7595	7960	8187	9617	11162	11384	11014	9813	6170	3707	2322	1708	1414	150595
4	810	498	375	439	955	4104	8779	10776	9932	8266	7250	5692	6497	8240	10212	11136	10473	11718	9062	6683	4672	3753	2501	1574	144397
5																									
6	560	586	381	435	1012	4245	9172	12576	11266	9291	6466	7668	9180	10161	10507	11972	11429	11412	9929	7383	5118	3930	3310	2250	160239
7	1260	767	523	372	474	1308	2734	4562	5988	7403	8548	8981	9324	9443	9341	9919	9761	7395	6406	5825	4141	3901	3799	2713	124888
8	1464	844	0	596	439	580	1478	2345	3175	4711	6176	7885	8770	8411	8953	9003	8856	8343	6948	5713	4348	3101	2028	1300	105467
9																									
10	747	472	325	424	1009	4586	9720	11273	10633	10965	8325	7915	8165	8542	10466	11311	11637	11830	10005	6524	4663	3698	2214	1234	156683
11	760	429	314	396	966	4188	8151	10400	9569	9107	7091	6412	8120	8646	10145	10836	11183	11611	10023	6941	4992	3964	2598	1700	148542
12	812	594	353	416	1038	4639	9162	12552	11355	10778	8660	8495	8522	8937	10564	11393	10574	10868	8448	7104	2379	1737	1294	675	151349
13	386	216	147	235	563	3354	9088	12270	11131	8043	8334	8571	9160	9807	10963	11893	11427	11344	10107	7104	5023	3909	3442	2323	158840
14	1347	811	578	399	521	1199	2413	4320	5465	6571	6778	7405	7842	7994	7855	7898	7581	7303	6521	4657	3827	3507	3316	2363	108471
15	1238	838	455	299	226	517	1227	2085	3277	4182	5346	6588	7241	7795	7317	7774	7579	7022	5764	5315	3901	2902	1904	1483	92275
16	696	436	318	391	1021	4311	9150	11731	7651	8546	8703	8147	7790	8105	9295	10965	11116	11295	9478	6197	4224	3127	2256	1417	146366
17	707	441	339	464	1001	4638	8542	9718	9073	9113	7805	1673	6926	6889	7556	9401	10948	10856	9075	6286	4381	3278	2292	1304	132706
18	849	570	426	489	1040	4525	9423	12310	11001	9937	7976	8242	8169	8412	10067	9509	10736	11523	9442	6566	4464	3767	2458	1482	153383
19	886	494	340	400	1003	4667	9365	12105	11121	10016	8514	8086	8439	8663	10406	11437	9292	11574	9734	6802	5021	3812	2594	1650	156421
20	911	537	372	393	991	4425	8933	12362	10793	9213	8446	8609	9047	9356	11317	12258	11860	11616	8828	5837	4069	3398	2917	2082	158570
21	1284	730	506	364	453	1127	2260	4273	5644	6772	7650	7976	8120	7920	7069	8768	8967	8559	7601	5536	4358	4053	3805	2678	116473
22																									
23																									
24																									
25																									
26	681	465	372	408	980	3831	8998	10395	9616	8433	6983	6732	6217	7821	7600	8741	8047	7463	7704	5861	4357	3687	2555	1644	129591
27	918	577	382	416	913	3422	8283	10200	9542	8187	7219	7642	8283	8379	9008	8393	8174	8566	6564	4495	3236	2835	2509	1800	129943
28	1157	682	556	388	495	1172	2752	4286	5171	6001	6357	7097	7224	6837	6695	7022	7299	6903	5953	4581	3691	3385	3112	2476	101292
29	1428	808	408	362	311	513	1485	2397	3560	5250	6986	8499	8802	9073	9419	9217	9297	8374	6939	5428	4481	3183	2137	1471	109828
30	776	436	301	420	1005	4550	10121	12655	11270	9862	8012	7829	7917	8398	9951	10922	11096	11982	9741	6277	4306	3343	2149	1405	154724
31	806	455	343	465	1057	4513	10489	12312	10841	10789	8731	7988	8133	8550	9339	12005	11736	12050	10221	6793	4795	3733	2470	1614	160228

Massachusetts Highway Department
H8501: Monthly Hourly Volume for April 2015

Location ID:	H8501	Seasonal Factor Group:	U1-Boston
County:	Norfolk	Daily Factor Group:	
Functional Class	1	Axle Factor Group:	U1-Boston
Location:	Interstate 95; South of Central Avenue	Growth Factor Group:	

	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL
1	864	527	339	459	1035	4470	10395	12621	11544	10298	8605	8334	8535	8819	10271	10726	11319	10295	9528	6845	5122	3531	2749	1680	158911
2	883	535	380	497	1037	4384	10294	12835	11740	10355	8624	8535	8672	9183	10166	11469	9477	7179	7137	7343	5306	4270	3049	2000	155350
3	976	584	380	446	915	3821	9427	11217	10062	9120	8525	8561	8134	10054	11000	11252	11390	11286	8786	6097	4772	4389	3640	2430	157264
4	1342	755	498	380	419	1000	2176	3191	4398	5827	6820	7627	9810	9802	9740	9766	9537	8742	7091	5301	4472	4487	3742	2447	119370
5	1373	772	497	340	242	372	976	1578	2492	4554	7092	9552	10940	10462	8953	8231	9208	10399	10407	9546	7894	4357	2437	1458	124132
6	607	370	292	354	1013	4486	9211	12541	11407	10498	8700	8395	8476	8612	10077	11536	11654	12159	10042	6447	4607	3359	2045	1437	158325
7	788	468	376	417	866	4701	10405	12603	11074	10911	8459	8107	8438	8720	10439	11496	11057	9223	7057	4999	3761	3189	2135	1280	150969
8	656	386	268	325	750	4023	9019	12512	11624	10083	8717	8271	8655	8916	9483	11277	9037	9863	8795	6296	4513	3684	2118	1442	150713
9	763	456	307	371	819	4155	8893	9805	8896	8713	7731	6818	6867	6910	7198	8008	7758	5586	5880	4534	4248	3301	2370	1609	122006
10	921	577	359	488	843	4013	8302	9065	8889	7705	7231	7276	7502	7408	7363	10546	11205	9025	9365	6664	4753	3889	3225	2322	138936
11	1379	824	556	422	485	1403	3331	5313	7249	8328	9508	10045	10250	10521	10275	9980	10488	10342	8858	6220	4833	4389	4151	3059	142209
12	1660	975	660	427	310	667	1797	3203	4504	5968	7838	9250	10182	9997	9673	9715	9642	8640	7689	6287	4911	3222	2196	1407	120820
13	689	426	316	407	1016	5027	10584	12392	10883	10425	8471	8051	8306	8400	8243	11046	11082	11659	9778	6686	4550	3427	2167	1384	155415
14	710	492	349	441	975	4885	10660	11965	10529	10876	8666	8220	8397	8880	10474	10920	11045	12435	10489	6697	4795	3708	2722	1350	160890
15	879	598	513	610	952	4952	10477	12089	11746	11166	9085	8847	9082	9379	10332	11741	11350	12240	10521	7059	5180	3725	2522	1717	166762
16	972	543	413	495	979	4977	10487	11428	11821	11454	9743	9013	9032	9361	9425	11713	11670	12014	10402	7312	5276	4091	2801	1769	167191
17	965	599	470	523	1084	4693	9526	10317	11553	9552	8189	7355	9073	8192	9815	10649	11573	11504	9594	6914	4894	3952	3222	2354	156562
18	1399	801	579	438	500	1406	3139	4944	6977	8463	9457	10047	10170	10275	10098	10065	10098	9360	7706	5982	4719	4286	3814	2653	137376
19	1464	898	577	390	273	655	1588	2909	4580	6116	7833	8743	9233	9519	9120	9074	9112	8213	7480	5740	4506	3300	2331	1547	115201
20	793	464	381	506	998	3752	8424	9722	9358	8695	7924	7947	8024	8357	8986	9557	9344	9038	7317	5118	3753	2940	2004	1316	134718
21	677	459	364	448	889	4596	9533	11211	10249	9954	8752	8571	9005	9099	10524	11370	11398	11987	9610	6708	4641	3214	2454	1554	157267
22	845	672	356	493	1130	4999	10202	12299	11664	10476	9103	9435	9347	9420	10505	11433	11522	11241	10090	6657	3473	3383	2718	1616	163079
23	853	526	392	415	1057	4748	10363	12312	11779	9980	9006	9097	9174	9544	10597	11725	11972	8701	9587	6804	4775	3967	2744	1795	161913
24	981	597	399	424	941	4638	9854	11514	10615	9740	9143	9117	8549	9368	10496	11686	11280	11350	9307	6632	4911	3927	3243	2363	161075
25	1348	815	520	364	488	1401	3159	4873	6712	7901	9089	9852	10291	9995	10537	10920	10251	9670	8070	5844	4554	4525	4337	2767	138283
26	1608	937	550	359	320	608	1601	3095	4490	6340	7458	9103	9464	9996	9322	9799	9477	8319	7240	5525	4444	3249	1988	1332	116624
27	723	393	332	394	1106	5154	10741	12741	11470	10444	8407	7883	8156	8349	9961	11087	11318	11877	9910	6267	4120	3290	2317	1457	157897
28	1017	537	387	428	1055	4841	10432	12409	11178	10676	8735	8041	8495	8637	10121	11470	11595	11597	10032	6754	4807	3939	2642	1599	161424
29	875	581	377	434	1202	5130	9373	12046	11607	10978	8999	8383	8586	8965	10453	11617	11335	11757	10088	6877	4696	4067	2930	1561	162937
30	1085	499	320	421	1118	4847	10059	12322	11243	11075	8927	8602	7833	8953	10565	11454	11011	11601	10459	6808	4361	3991	3157	1899	162610

**Massachusetts Highway Department
H8501: Monthly Hourly Volume for July 2015**

Location ID:	H8501										Seasonal Factor Group:										U1-Boston									
County:	Norfolk										Daily Factor Group:										U1-Boston									
Functional Class	1										Axle Factor Group:										U1-Boston									
Location:	Interstate 95; South of Central Avenue										Growth Factor Group:																			
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL					
1	986	623	455	552	1236	5211	10009	10325	9667	10049	8958	8999	9237	9503	10069	10412	10970	11087	9822	7211	4977	4043	2608	1925	158934					
2	122	587	428	554	592	4997	9934	11254	10213	9833	9723	9556	9967	9693	9872	10757	9336	9266	8277	6924	5734	4599	3343	2566	158127					
3	1366	755	559	450	895	2425	4347	5121	5984	6990	8329	8576	8545	8287	8025	7663	6682	6105	5714	4828	4171	3575	3933	2843	116168					
4	1582	818	502	339	426	781	1842	2880	3549	4238	5295	6865	6971	6946	6274	5809	5136	5164	4753	4428	3972	3400	2944	3098	88012					
5	1936	919	509	334	286	586	1509	2134	3241	4791	6256	7348	7768	7440	7636	7466	7239	7078	7053	5964	5365	5014	3627	2397	103896					
6	1190	544	396	434	1084	4716	9692	11475	10291	8920	8569	8191	7691	8590	10010	10553	10852	11259	8980	6058	4338	3549	2228	1646	151256					
7	788	515	388	487	1133	5075	9982	11629	11294	10149	8807	8447	8461	8646	9763	10178	11050	11605	9826	6743	4261	3688	2496	1899	157310					
8	524	558	458	496	436	4609	10290	11834	10821	10110	9255	8926	9034	9661	10024	10779	10882	11350	9942	6918	4938	3440	2428	1958	159671					
9	910	622	453	498	1078	4941	9968	11499	11154	10005	8814	9435	9184	9208	10160	10697	10912	11111	10095	7552	4875	3978	2447	2165	161761					
10	1212	613	480	465	1093	4362	9833	10672	10266	9319	9239	9284	9589	9655	10107	10638	10337	9788	9502	7445	5165	4353	3167	3331	159915					
11																														
12																														
13																														
14																														
15																														
16	891	600	444	500	1199	5074	10147	11712	11022	9875	9401	9179	9339	9323	9993	10990	10890	10577	10051	8083	5464	4147	3454	2377	164732					
17	1370	719	470	547	1225	4700	9567	10993	10482	9740	9592	9705	8201	9821	8561	10407	10047	8094	8448	7096	5366	4214	3569	2406	155340					
18	1285	885	621	474	596	1553	3223	4709	5930	7217	8525	9346	9872	9765	9667	9363	9108	8482	7342	5856	4882	4247	4622	3653	131223					
19	1812</																													

Massachusetts Highway Department

H8501: Monthly Hourly Volume for September 2015

Location ID:		H8501	Seasonal Factor Group: U1-Boston																						
County:		Norfolk	Daily Factor Group:																						
Functional Class		1	Axle Factor Group: U1-Boston																						
Location:		Interstate 95; South of Central Avenue	Growth Factor Group:																						
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL
1	902	549	415	508	1225	5160	9937	11775	11013	10302	9154	8682	8934	7573	9463	11001	10676	10737	7560	7447	5578	4271	2973	1799	157634
2	882	553	446	502	1164	5081	10495	10781	11106	10470	9560	9179	8805	9046	10513	9951	10939	11101	10031	7884	5849	4448	2643	1803	163232
3	957	638	446	579	1240	5140	10351	11787	10832	9633	8921	9281	9141	9208	10370	11220	11167	11245	10311	8023	4880	4166	3299	3325	166160
4	1507	720	486	321	747	4320	8918	10607	9787	8942	9936	9918	9978	10456	10800	11205	9571	9160	8062	7113	5374	3850	2647	2304	156729
5																									
6																									
7																									
8																									
9	1298	571	430	559	1269	5335	10430	11977	10871	10534	9375	8931	8797	9197	10000	10929	11178	11734	9972	6762	4470	3820	2329	1830	162598
10	892	573	440	527	1220	5128	10436	11876	10691	10330	9131	8584	8692	8972	9580	9849	10304	9564	7272	5343	4762	3162	2111	2370	151809
11	3012	2275	669	294	715	4477	8820	10197	8802	9190	8778	9639	9170	10047	10542	11612	11000	11285	9949	7537	4971	4009	2947	2691	162628
12	1540	769	550	465	642	1544	3521	5157	6731	8009	9166	10103	10127	9970	9854	9636	9892	9450	8311	6456	5190	4420	3871	3572	138946
13	2618	1721	740	321	280	638	1706	2827	3973	5765	7580	9103	9695	9899	10007	9774	9466	9076	7314	5911	4960	3403	2393	1439	120609
14	713	437	311	400	1157	5217	10350	11703	10580	9466	8687	8370	8251	8576	9722	10647	10535	11537	9223	6457	4621	3119	2166	1417	153662
15	461	258	352	451	1219	5238	10207	11735	10714	10413	8471	7856	7828	8533	10068	10910	11210	11479	9641	6739	4981	3541	2393	1526	156224
16	769	534	448	495	1262	5270	10093	11728	10833	10358	9479	8913	8547	8952	10162	11128	11411	10573	10443	7093	4836	3681	3103	1625	161736
17	829	565	416	486	1254	5147	10125	11686	10941	10652	8206	8382	8598	9235	10217	9544	11039	11330	10162	7609	5099	3664	2898	1708	159792
18	964	607	423	560	1199	4867	9661	11811	11297	9859	9205	9535	9566	10135	10345	8207	7833	9472	9392	7924	5273	3476	3489	3018	158118
19	1631	964	616	468	585	1513	3028	4932	6775	8243	9585	10488	10800	10138	10127	9980	10009	9334	8457	6957	5571	3992	4053	2845	141091
20	1632	894	606	411	366	710	1791	3019	4625	6355	8327	9481	10295	10438	9071	8980	8736	9170	8043	6230	4581	2753	2181	1388	120083
21	658	403	307	387	1191	4855	9569	10635	9994	9538	7838	7517	7351	8037	9702	10843	11108	11371	8961	5394	3919	2700	2175	1307	145760
22	742	404	331	446	1182	4865	7899	11058	10243	9844	8386	7985	8165	8798	9537	10913	10903	11547	9120	5370	3938	2990	2512	1736	148914
23	736	483	357	507	1129	4660	9322	10935	10440	9150	7923	8455	8231	8703	9579	10663	11189	11458	9182	6441	4631	3338	2633	1507	151652
24	766	501	387	506	1171	4955	10425	11408	10542	10395	9237	8797	8615	8584	10180	11257	10909	11438	8993	7441	4885	3101	2765	1794	159052
25	959	554	424	491	1107	4727	9647	11325	10762	9168	8437	8996	9286	9607	10508	11541	10595	10701	9402	7692	4143	3689	3695	3176	160632
26	2327	1468	544	402	574	1339	3175	4866	6559	8186	9192	9694	9837	10237	10653	10381	9733	9707	8070	6295	4689	4729	4603	3223	140483
27	1578	848	570	394	362	681	1642	3153	5235	7363	9246	9837	10452	10277	9349	9114	9860	10200	9491	7779	4924	3214	2082	1490	129141
28	828	414	345	403	1208	4727	9551	10623	10244	10293	8134	7658	7774	8489	9780	10811	11249	11720	9649	6216	3869	3243	2240	1434	150902
29	764	461	404	508	1186	5265	10269	12025	10783	10139	8000	6557	6560	6931	9241	11262	10619	11506	10011	6638	3905	3624	2447	1540	150645
30	825	521	410	445	1180	4914	9353	10015	8436	8832	7965	5281	5820	7273	8779	7656	6054	8743	9416	6011	3543	3328	2426	1621	128847

Massachusetts Highway Department

H8501: Monthly Volume for 2015

Location ID:	H8501	Seasonal Factor Group:	U1-Boston
County:	Norfolk	Daily Factor Group:	
Functional Class	1	Axle Factor Group:	U1-Boston
Location:	Interstate 95; South of Central Avenue		
		Growth Factor Group:	

Month	Volume	Seasonal Factor
January	123657	0.877
February	120248	0.853
March	135527	0.961
April	147874	1.049
May	148786	1.055
June	153233	1.087
July	147120	1.043
August	146616	1.040
September	149888	1.063
October	146874	1.042
November	135601	0.962
December	136563	0.969

Multiplier to Average Month
0.948

140999

Crash Data and Worksheets

Crash Number	Crash Date	Crash Time	Crash Severity	Number of NonFatal Injuries	Number of Fatal Injuries	Number of Vehicles	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	First Harmful Event	Vehicle Sequence of Events	Driver Contributing Codes	Hit & Run	Road Surface	Ambient Light	Street Number	Roadway	Distance And Direction From Intersection	Near Intersection Roadway	Traffic Way	Roadway Intersection Type	Traffic Control Device Type	Traffic Device Functioning	X	Y
2988447	1/17/2012	7:57 PM	Property damage only (none injured)	0	0	1	Single vehicle crash	V1: Turning left	V1:W	Collision with pedestrian	V1:(Collision with pedestrian)	D1:(Failed to yield right of way),(Failure to keep in proper lane or running off road)	No hit and run	Wet	Dark - lighted roadway		GREAT PLAIN AVENUE / LINDEN STREET			Two-way, divided, unprotected median	T-intersection	Unknown	No, device not functioning	221406.137	892222.247
3255846	6/2/2012	6:09 PM	Non-fatal injury	1	0	2	Rear-end	V1: Not reported / V2:Not reported	V1:W / V2:W	Collision with motor vehicle in traffic	V2:	D1:(I) D2:(I)	No hit and run	Wet	Daylight		MARKED TREE ROAD / GREAT PLAIN AVENUE			Two-way, not divided	Four-way intersection	No controls	Not reported	221122.315	892228.985
3255853	6/2/2012	1:09 PM	Non-fatal injury	2	0	3	Angle	V1: Travelling straight ahead / V2:Slowing or stopped in traffic / V3:Travelling straight ahead	V1:W / V2:W / V3:E	Collision with motor vehicle in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic) V3:(Collision with motor vehicle in traffic)	D1:(Operating vehicle in erratic, reckless, careless, negligent or aggressive manner),(Inattention) D2:(No improper driving) D3:(No improper driving)	No hit and run	Wet	Daylight		GREAT PLAIN AVENUE / MARKED TREE ROAD			Two-way, not divided	Four-way intersection	No controls	Not reported	221122.315	892228.985
3371733	12/15/2012	3:45 PM	Non-fatal injury	5	0	2	Angle	V1: Travelling straight ahead / V2:Travelling straight ahead	V1:W / V2:E	Collision with motor vehicle in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	D1:(No improper driving) D2:(Swerving or avoiding due to wind, slippery surface, vehicle, object, non-motorist in roadway, etc)	No hit and run	Dry	Dark - lighted roadway		GREAT PLAIN AVENUE / MARKED TREE ROAD			Two-way, divided, unprotected median	T-intersection	No controls	Not reported	221122.315	892228.985
3475703	6/13/2013	11:20 AM	Non-fatal injury	1	0	2	Angle	V1: Turning left / V2:Travelling straight ahead	V1:N / V2:E	Collision with motor vehicle in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	D1:(Failed to yield right of way) D2:(No improper driving)	No hit and run	Water (standing, moving)	Daylight		LINDEN ST / GREAT PLAIN AVE			Two-way, not divided	T-intersection	Stop signs	Yes, device functioning	221406.137	892222.247
3475787	3/4/2013	4:05 PM	Property damage only (none injured)	0	0	2	Angle	V1: Entering traffic lane / V2:Travelling straight ahead	V1:W / V2:N	Collision with motor vehicle in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	D1:(Failed to yield right of way) D2:(No improper driving)	No hit and run	Dry	Dark - lighted roadway		GREAT PLAIN AVENUE / MARSHALL STREET			Two-way, not divided	T-intersection	No controls	Yes, device functioning	221277.413	892219.456
3616649	10/8/2013	7:02 PM	Property damage only (none injured)	0	0	2	Rear-end	V1: Travelling straight ahead / V2:Travelling straight ahead	V1:E / V2:E	Collision with motor vehicle in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	D1:(Operating vehicle in erratic, reckless, careless, negligent or aggressive manner),(Inattention) D2:(No improper driving)	Yes, hit and run	Dry	Daylight		GREAT PLAIN AV / LINDEN ST			Two-way, not divided	T-intersection	No controls	Not reported	221406.137	892222.247
3616716	8/19/2013	4:36 PM	Property damage only (none injured)	0	0	2	Angle	V1: Turning left / V2:Travelling straight ahead	V1:N / V2:E	Collision with motor vehicle in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	D1:(Visibility obstructed) D2:(Visibility obstructed)	No hit and run	Dry	Dark - lighted roadway		MARKED TREE RD. / GREATPLAIN AVE Rte 135 E			Two-way, not divided	T-intersection	Stop signs	Not reported	221122.315	892228.985
3861948	1/11/2014	6:52 PM	Property damage only (none injured)	0	0	3	Rear-end	V1: Slowing or stopped in traffic / V2:Travelling straight ahead / V3:Travelling straight ahead	V1:W / V2:W / V3:8	Collision with motor vehicle in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic) V3:(Collision with motor vehicle in traffic)	D1:(No improper driving) D2:(No improper driving) D3:(Swerving or avoiding due to wind, slippery surface, vehicle, object, non-motorist in roadway, etc)	No hit and run	Wet	Unknown		GREAT PLAIN AVE / MARSHALL STREET			Two-way, not divided	T-intersection	No controls	Not reported	221277.413	892219.456
3994765	10/18/2014	8:38 AM	Non-fatal injury	1	0	1	Single vehicle crash	V1: Travelling straight ahead	V1:S	Collision with curb	V1:(Collision with curb),(Collision with other fixed object(wall, building, tunnel, etc.))	D1:(Illness)	No hit and run	Dry	Daylight	1150	GREAT PLAIN AVE			Two-way, not divided	T-intersection	Stop signs	Not reported	221411.148	892222.404
3995561	11/4/2014	4:35 PM	Property damage only (none injured)	0	0	2	Sideswipe, opposite direction	V1: Slowing or stopped in traffic / V2:Travelling straight ahead	V1:8 / V2:8	Collision with motor vehicle in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	D1:(Disregarded traffic signs, signals, road markings) D2:(No improper driving)	No hit and run	Dry	Dusk		LINDEN STREET / GREAT PLAIN AVENUE			Unknown	T-intersection	Stop signs	No, device not functioning	221406.137	892222.247
4173158	11/5/2015	11:55 AM	Property damage only (none injured)	0	0	1	Single vehicle crash	V1: Travelling straight ahead	V1:8	Collision with pedestrian	V1:(Collision with pedestrian)	D1:(Inattention)	No hit and run	Dry	Daylight	1150	GREAT PLAIN AVE	50 feet S of	GREAT PLAIN AVENUE	Two-way, not divided	T-intersection	Stop signs	Yes, device functioning	221411.148	892222.404
4184952	2/4/2016	5:21 PM	Property damage only (none injured)	0	0	2	Rear-end	V1: Travelling straight ahead / V2:Travelling straight ahead	V1:W / V2:W	Collision with motor vehicle in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	D1:(No improper driving) D2:(Followed too closely)	No hit and run	Slush	Dark - lighted roadway	1218	GREAT PLAIN AVE		MARKED TREE ROAD	Two-way, not divided	Not at junction	No controls	Not reported	221122.3	892229
4184987	1/7/2016	5:51 PM	Unknown	0	0	1	Single vehicle crash	V1: Travelling straight ahead	V1:W	Collision with utility pole	V1:(Collision with utility pole)	D1:(Unknown)	No hit and run	Dry	Dark - roadway not lighted	1218	GREAT PLAIN AVE			Two-way, not divided	Four-way intersection	Stop signs	Yes, device functioning	221129.7	892228.1
4200741	4/15/2016	8:58 AM	Property damage only (none injured)	0	0	2	Single vehicle crash	V1: Travelling straight ahead / V2:Travelling straight ahead	V1:N / V2:W	Collision with motor vehicle in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	D1:(Failed to yield right of way) D2:(No improper driving)	No hit and run	Dry	Daylight	1218	GREAT PLAIN AVE			Two-way, divided, unprotected median	Four-way intersection	Stop signs	Yes, device functioning	221129.7	892228.1
4284255	8/22/2016	9:33 AM	Property damage only (none injured)	0	0	2	Angle	V1: Turning left / V2:Travelling straight ahead	V1:W / V2:W	Collision with motor vehicle in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	D1:(No improper driving) D2:(Unknown)	No hit and run	Dry	Daylight	1218	GREAT PLAIN AVE			Two-way, not divided	Not at junction	No controls	Not reported	221129.7	892228.1
4323681	10/11/2016	9:00 AM	Property damage only (none injured)	0	0	2	Rear-end	V1: Travelling straight ahead / V2:Travelling straight ahead	V1:N / V2:N	Collision with motor vehicle in traffic	V2:	D1:(I) D2:(I)	No hit and run	Dry	Daylight	1218	GREAT PLAIN AVE			Two-way, not divided	T-intersection	Stop signs	Yes, device functioning	221129.7	892228.1
4323736	12/28/2016	8:17 AM	Property damage only (none injured)	0	0	2	Single vehicle crash	V1: Turning right / V2:Travelling straight ahead	V1:N / V2:E	Collision with motor vehicle in traffic	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)	D1:(Failed to yield right of way) D2:(No improper driving)	No hit and run	Dry	Daylight	1150	GREAT PLAIN AVE			Two-way, divided, unprotected median	T-intersection	Stop signs	Yes, device functioning	221411.1	892222.4

SELECT [Crash Number], [Crash Date], [Crash Time], [Crash Hour], [City/Town], [Locality], [RPA Abbreviation], [MassHighway District], [Crash Severity], [Maximum Injury Severity Reported], [Number of NonFatal Injuries], [Number of Fatal Injuries], [Number of Vehicles], [Manner of Collision], [Vehicle Action Prior to Crash], [Vehicle Travel Directions], [First Harmful Event], [First Harmful Event Location], [Most Harmful Events], [Vehicle Sequence of Events], [Vehicle Configuration], [FMSCA Reportable], [Age of Driver - Youngest Known], [Age of Driver - Oldest Known], [Driver Contributing Codes], [Non Motorist Type], [Non Motorist Action], [Non Motorist Location], [Hit & Run], [Road Surface], [Ambient Light], [Weather Condition], [Street Number], [Roadway], [Distance And Direction From Intersection], [Near Intersection Roadway], [Exit Route], [Distance And Direction From Exit Number], [Exit Number], [Milemarker Route], [Distance And Direction From Milemarker], [Milemarker], [Landmark], [Distance And Direction From Landmark], [Traffic Way], [Speed Limit], [Roadway Intersection Type], [Traffic Control Device Type], [Traffic Device Functioning], [Police Agency], [Linked RI Functional Classification], [Linked RI Access Control], [Linked RI Toll Road], [Linked RI Jurisdiction], [Linked RI Number of Travel Lanes], [Linked RI Opposing Number of Travel Lanes], [Linked RI Street Name], [Linked RI Street Operation], [Linked RI Facility Type], [Linked RI Speed Limit], [Linked RI Urban Type], [Linked RI Urbanized Area], [Linked RI Urban Location Type], [Linked RI Average Daily Traffic], [Linked RI Year of ADT], [Linked RI Truck Route], [Schoolbus Related], [Is Geocoded], [Geocoding Method], [X], [Y], [Crash Status], [Road Segment ID], [County], [RMV Document #], [Driver Distracted By], [Age of Non-Motorist - Youngest Known], [Age of Non-Motorist - Oldest Known], [Report IDs], [Federal Functional Classification], [Roadway Contributing Code] FROM [TBL_CRASH_REPORT_VIEW] WHERE ((([City/Town] = 'NEEDHAM') AND ([Crash Date] > '2011-12-31'))

This query was also restricted by a map filter.

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Needham COUNT DATE : May-19

DISTRICT : 6 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

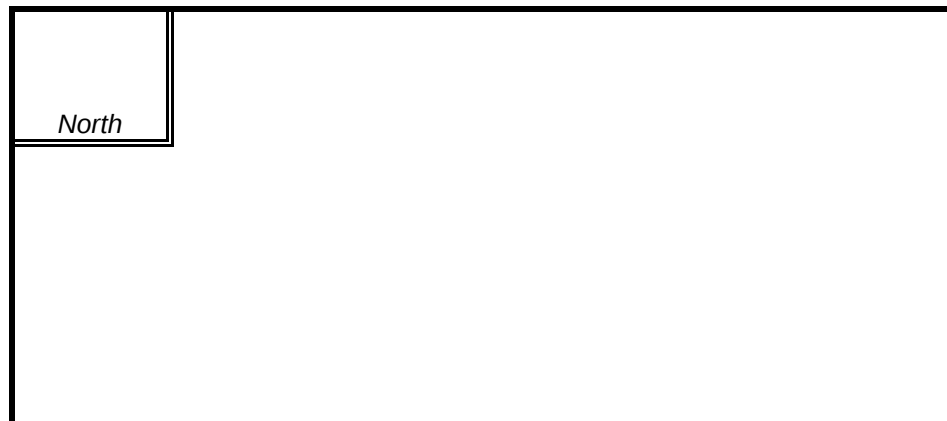
~ INTERSECTION DATA ~

MAJOR STREET : Great Plain Avenue

MINOR STREET(S) : Marked Tree Road

Gage Street

INTERSECTION
DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	525	701	97	3		1,326

" K " FACTOR :

0.098

INTERSECTION ADT (V) = TOTAL DAILY
APPROACH VOLUME :

13,531

TOTAL # OF CRASHES :

9

OF
YEARS :

5

AVERAGE # OF
CRASHES PER YEAR (A) :

1.80

CRASH RATE CALCULATION :

0.36

RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: _____

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Needham COUNT DATE : May-19

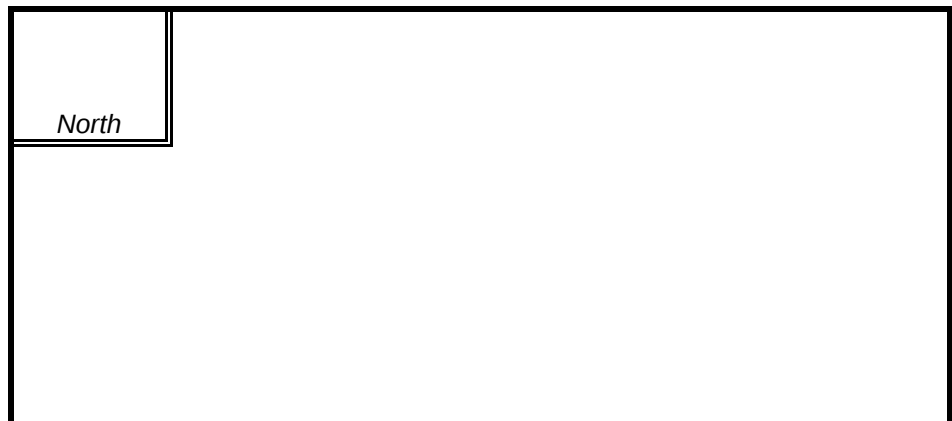
DISTRICT : 6 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Great Plain Avenue

MINOR STREET(S) : Marshall Street

INTERSECTION
DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	520	710	0	11		1,241

" K " FACTOR :

0.098

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

12,663

TOTAL # OF CRASHES :

2

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

0.40

CRASH RATE CALCULATION :

0.09

RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: _____

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Needham COUNT DATE : May-19

DISTRICT : 6 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Great Plain Avenue

MINOR STREET(S) : Linden Street

INTERSECTION
DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	528	895	89	14		1,526

" K " FACTOR :

0.098

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

15,571

TOTAL # OF CRASHES :

7

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

1.40

CRASH RATE CALCULATION :

0.25

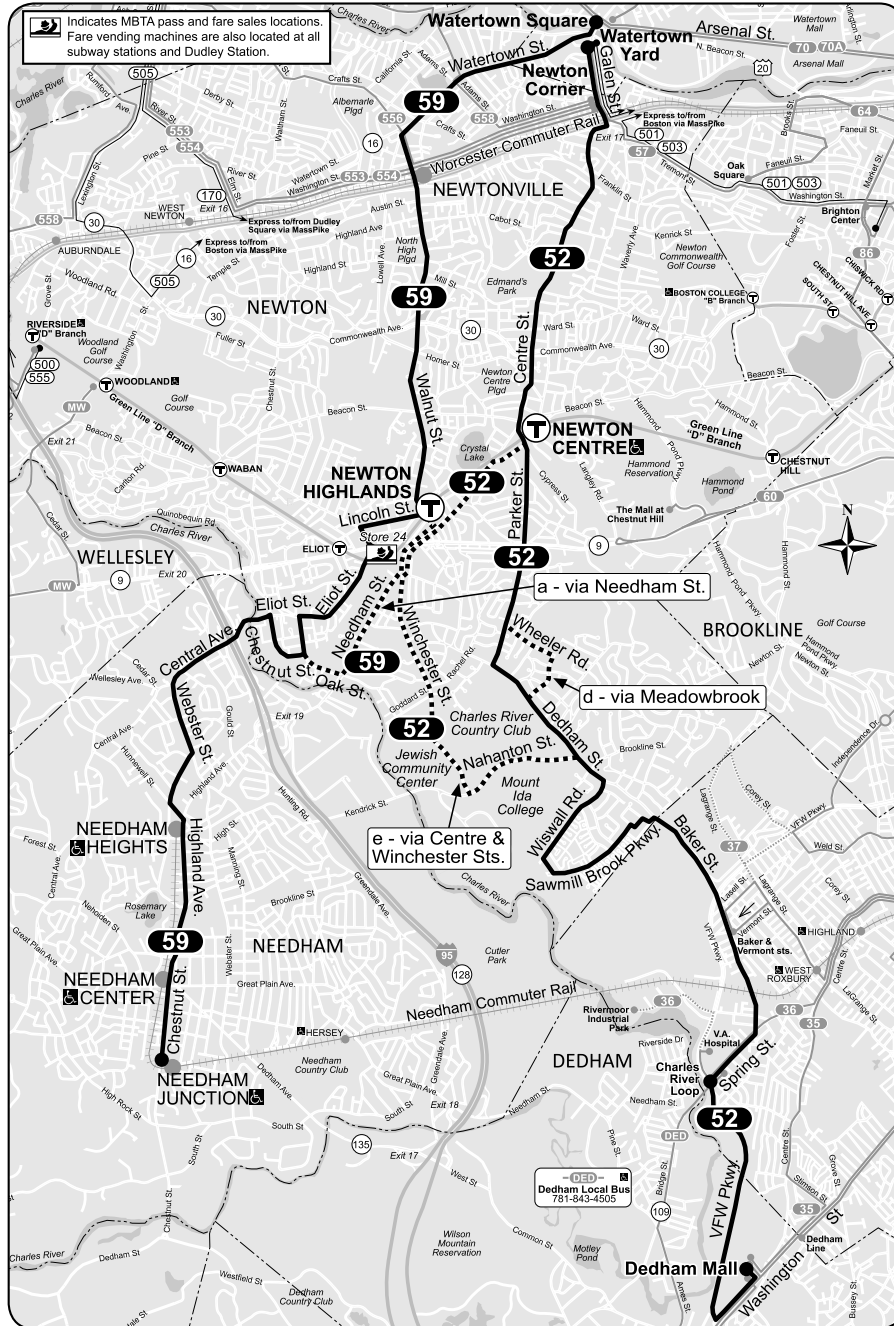
RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: _____

Bus Route Data

Route 52 Dedham Mall or Charles River Loop - Watertown Yard **Route 59 Needham Junction - Watertown Square**



52•59

Effective March 17, 2019

52 Dedham Mall or Charles River Loop - Watertown Yard

59 Needham Junction-Watertown Square

Serving

- Newton Center
- Oak Hill
- Newton Corner
- Jewish Community Center
- BC Law School
- Needham Center
- Needham Heights
- Newton Highlands
- Newtonville
- Green Line
- Needham Commuter Rail
- Worcester Commuter Rail

Massachusetts Bay Transportation Authority

Information 617-222-3200 • 1-800-392-6100

(TTY) 617-222-5146 • www.mbta.com

massDOT

Massachusetts Department of Transportation

52				59			
Inbound		Weekday		Inbound		Weekday	
Leave Dedham Mail	Lvl/Arrive Charles River	Arrive Watertown Yard	Leave Watertown Yard	Leave Needham Junction	Arrive Newton Highlands	Arrive Watertown Square	Leave Watertown Square
6:15A	6:33A	6:43A	d 7:00A	6:20A	6:38A	6:52A	a 6:05A
6:45	7:03	7:13	d 7:25	6:55	7:14	7:31	6:35
7:15	7:34	7:48	d 8:05	7:30	7:53	8:17	a 7:10
7:45	8:07	8:19	e 8:30	8:05	8:28	8:43	7:30
8:15	8:37	8:49	9:00	8:40	9:01	9:21	8:08
9:00A	9:13	9:27	9:45	9:15	9:35	9:51	8:40
10:30	10:36	11:06	e 11:15	10:35	10:54	11:10	9:11
12:00N	12:11P	12:30P	12:45P	a 11:20	11:40	11:55	a 10:35
1:30P	1:34	1:53	e 2:15	12:05P	12:25P	12:42P	a 12:05P
2:20	2:24	2:48	d 2:47	12:50	1:10	1:25	12:21P
3:05	3:09	3:28	e 3:10	1:35	1:55	2:13	1:06
3:50	3:54	4:16	3:50	a 2:25	2:45	3:04	1:51
4:25	4:32	4:48	e 4:35	3:10	3:33	3:50	2:38
4:45	4:49	5:12	5:10	a 3:45	4:05	4:24	3:14
5:30	5:39	5:55	e 5:45	4:20	4:43	5:00	3:49
6:10	6:14	6:37	6:20	a 4:55	5:18	5:38	4:19
6:45	6:49	7:12	6:55	a 5:30	5:54	6:14	4:59
			7:30	6:10	6:30	6:46	5:10
			7:39	6:40	7:00	7:14	5:45
			7:57	a 7:15	7:34	7:48	a 6:20
				8:07	8:21		7:15
							7:35
d - Via Meadowbrook & Wheeler Roads e - Via Centre & Winchester Streets s - Does NOT run during school vacation				a - Via Needham Street			
No Route 52 service on Saturday or Sunday				59			
Route 52		Route 59		Inbound		Saturday	
Dedham Mail or Charles River Loop- Watertown Yard		Needham Junction-Watertown Square		Leave Needham Junction	Arrive Newton Highlands	Leave Watertown Square	Arrive Newton Highlands
				7:05A	7:25A	7:40A	6:20A
				8:35	8:55	9:10	8:04
				10:05	10:25	10:40	9:37
				11:35	11:55	12:14P	11:07
				1:05P	1:25P	1:42P	12:37P
				2:35	2:54	3:10	2:07
				4:05	4:23	4:39	3:37
				5:35	5:53	6:09	5:05
				7:05	7:22	7:35	6:35
						6:20	6:35
							6:54
59				Sunday			
Inbound		Outbound		Inbound		Outbound	
Leave Needham Junction	Arrive Newton Highlands	Leave Watertown Square	Arrive Newton Highlands	Leave Needham Junction	Arrive Newton Highlands	Leave Watertown Square	Arrive Newton Highlands
7:50A	8:08A	8:20A	7:05A	7:50A	8:08A	8:20A	7:16A
9:20	9:38	9:50	11:22	9:20	9:38	9:50	8:48
10:50	11:08	11:22	10:05	10:50	11:08	11:22	10:18
12:20P	12:39P	12:54P	11:35	12:20P	12:39P	12:54P	11:49
1:50	2:06	2:21	1:05P	1:50	2:06	2:21	1:19P
3:20	3:39	3:56	2:35	3:20	3:39	3:56	2:49
4:50	5:08	5:24	4:05	4:50	5:08	5:24	4:19
6:20	6:36	6:51	5:35	6:20	6:36	6:51	5:49
							6:09

All buses are accessible to persons with disabilities

Fare	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	\$1.70	\$1.70	\$2.25	\$2.25
CharlieTicket	\$2.00	\$2.00	\$2.75	\$4.75
Cash-on-Board	\$2.00	\$4.00	\$2.75	\$4.75
Student/Youth*	\$0.85	\$0.85	\$1.10	\$1.10
Senior/TAP**	\$0.85	\$0.85	\$1.10	\$1.10

VALID PASSES: LinkPass (\$84.50/mo.); Local Bus (\$55/mo.); *Student/Youth LinkPass (\$30.00/mo.); **Senior/TAP LinkPass (\$30/mo.); and express bus, commuter rail, and **FREE FARES:** Children 11 and under ride free when accompanied by an adult. Blind Access CharlieCard holders ride free and if using a guide, the guide rides free. * Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards are available to eligible high school and high school seniors in the Boston metro area. Visit www.mbta.com/youthpass for details. ** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

Spring 2019 Holidays
4/15/19, see Weekday 5/27/19, see Sunday

Trip Generation Worksheets

Proposed 40B, Norwood, MA

Land Use Code (LUC) 220 - Multifamily Housing (Low-Rise)_

Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: Dwelling units

Independent Variable (X): 16

AVERAGE WEEKDAY DAILY

$T = 7.56 * (X) - 40.86$ 29 Studies, Avg size = 168 units

$T = 7.56 * (16) - 40.86$ $R^2 = 0.89$ AR = 7.32

$T = 80.10$

$T = 80$ vehicle trips 5.00

with 50% (40 vpd) entering and 50% (40 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

$\ln T = 0.95 \ln (X) - 0.51$ 42 Studies, Avg size = 199 units

$\ln T = 0.95 \ln (16) - 0.51$ $R^2 = 0.90$ AR = 0.46

$\ln T = 2.12$

$T = 8.36$

$T = 8$ vehicle trips

with 23% (2 vph) entering and 77% (6 vph) exiting.

0.13

0.38

WEEKDAY MORNING PEAK HOUR OF GENERATOR

$\ln T = 0.94 \ln (X) - 0.29$ 36 Studies, Avg size = 161 units

$\ln T = 0.94 \ln (16) - 0.29$ $R^2 = 0.91$ AR = 0.56

$\ln T = 2.32$

$T = 10.14$

$T = 10$ vehicle trips

with 28% (3 vph) entering and 72% (7 vph) exiting.

0.19

0.44

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

$\ln T = 0.89 \ln (X) - 0.02$ 50 Studies, Avg size = 187 units

$\ln T = 0.89 \ln (16) - 0.02$ $R^2 = 0.86$ AR = 0.56

$\ln T = 2.45$

$T = 11.56$

$T = 12$ vehicle trips

with 63% (8 vph) entering and 37% (4 vph) exiting.

0.50

0.25

WEEKDAY EVENING PEAK HOUR OF GENERATOR

$T = 0.66 * (X) + 1.41$ 35 Studies, Avg size = 146 units

$T = 0.66 * (16) + 1.41$ $R^2 = 0.94$ AR = 0.67

$T = 11.97$

$T = 12$ vehicle trips

with 59% (7 vph) entering and 41% (5 vph) exiting.

0.44

0.31

Proposed 40B, Norwood, MA

Land Use Code (LUC) 220 - Multifamily Housing (Low-Rise)_

Source: Institute of Transportation Engineers (ITE) - 10th Edition

Average Vehicle Trips Ends vs: Dwelling units

Independent Variable (X): 16

SATURDAY DAILY

$T = 14.01 * (X) - 521.69$ 5 Studies, Avg size = 89 units

$T = 14.01 * (16) - 521.69$ $R^2 = 0.93$ AR = 8.14

$T = -297.53$

$T = 130$ vehicle trips 8.13

with 50% (65 vpd) entering and 50% (65 vpd) exiting.

4.06

4.06

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

$T = 1.08 * (X) - 33.24$ 5 Studies, Avg size = 89 units

$T = 1.08 * (16) - 33.24$ $R^2 = 0.92$ AR = 0.70

$T = -15.96$

$T = 11$ vehicle trips

with 50% (6 vph) entering and 50% (5 vph) exiting.

0.38

0.33

Daycare, Needham, MA

Land Use Code (LUC) 565 - Day Care Center

Source : Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition

Average Vehicle Trips Ends vs.: 1,000 Square Feet Gross Floor Area
Independent Variable (X): 10.000 ksf

AVERAGE WEEKDAY DAILY

$T = 47.62 * X$ 27 Studies
 $T = 47.62 * 10.000$ Avg sf of GFA = 5 ksf
 $T = 476.20$
 $T = 476$ vehicle trips
with 50% (238 vpd) entering and 50% (238 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

$T = 11.0 * (X)$ 89 Studies
 $T = 11.0 * 10.000$ Avg sf of GFA = 5 ksf
 $T = 110.00$
 $T = 110$ vehicle trips
with 53% (58 vph) entering and 47% (52 vph) exiting.
5.83 5.17

WEEKDAY MORNING PEAK HOUR OF GENERATOR

$T = 11.73 * (X)$ 84 Studies
 $T = 11.73 * 10.000$ Avg sf of GFA = 4 ksf
 $T = 117.30$
 $T = 117$ vehicle trips
with 53% (62 vph) entering and 47% (55 vph) exiting.
6.20 5.50

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

$T = 11.12 * X$ 90 Studies
 $T = 11.12 * 10.000$ Avg sf of GFA = 5 ksf
 $T = 111.20$
 $T = 111$ vehicle trips
with 47% (52 vph) entering and 53% (59 vph) exiting.
5.22 5.88

WEEKDAY EVENING PEAK HOUR OF GENERATOR

$T = 11.82 * X$ 84 Studies
 $T = 11.82 * 10.000$ Avg sf of GFA = 4 ksf
 $T = 118.20$
 $T = 118$ vehicle trips
with 47% (55 vph) entering and 53% (63 vph) exiting.
5.55 6.25

Daycare, Needham, MA

Land Use Code (LUC) 565 - Day Care Center

Source : Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition

Average Vehicle Trips Ends vs.: 1,000 Square Feet Gross Floor Area
Independent Variable (X): 10.000 ksf

SATURDAY DAILY

T = $6.22 * X$ Limited Data, 5 Studies
T = $6.22 * 10.000$ Avg sf of GFA = 5 ksf
T = 62.20
T = 62 vehicle trips
with 50% (31 vpd) entering and 50% (31 vpd) exiting.
3.10 3.10

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

T = $1.70 * X$ Limited Data, 5 Studies
T = $1.70 * 10.000$ Avg sf of GFA = 5 ksf
T = 17.00
T = 17 vehicle trips
with 63% (11 vph) entering and 37% (6 vph) exiting.
1.07 0.63

SUNDAY DAILY

T = $5.84 * X$ Limited Data, 5 Studies
T = $5.84 * 10.000$ Avg sf of GFA = 5 ksf
T = 58.40
T = 58 vehicle trips
with 50% (29 vpd) entering and 50% (29 vpd) exiting.
2.90 2.90

SUNDAY MIDDAY PEAK HOUR OF GENERATOR

T = $1.75 * X$ Limited Data, 5 Studies
T = $1.75 * 10.000$ Avg sf of GFA = 5 ksf
T = 17.50
T = 18 vehicle trips
with 54% (10 vph) entering and 46% (8 vph) exiting.
0.97 0.83

Trip Distribution Worksheets

Needham Gravity Model

Table 3. Residence MCD/County to Workplace MCD/County Flows for Massachusetts Sorted by Residence Geography: 2006-2010

For more information on sampling and estimation methods, confidentiality protection, and sampling and nonsampling errors, see <www.census.gov/acs/www/Downloads/data_documentation/Accuracy/MultiyearACSAccuracyofData2010.pdf>.

		Residence		Workplace																		
Number	State	MCD	State/U.S. Island Area/Foreign Country	MCD	Marked Tree Road		Great Plain Avenue		Linden Street		Great Plain Avenue		Marked Tree Road		Great Plain Avenue		Linden Street		Great Plain Avenue			
					(From South)	(From West)	(From South)	(From East)	(From South)	(From West)	(From South)	(From East)	(From South)	(From West)	(From South)	(From East)						
3,353	Massachusetts	Needham town	Massachusetts	Needham town	15		15		15		55	100	309		309		309		1132	2058	yes	
3,040	Massachusetts	Needham town	Massachusetts	Boston city							100	100	0		0		0		1408	1408	yes	
902	Massachusetts	Needham town	Massachusetts	Newton city			50				50	100	0		214		0		214	427	yes	
610	Massachusetts	Needham town	Massachusetts	Cambridge city							100	100	0		0		0		359	359	yes	
559	Massachusetts	Needham town	Massachusetts	Wellesley town			100				100	100	0		291		0		0	291	yes	
357	Massachusetts	Needham town	Massachusetts	Waltham city							100	100	0		0		0		258	258	yes	
235	Massachusetts	Needham town	Massachusetts	Framingham town	10		90				100	100	19		167		0		0	186	yes	
230	Massachusetts	Needham town	Massachusetts	Natick town	20		80				100	100	37		149		0		0	186	yes	
224	Massachusetts	Needham town	Massachusetts	Dedham town							100	100	0		0		0		182	182	yes	
179	Massachusetts	Needham town	Massachusetts	Brookline town							100	100	0		0		0		179	179	yes	
177	Massachusetts	Needham town	Massachusetts	Weston town							100	100	0		0		0		164	164	yes	
170	Massachusetts	Needham town	Massachusetts	Burlington town							100	100	0		0		0		162	162	yes	
148	Massachusetts	Needham town	Massachusetts	Lexington town							100	100	0		0		0		146	146	yes	
147	Massachusetts	Needham town	Massachusetts	Weymouth Town city							100	100	0		0		0		144	144	yes	
139	Massachusetts	Needham town	Massachusetts	Watertown Town city			10				90	100	0		13		0		116	129	yes	
126	Massachusetts	Needham town	Massachusetts	Norwood town	10						90	100	12		0		0		112	124	yes	
105	Massachusetts	Needham town	Massachusetts	Quincy city							100	100	0		0		0		103	103	yes	
98	Massachusetts	Needham town	Massachusetts	Woburn city							100	100	0		0		0		98	98	yes	
94	Massachusetts	Needham town	Massachusetts	Stoughton town							100	100	0		0		0		91	91	yes	
91	Massachusetts	Needham town	Massachusetts	Westwood town	90						10	100	80		0		0		9	89	yes	
85	Massachusetts	Needham town	Massachusetts	Bedford town							100	100	0		0		0		79	79	yes	
81	Massachusetts	Needham town	Massachusetts	Worcester city							100	100	0		0		0		77	77	yes	
75	Massachusetts	Needham town	Massachusetts	Malden city							100	100	0		0		0		74	74	yes	
75	Massachusetts	Needham town	Massachusetts	Braintree Town city							100	100	0		0		0		71	71	yes	
73	Massachusetts	Needham town	Massachusetts	Marlborough city			50				50	100	0		33		0		33	66	yes	
68	Massachusetts	Needham town	Massachusetts	Billerica town							100	100	0		0		0		53	53	yes	
62	Massachusetts	Needham town	Massachusetts	Somerville city							100	100	0		0		0		53	53	yes	
60	Massachusetts	Needham town	Rhode Island	Providence city							100	100	0		0		0		51	51	yes	
58	Massachusetts	Needham town	Massachusetts	Foxborough town	30						70	100	15		0		0		34	49	yes	
53	Massachusetts	Needham town	Massachusetts	Belmont town			10				90	100	0		5		0		43	48	yes	
53	Massachusetts	Needham town	Massachusetts	Concord town							100	100	0		0		0		45	45	yes	
52	Massachusetts	Needham town	Massachusetts	Rockland town							100	100	0		0		0		44	44	yes	

MOE--margin of error. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval.

Source: U.S. Census Bureau, 2006-2010 American Community Survey

472 1180 309 5534 7494
6.3 15.7 4.1 73.8 100

Say	6	16	4	74	100
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Capacity Analysis Worksheets

3: Marked Tree Rd./Gage St. & Great Plain Ave.

Lanes, Volumes, Timings

2019 Existing AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	356	18	58	430	0	120	1	161	1	0	7
Future Volume (vph)	0	356	18	58	430	0	120	1	161	1	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.993						0.923			0.882	
Flt Protected					0.994			0.979			0.994	
Satd. Flow (prot)	0	1851	0	0	1825	0	0	1690	0	0	1335	0
Flt Permitted					0.994			0.979			0.994	
Satd. Flow (perm)	0	1851	0	0	1825	0	0	1690	0	0	1335	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		390			538			441			260	
Travel Time (s)		7.6			10.5			10.0			5.9	
Peak Hour Factor	0.83	0.83	0.83	0.93	0.93	0.93	0.88	0.88	0.88	0.50	0.50	0.50
Heavy Vehicles (%)	0%	2%	0%	7%	3%	0%	1%	0%	2%	100%	0%	14%
Adj. Flow (vph)	0	429	22	62	462	0	136	1	183	2	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	451	0	0	524	0	0	320	0	0	16	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 78.9% ICU Level of Service D

Analysis Period (min) 15

3: Marked Tree Rd./Gage St. & Great Plain Ave.
HCM 2010 TWSC

2019 Existing AM Peak Hour

Intersection												
Int Delay, s/veh	22.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	356	18	58	430	0	120	1	161	1	0	7
Future Vol, veh/h	0	356	18	58	430	0	120	1	161	1	0	7
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	83	83	83	93	93	93	88	88	88	50	50	50
Heavy Vehicles, %	0	2	0	7	3	0	1	0	2	100	0	14
Mvmt Flow	0	429	22	62	462	0	136	1	183	2	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	462	0	0	451	0	0	1034	1027	440	1119	1038	462
Stage 1	-	-	-	-	-	-	440	440	-	587	587	-
Stage 2	-	-	-	-	-	-	594	587	-	532	451	-
Critical Hdwy	4.1	-	-	4.17	-	-	7.11	6.5	6.22	8.1	6.5	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.263	-	-	3.509	4	3.318	4.4	4	3.426
Pot Cap-1 Maneuver	1110	-	-	1084	-	-	211	236	617	121	233	576
Stage 1	-	-	-	-	-	-	598	581	-	360	500	-
Stage 2	-	-	-	-	-	-	493	500	-	390	574	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1110	-	-	1084	-	-	194	218	617	80	215	576
Mov Cap-2 Maneuver	-	-	-	-	-	-	194	218	-	80	215	-
Stage 1	-	-	-	-	-	-	598	581	-	360	462	-
Stage 2	-	-	-	-	-	-	444	462	-	274	574	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	88.7	16.7
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	319	1110	-	-	1084	-	-	325
HCM Lane V/C Ratio	1.005	-	-	-	0.058	-	-	0.049
HCM Control Delay (s)	88.7	0	-	-	8.5	0	-	16.7
HCM Lane LOS	F	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	11.1	0	-	-	0.2	-	-	0.2

5: Willow St. & Walnut St.
Lanes, Volumes, Timings

2019 Existing AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↱	
Traffic Volume (vph)	14	1	1	7	3	4
Future Volume (vph)	14	1	1	7	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.993				0.922	
Flt Protected				0.994	0.979	
Satd. Flow (prot)	1887	0	0	1370	1715	0
Flt Permitted				0.994	0.979	
Satd. Flow (perm)	1887	0	0	1370	1715	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	100			44	336	
Travel Time (s)	2.3			1.0	7.6	
Peak Hour Factor	0.75	0.75	0.50	0.50	0.38	0.38
Heavy Vehicles (%)	0%	0%	100%	29%	0%	0%
Adj. Flow (vph)	19	1	2	14	8	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	16	19	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	14	1	1	7	3	4
Future Vol, veh/h	14	1	1	7	3	4
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	75	75	50	50	38	38
Heavy Vehicles, %	0	0	100	29	0	0
Mvmt Flow	19	1	2	14	8	11
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	20	0	37	19
Stage 1	-	-	-	-	19	-
Stage 2	-	-	-	-	18	-
Critical Hdwy	-	-	5.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3.1	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1139	-	981	1065
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1010	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1139	-	979	1065
Mov Cap-2 Maneuver	-	-	-	-	979	-
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1008	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1		8.6	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1026	-	-	1139	-	
HCM Lane V/C Ratio	0.018	-	-	0.002	-	
HCM Control Delay (s)	8.6	-	-	8.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

6: Linden St./Washburn Ave. & Great Plain Ave.

Lanes, Volumes, Timings

2019 Existing AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	493	33	165	480	2	10	1	262	1	2	3
Future Volume (vph)	1	493	33	165	480	2	10	1	262	1	2	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.992						0.870			0.939	
Flt Protected					0.985			0.998			0.991	
Satd. Flow (prot)	0	1850	0	0	1756	0	0	1634	0	0	1768	0
Flt Permitted					0.985			0.998			0.991	
Satd. Flow (perm)	0	1850	0	0	1756	0	0	1634	0	0	1768	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		418			323			475			414	
Travel Time (s)		11.4			8.8			10.8			9.4	
Peak Hour Factor	0.85	0.85	0.85	0.69	0.90	0.90	0.70	0.70	0.70	0.57	0.57	0.57
Heavy Vehicles (%)	0%	2%	0%	8%	6%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	1	580	39	239	533	2	14	1	374	2	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	620	0	0	774	0	0	389	0	0	11	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 90.3%

ICU Level of Service E

Analysis Period (min) 15

6: Linden St./Washburn Ave. & Great Plain Ave.
HCM 2010 TWSC

2019 Existing AM Peak Hour

Intersection												
Int Delay, s/veh	20.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	493	33	165	480	2	10	1	262	1	2	3
Future Vol, veh/h	1	493	33	165	480	2	10	1	262	1	2	3
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	85	85	85	69	90	90	70	70	70	57	57	57
Heavy Vehicles, %	0	2	0	8	6	0	0	0	1	0	0	0
Mvmt Flow	1	580	39	239	533	2	14	1	374	2	4	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	536	0	0	619	0	0	1619	1616	599	1803	1634	534
Stage 1	-	-	-	-	-	-	602	602	-	1013	1013	-
Stage 2	-	-	-	-	-	-	1017	1014	-	790	621	-
Critical Hdwy	4.1	-	-	4.18	-	-	7.1	6.5	6.21	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	-	-	2.272	-	-	3.5	4	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1042	-	-	933	-	-	84	105	503	62	102	550
Stage 1	-	-	-	-	-	-	490	492	-	291	319	-
Stage 2	-	-	-	-	-	-	289	319	-	386	482	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1042	-	-	933	-	-	57	67	503	11	65	550
Mov Cap-2 Maneuver	-	-	-	-	-	-	57	67	-	11	65	-
Stage 1	-	-	-	-	-	-	490	492	-	291	203	-
Stage 2	-	-	-	-	-	-	179	203	-	98	482	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.1			83.4			102.5		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	384	1042	-	-	933	-	-	47				
HCM Lane V/C Ratio	1.016	0.001	-	-	0.256	-	-	0.224				
HCM Control Delay (s)	83.4	8.5	0	-	10.2	0	-	102.5				
HCM Lane LOS	F	A	A	-	B	A	-	F				
HCM 95th %tile Q(veh)	12.5	0	-	-	1	-	-	0.7				

9: Site Driveway/Marshall St. & Great Plain Ave.

Lanes, Volumes, Timings

2019 Existing AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	518	0	0	487	6	0	0	0	9	0	1
Future Volume (vph)	0	518	0	0	487	6	0	0	0	9	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.998											0.985
Flt Protected												0.957
Satd. Flow (prot)	0	1827	0	0	1817	0	0	1900	0	0	1791	0
Flt Permitted												0.957
Satd. Flow (perm)	0	1827	0	0	1817	0	0	1900	0	0	1791	0
Link Speed (mph)	35				35				30		30	
Link Distance (ft)	538				418				511		386	
Travel Time (s)	10.5				8.1				11.6		8.8	
Peak Hour Factor	0.87	0.87	0.87	0.95	0.95	0.95	0.92	0.92	0.92	0.56	0.56	0.56
Heavy Vehicles (%)	0%	4%	0%	0%	4%	33%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	595	0	0	513	6	0	0	0	16	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	595	0	0	519	0	0	0	0	0	18	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				0		0	
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
Sign Control	Free				Free				Stop		Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	37.3%				ICU Level of Service A							
Analysis Period (min)	15											

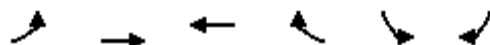
9: Site Driveway/Marshall St. & Great Plain Ave.
HCM 2010 TWSC

2019 Existing AM Peak Hour

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	518	0	0	487	6	0	0	0	9	0	1
Future Vol, veh/h	0	518	0	0	487	6	0	0	0	9	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	87	87	87	95	95	95	92	92	92	56	56	56
Heavy Vehicles, %	0	4	0	0	4	33	0	0	0	0	0	0
Mvmt Flow	0	595	0	0	513	6	0	0	0	16	0	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	519	0	0	595	0	0	1112	1114	595	1111	1111	516
Stage 1	-	-	-	-	-	-	595	595	-	516	516	-
Stage 2	-	-	-	-	-	-	517	519	-	595	595	-
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	1057	-	-	991	-	-	188	210	508	188	211	563
Stage 1	-	-	-	-	-	-	494	496	-	546	538	-
Stage 2	-	-	-	-	-	-	545	536	-	494	496	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1057	-	-	991	-	-	187	210	508	188	211	563
Mov Cap-2 Maneuver	-	-	-	-	-	-	187	210	-	188	211	-
Stage 1	-	-	-	-	-	-	494	496	-	546	538	-
Stage 2	-	-	-	-	-	-	543	536	-	494	496	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			24.6		
HCM LOS							A			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	1057	-	-	991	-	-	201				
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.089				
HCM Control Delay (s)	0	0	-	-	0	-	-	24.6				
HCM Lane LOS	A	A	-	-	A	-	-	C				
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.3				

13: Walnut St. & Site Driveway Lanes, Volumes, Timings

2019 Existing AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Volume (vph)	0	15	10	0	0	0
Future Volume (vph)	0	15	10	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	1900	1583	0	1900	0
Flt Permitted						
Satd. Flow (perm)	0	1900	1583	0	1900	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		350	100		511	
Travel Time (s)		8.0	2.3		11.6	
Peak Hour Factor	0.75	0.75	0.63	0.63	0.92	0.92
Heavy Vehicles (%)	0%	0%	20%	0%	0%	0%
Adj. Flow (vph)	0	20	16	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	20	16	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 6.7%				ICU Level of Service A		
Analysis Period (min) 15						

13: Walnut St. & Site Driveway
HCM 2010 TWSC

2019 Existing AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	15	10	0	0	0
Future Vol, veh/h	0	15	10	0	0	0
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	75	75	63	63	92	92
Heavy Vehicles, %	0	0	20	0	0	0
Mvmt Flow	0	20	16	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	16	0	-	0	36	16
Stage 1	-	-	-	-	16	-
Stage 2	-	-	-	-	20	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1615	-	-	-	982	1069
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1008	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1615	-	-	-	982	1069
Mov Cap-2 Maneuver	-	-	-	-	982	-
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1008	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1615	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

17: Walnut St. & Walnut Pl.
Lanes, Volumes, Timings

2019 Existing AM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	18	5	0	32	3
Future Volume (vph)	0	18	5	0	32	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.989	
Flt Protected					0.956	
Satd. Flow (prot)	0	1900	1583	0	1657	0
Flt Permitted					0.956	
Satd. Flow (perm)	0	1900	1583	0	1657	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		44	322		231	
Travel Time (s)		1.0	7.3		5.3	
Peak Hour Factor	0.75	0.75	0.41	0.41	0.49	0.49
Heavy Vehicles (%)	0%	0%	20%	0%	3%	67%
Adj. Flow (vph)	0	24	12	0	65	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	24	12	0	71	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	18	5	0	32	3
Future Vol, veh/h	0	18	5	0	32	3
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	75	75	41	41	49	49
Heavy Vehicles, %	0	0	20	0	3	67
Mvmt Flow	0	24	12	0	65	6
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	36	12
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	-	-	-	-	6.43	6.87
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	-	-	3.527	3.903
Pot Cap-1 Maneuver	0	-	-	0	974	907
Stage 1	0	-	-	0	1008	-
Stage 2	0	-	-	0	996	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	974	907
Mov Cap-2 Maneuver	-	-	-	-	974	-
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	996	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9		
HCM LOS	A					
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	968			
HCM Lane V/C Ratio	-	-	0.074			
HCM Control Delay (s)	-	-	9			
HCM Lane LOS	-	-	A			
HCM 95th %tile Q(veh)	-	-	0.2			

3: Marked Tree Rd./Gage St. & Great Plain Ave.

Lanes, Volumes, Timings

2019 Existing PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	446	77	233	467	1	23	1	73	1	0	2
Future Volume (vph)	2	446	77	233	467	1	23	1	73	1	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.980						0.898			0.916	
Flt Protected					0.984			0.988			0.982	
Satd. Flow (prot)	0	1862	0	0	1857	0	0	1686	0	0	1169	0
Flt Permitted					0.984			0.988			0.982	
Satd. Flow (perm)	0	1862	0	0	1857	0	0	1686	0	0	1169	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		390			538			441			260	
Travel Time (s)		7.6			10.5			10.0			5.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.88	0.88	0.88	0.38	0.38	0.38
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	100%	0%	14%
Adj. Flow (vph)	2	469	81	245	492	1	26	1	83	3	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	552	0	0	738	0	0	110	0	0	8	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 82.7% ICU Level of Service E

Analysis Period (min) 15

3: Marked Tree Rd./Gage St. & Great Plain Ave.
HCM 2010 TWSC

2019 Existing PM Peak Hour

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	446	77	233	467	1	23	1	73	1	0	2
Future Vol, veh/h	2	446	77	233	467	1	23	1	73	1	0	2
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	95	95	95	95	95	95	88	88	88	38	38	38
Heavy Vehicles, %	0	0	0	0	1	0	0	0	0	100	0	14
Mvmt Flow	2	469	81	245	492	1	26	1	83	3	0	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	493	0	0	551	0	0	1499	1497	510	1539	1538	492
Stage 1	-	-	-	-	-	-	514	514	-	983	983	-
Stage 2	-	-	-	-	-	-	985	983	-	556	555	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	8.1	6.5	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	4.4	4	3.426
Pot Cap-1 Maneuver	1081	-	-	1029	-	-	102	124	567	57	117	553
Stage 1	-	-	-	-	-	-	547	539	-	202	329	-
Stage 2	-	-	-	-	-	-	301	329	-	377	516	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1081	-	-	1029	-	-	75	83	567	36	78	553
Mov Cap-2 Maneuver	-	-	-	-	-	-	75	83	-	36	78	-
Stage 1	-	-	-	-	-	-	545	537	-	201	221	-
Stage 2	-	-	-	-	-	-	200	221	-	320	514	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.2			37.6			45.8		
HCM LOS							E			E		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	217	1081	-	-	1029	-	-	96				
HCM Lane V/C Ratio	0.508	0.002	-	-	0.238	-	-	0.082				
HCM Control Delay (s)	37.6	8.3	0	-	9.6	0	-	45.8				
HCM Lane LOS	E	A	A	-	A	A	-	E				
HCM 95th %tile Q(veh)	2.6	0	-	-	0.9	-	-	0.3				

5: Willow St. & Walnut St.
Lanes, Volumes, Timings

2019 Existing PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	8	3	4	22	2	1
Future Volume (vph)	8	3	4	22	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.966				0.961	
Flt Protected				0.992	0.966	
Satd. Flow (prot)	1835	0	0	1885	1764	0
Flt Permitted				0.992	0.966	
Satd. Flow (perm)	1835	0	0	1885	1764	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	100			44	336	
Travel Time (s)	2.3			1.0	7.6	
Peak Hour Factor	0.55	0.55	0.68	0.68	0.42	0.42
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	15	5	6	32	5	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	38	7	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.6%			ICU Level of Service A		
Analysis Period (min)	15					

5: Willow St. & Walnut St.
HCM 2010 TWSC

2019 Existing PM Peak Hour

Intersection

Int Delay, s/veh 1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	8	3	4	22	2	1
Future Vol, veh/h	8	3	4	22	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	55	55	68	68	42	42
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	15	5	6	32	5	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	20	0	61
Stage 1	-	-	-	-	17
Stage 2	-	-	-	-	44
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1609	-	950
Stage 1	-	-	-	-	1011
Stage 2	-	-	-	-	984
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1609	-	946
Mov Cap-2 Maneuver	-	-	-	-	946
Stage 1	-	-	-	-	1011
Stage 2	-	-	-	-	980

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	983	-	-	1609	-
HCM Lane V/C Ratio	0.007	-	-	0.004	-
HCM Control Delay (s)	8.7	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

6: Linden St./Washburn Ave. & Great Plain Ave.

Lanes, Volumes, Timings

2019 Existing PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	477	49	202	691	2	12	0	77	4	3	7
Future Volume (vph)	2	477	49	202	691	2	12	0	77	4	3	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.987						0.883				0.936	
Flt Protected					0.989		0.993				0.986	
Satd. Flow (prot)	0	1859	0	0	1875	0	0	1666	0	0	1754	0
Flt Permitted					0.989		0.993				0.986	
Satd. Flow (perm)	0	1859	0	0	1875	0	0	1666	0	0	1754	0
Link Speed (mph)	25				25		30				30	
Link Distance (ft)	418				323		475				414	
Travel Time (s)	11.4				8.8		10.8				9.4	
Peak Hour Factor	0.95	0.95	0.95	0.94	0.94	0.94	0.85	0.85	0.85	0.84	0.84	0.84
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	502	52	215	735	2	14	0	91	5	4	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	556	0	0	952	0	0	105	0	0	17	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		0				0	
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
Sign Control	Free				Free		Stop				Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	91.9%				ICU Level of Service F							
Analysis Period (min)	15											

6: Linden St./Washburn Ave. & Great Plain Ave.
HCM 2010 TWSC

2019 Existing PM Peak Hour

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	477	49	202	691	2	12	0	77	4	3	7
Future Vol, veh/h	2	477	49	202	691	2	12	0	77	4	3	7
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	95	95	95	94	94	94	85	85	85	84	84	84
Heavy Vehicles, %	0	1	0	1	0	0	0	0	0	0	0	0
Mvmt Flow	2	502	52	215	735	2	14	0	91	5	4	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	737	0	0	554	0	0	1704	1699	528	1743	1724	736
Stage 1	-	-	-	-	-	-	532	532	-	1166	1166	-
Stage 2	-	-	-	-	-	-	1172	1167	-	577	558	-
Critical Hdwy	4.1	-	-	4.11	-	-	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	-	-	2.209	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	878	-	-	1021	-	-	73	93	554	69	90	422
Stage 1	-	-	-	-	-	-	535	529	-	238	270	-
Stage 2	-	-	-	-	-	-	237	270	-	506	515	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	878	-	-	1021	-	-	49	60	554	42	58	422
Mov Cap-2 Maneuver	-	-	-	-	-	-	49	60	-	42	58	-
Stage 1	-	-	-	-	-	-	533	527	-	237	174	-
Stage 2	-	-	-	-	-	-	146	174	-	422	513	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.1			32.7			56.7		
HCM LOS							D			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	232	878	-	-	1021	-	-	86				
HCM Lane V/C Ratio	0.451	0.002	-	-	0.21	-	-	0.194				
HCM Control Delay (s)	32.7	9.1	0	-	9.5	0	-	56.7				
HCM Lane LOS	D	A	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	2.2	0	-	-	0.8	-	-	0.7				

9: Site Driveway/Marshall St. & Great Plain Ave.

Lanes, Volumes, Timings

2019 Existing PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	519	0	0	699	11	0	0	0	9	0	2
Future Volume (vph)	1	519	0	0	699	11	0	0	0	9	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.998											0.979
Flt Protected												0.960
Satd. Flow (prot)	0	1881	0	0	1896	0	0	1900	0	0	1786	0
Flt Permitted												0.960
Satd. Flow (perm)	0	1881	0	0	1896	0	0	1900	0	0	1786	0
Link Speed (mph)	35				35				30		30	
Link Distance (ft)	538				418				511		386	
Travel Time (s)	10.5				8.1				11.6		8.8	
Peak Hour Factor	0.94	0.94	0.94	0.95	0.95	0.95	0.92	0.92	0.92	0.58	1.00	0.58
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	552	0	0	736	12	0	0	0	16	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	553	0	0	748	0	0	0	0	0	19	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				0		0	
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
Sign Control	Free				Free				Stop		Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	47.5%				ICU Level of Service A							
Analysis Period (min)	15											

9: Site Driveway/Marshall St. & Great Plain Ave.
HCM 2010 TWSC

2019 Existing PM Peak Hour

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	519	0	0	699	11	0	0	0	9	0	2
Future Vol, veh/h	1	519	0	0	699	11	0	0	0	9	0	2
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	94	94	94	95	95	95	92	92	92	58	100	58
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	552	0	0	736	12	0	0	0	16	0	3

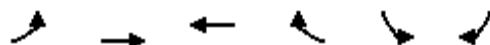
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	747	0	0	552	0	0	1297	1301	552	1296	1296	742
Stage 1	-	-	-	-	-	-	554	554	-	742	742	-
Stage 2	-	-	-	-	-	-	743	747	-	554	554	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical 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	870	-	-	1028	-	-	140	162	537	140	164	419
Stage 1	-	-	-	-	-	-	520	517	-	411	425	-
Stage 2	-	-	-	-	-	-	410	423	-	520	517	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	870	-	-	1028	-	-	139	162	537	140	164	419
Mov Cap-2 Maneuver	-	-	-	-	-	-	139	162	-	140	164	-
Stage 1	-	-	-	-	-	-	519	516	-	410	425	-
Stage 2	-	-	-	-	-	-	407	423	-	519	516	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	30.7
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	870	-	-	1028	-	-	159
HCM Lane V/C Ratio	-	0.001	-	-	-	-	-	0.119
HCM Control Delay (s)	0	9.1	0	-	0	-	-	30.7
HCM Lane LOS	A	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.4

13: Walnut St. & Site Driveway Lanes, Volumes, Timings

2019 Existing PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	11	24	0	0	0
Future Volume (vph)	0	11	24	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	1900	1900	0	1900	0
Flt Permitted						
Satd. Flow (perm)	0	1900	1900	0	1900	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		350	100		511	
Travel Time (s)		8.0	2.3		11.6	
Peak Hour Factor	0.55	0.55	0.60	0.60	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	20	40	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	20	40	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 6.7%				ICU Level of Service A		
Analysis Period (min) 15						

13: Walnut St. & Site Driveway
HCM 2010 TWSC

2019 Existing PM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	11	24	0	0	0
Future Vol, veh/h	0	11	24	0	0	0
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	55	55	60	60	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	20	40	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	40	0	-	0	60	40
Stage 1	-	-	-	-	40	-
Stage 2	-	-	-	-	20	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1583	-	-	-	952	1037
Stage 1	-	-	-	-	988	-
Stage 2	-	-	-	-	1008	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1583	-	-	-	952	1037
Mov Cap-2 Maneuver	-	-	-	-	952	-
Stage 1	-	-	-	-	988	-
Stage 2	-	-	-	-	1008	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1583	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

17: Walnut St. & Walnut Pl.
Lanes, Volumes, Timings

2019 Existing PM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	9	26	0	2	0
Future Volume (vph)	0	9	26	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	1900	1900	0	1805	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1900	1900	0	1805	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		44	322		231	
Travel Time (s)		1.0	7.3		5.3	
Peak Hour Factor	0.45	0.45	0.68	0.68	0.50	0.50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	20	38	0	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	20	38	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	9	26	0	2	0
Future Vol, veh/h	0	9	26	0	2	0
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	45	45	68	68	50	50
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	20	38	0	4	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	58	38
Stage 1	-	-	-	-	38	-
Stage 2	-	-	-	-	20	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	954	1040
Stage 1	0	-	-	0	990	-
Stage 2	0	-	-	0	1008	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	954	1040
Mov Cap-2 Maneuver	-	-	-	-	954	-
Stage 1	-	-	-	-	990	-
Stage 2	-	-	-	-	1008	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.8		
HCM LOS	A					
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	954			
HCM Lane V/C Ratio	-	-	0.004			
HCM Control Delay (s)	-	-	8.8			
HCM Lane LOS	-	-	A			
HCM 95th %tile Q(veh)	-	-	0			

3: Marked Tree Rd./Gage St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 No-Build AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	382	19	62	461	0	129	1	172	1	0	8
Future Volume (vph)	0	382	19	62	461	0	129	1	172	1	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.994						0.923			0.880	
Flt Protected					0.994			0.979			0.994	
Satd. Flow (prot)	0	1853	0	0	1825	0	0	1690	0	0	1345	0
Flt Permitted					0.994			0.979			0.994	
Satd. Flow (perm)	0	1853	0	0	1825	0	0	1690	0	0	1345	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		390			538			441			260	
Travel Time (s)		7.6			10.5			10.0			5.9	
Peak Hour Factor	0.83	0.83	0.83	0.93	0.93	0.93	0.88	0.88	0.88	0.50	0.50	0.50
Heavy Vehicles (%)	0%	2%	0%	7%	3%	0%	1%	0%	2%	100%	0%	14%
Adj. Flow (vph)	0	460	23	67	496	0	147	1	195	2	0	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	483	0	0	563	0	0	343	0	0	18	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 83.4% ICU Level of Service E

Analysis Period (min) 15

3: Marked Tree Rd./Gage St. & Great Plain Ave.
HCM 2010 TWSC

2026 No-Build AM Peak Hour

Intersection												
Int Delay, s/veh	38.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	382	19	62	461	0	129	1	172	1	0	8
Future Vol, veh/h	0	382	19	62	461	0	129	1	172	1	0	8
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	83	83	83	93	93	93	88	88	88	50	50	50
Heavy Vehicles, %	0	2	0	7	3	0	1	0	2	100	0	14
Mvmt Flow	0	460	23	67	496	0	147	1	195	2	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	496	0	0	483	0	0	1109	1101	472	1199	1112	496
Stage 1	-	-	-	-	-	-	472	472	-	629	629	-
Stage 2	-	-	-	-	-	-	637	629	-	570	483	-
Critical Hdwy	4.1	-	-	4.17	-	-	7.11	6.5	6.22	8.1	6.5	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.263	-	-	3.509	4	3.318	4.4	4	3.426
Pot Cap-1 Maneuver	1078	-	-	1054	-	-	188	214	592	105	211	550
Stage 1	-	-	-	-	-	-	574	562	-	339	478	-
Stage 2	-	-	-	-	-	-	467	478	-	369	556	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1078	-	-	1054	-	-	170	195	592	65	192	550
Mov Cap-2 Maneuver	-	-	-	-	-	-	170	195	-	65	192	-
Stage 1	-	-	-	-	-	-	574	562	-	339	436	-
Stage 2	-	-	-	-	-	-	414	436	-	247	556	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	156.5	17.7
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	286	1078	-	-	1054	-	-	301
HCM Lane V/C Ratio	1.2	-	-	-	0.063	-	-	0.06
HCM Control Delay (s)	156.5	0	-	-	8.6	0	-	17.7
HCM Lane LOS	F	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	15.5	0	-	-	0.2	-	-	0.2

5: Willow St. & Walnut St. Lanes, Volumes, Timings

2026 No-Build AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	15	1	1	8	3	4
Future Volume (vph)	15	1	1	8	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.922	
Flt Protected				0.994	0.979	
Satd. Flow (prot)	1889	0	0	1380	1715	0
Flt Permitted				0.994	0.979	
Satd. Flow (perm)	1889	0	0	1380	1715	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	100			44	336	
Travel Time (s)	2.3			1.0	7.6	
Peak Hour Factor	0.75	0.75	0.50	0.50	0.38	0.38
Heavy Vehicles (%)	0%	0%	100%	29%	0%	0%
Adj. Flow (vph)	20	1	2	16	8	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	18	19	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	15	1	1	8	3	4
Future Vol, veh/h	15	1	1	8	3	4
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	75	75	50	50	38	38
Heavy Vehicles, %	0	0	100	29	0	0
Mvmt Flow	20	1	2	16	8	11

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	21
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	5.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.1
Pot Cap-1 Maneuver	-	-	1137
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1137
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1022	-	-	1137	-
HCM Lane V/C Ratio	0.018	-	-	0.002	-
HCM Control Delay (s)	8.6	-	-	8.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

6: Linden St./Washburn Ave. & Great Plain Ave.

Lanes, Volumes, Timings

2026 No-Build AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	529	35	177	514	2	11	1	281	1	2	3
Future Volume (vph)	1	529	35	177	514	2	11	1	281	1	2	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.992						0.870			0.939	
Flt Protected					0.985			0.998			0.991	
Satd. Flow (prot)	0	1850	0	0	1756	0	0	1634	0	0	1768	0
Flt Permitted					0.985			0.998			0.991	
Satd. Flow (perm)	0	1850	0	0	1756	0	0	1634	0	0	1768	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		418			323			475			414	
Travel Time (s)		11.4			8.8			10.8			9.4	
Peak Hour Factor	0.85	0.85	0.85	0.69	0.90	0.90	0.70	0.70	0.70	0.57	0.57	0.57
Heavy Vehicles (%)	0%	2%	0%	8%	6%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	1	622	41	257	571	2	16	1	401	2	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	664	0	0	830	0	0	418	0	0	11	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 96.1% ICU Level of Service F

Analysis Period (min) 15

6: Linden St./Washburn Ave. & Great Plain Ave.
HCM 2010 TWSC

2026 No-Build AM Peak Hour

Intersection												
Int Delay, s/veh	37.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	529	35	177	514	2	11	1	281	1	2	3
Future Vol, veh/h	1	529	35	177	514	2	11	1	281	1	2	3
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	85	85	85	69	90	90	70	70	70	57	57	57
Heavy Vehicles, %	0	2	0	8	6	0	0	0	1	0	0	0
Mvmt Flow	1	622	41	257	571	2	16	1	401	2	4	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	573	0	0	664	0	0	1735	1731	643	1932	1751	572
Stage 1	-	-	-	-	-	-	645	645	-	1085	1085	-
Stage 2	-	-	-	-	-	-	1090	1086	-	847	666	-
Critical Hdwy	4.1	-	-	4.18	-	-	7.1	6.5	6.21	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	-	-	2.272	-	-	3.5	4	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1010	-	-	897	-	-	70	89	475	50	87	523
Stage 1	-	-	-	-	-	-	464	471	-	265	295	-
Stage 2	-	-	-	-	-	-	263	295	-	359	460	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1010	-	-	897	-	-	44	51	475	5	50	523
Mov Cap-2 Maneuver	-	-	-	-	-	-	44	51	-	5	50	-
Stage 1	-	-	-	-	-	-	463	470	-	264	171	-
Stage 2	-	-	-	-	-	-	148	171	-	55	459	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.3			160.2			242.1		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	340	1010	-	-	897	-	-	24				
HCM Lane V/C Ratio	1.231	0.001	-	-	0.286	-	-	0.439				
HCM Control Delay (s)	160.2	8.6	0	-	10.6	0	-	242.1				
HCM Lane LOS	F	A	A	-	B	A	-	F				
HCM 95th %tile Q(veh)	18.4	0	-	-	1.2	-	-	1.3				

9: Site Driveway/Marshall St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 No-Build AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	555	0	0	522	6	0	0	0	10	0	1
Future Volume (vph)	0	555	0	0	522	6	0	0	0	10	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.999											0.986
Flt Protected												0.957
Satd. Flow (prot)	0	1827	0	0	1820	0	0	1900	0	0	1793	0
Flt Permitted												0.957
Satd. Flow (perm)	0	1827	0	0	1820	0	0	1900	0	0	1793	0
Link Speed (mph)	35				35				30		30	
Link Distance (ft)	538				418				511		386	
Travel Time (s)	10.5				8.1				11.6		8.8	
Peak Hour Factor	0.87	0.87	0.87	0.95	0.95	0.95	0.92	0.92	0.92	0.56	0.56	0.56
Heavy Vehicles (%)	0%	4%	0%	0%	4%	33%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	638	0	0	549	6	0	0	0	18	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	638	0	0	555	0	0	0	0	0	20	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				0		0	
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
Sign Control	Free				Free				Stop		Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	39.2%				ICU Level of Service A							
Analysis Period (min)	15											

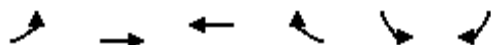
9: Site Driveway/Marshall St. & Great Plain Ave.
HCM 2010 TWSC

2026 No-Build AM Peak Hour

Intersection												
Int Delay, s/veh		0.5										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	555	0	0	522	6	0	0	0	10	0	1
Future Vol, veh/h	0	555	0	0	522	6	0	0	0	10	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	87	87	87	95	95	95	92	92	92	56	56	56
Heavy Vehicles, %	0	4	0	0	4	33	0	0	0	0	0	0
Mvmt Flow	0	638	0	0	549	6	0	0	0	18	0	2
Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	556	0	0	638	0	0	1192	1194	638	1191	1191	553
Stage 1	-	-	-	-	-	-	638	638	-	553	553	-
Stage 2	-	-	-	-	-	-	554	556	-	638	638	-
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	1025	-	-	956	-	-	166	188	480	166	189	537
Stage 1	-	-	-	-	-	-	468	474	-	521	518	-
Stage 2	-	-	-	-	-	-	520	516	-	468	474	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1025	-	-	956	-	-	165	188	480	166	189	537
Mov Cap-2 Maneuver	-	-	-	-	-	-	165	188	-	166	189	-
Stage 1	-	-	-	-	-	-	468	474	-	521	518	-
Stage 2	-	-	-	-	-	-	518	516	-	468	474	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0		0			0			27.9			
HCM LOS						A			D			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	1025	-	-	956	-	-	177				
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.111				
HCM Control Delay (s)	0	0	-	-	0	-	-	27.9				
HCM Lane LOS	A	A	-	-	A	-	-	D				
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.4				

13: Walnut St. & Site Driveway Lanes, Volumes, Timings

2026 No-Build AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	16	11	0	0	0
Future Volume (vph)	0	16	11	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	1900	1583	0	1900	0
Flt Permitted						
Satd. Flow (perm)	0	1900	1583	0	1900	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		350	100		511	
Travel Time (s)		8.0	2.3		11.6	
Peak Hour Factor	0.75	0.75	0.63	0.63	0.92	0.92
Heavy Vehicles (%)	0%	0%	20%	0%	0%	0%
Adj. Flow (vph)	0	21	17	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	17	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 6.7%				ICU Level of Service A		
Analysis Period (min) 15						

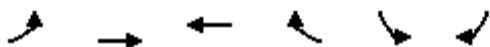
13: Walnut St. & Site Driveway
HCM 2010 TWSC

2026 No-Build AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	16	11	0	0	0
Future Vol, veh/h	0	16	11	0	0	0
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	75	75	63	63	92	92
Heavy Vehicles, %	0	0	20	0	0	0
Mvmt Flow	0	21	17	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	17	0	-	0	38	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	21	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1613	-	-	-	979	1068
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1613	-	-	-	979	1068
Mov Cap-2 Maneuver	-	-	-	-	979	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1007	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1613	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	-

17: Walnut St. & Walnut Pl.
Lanes, Volumes, Timings

2026 No-Build AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↔	
Traffic Volume (vph)	0	19	6	0	32	3
Future Volume (vph)	0	19	6	0	32	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.989	
Flt Protected					0.956	
Satd. Flow (prot)	0	1900	1583	0	1657	0
Flt Permitted					0.956	
Satd. Flow (perm)	0	1900	1583	0	1657	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		44	322		231	
Travel Time (s)		1.0	7.3		5.3	
Peak Hour Factor	0.75	0.75	0.41	0.41	0.49	0.49
Heavy Vehicles (%)	0%	0%	20%	0%	3%	67%
Adj. Flow (vph)	0	25	15	0	65	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	25	15	0	71	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	5.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	19	6	0	32	3
Future Vol, veh/h	0	19	6	0	32	3
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	75	75	41	41	49	49
Heavy Vehicles, %	0	0	20	0	3	67
Mvmt Flow	0	25	15	0	65	6
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	40	15
Stage 1	-	-	-	-	15	-
Stage 2	-	-	-	-	25	-
Critical Hdwy	-	-	-	-	6.43	6.87
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	-	-	3.527	3.903
Pot Cap-1 Maneuver	0	-	-	0	969	904
Stage 1	0	-	-	0	1005	-
Stage 2	0	-	-	0	995	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	969	904
Mov Cap-2 Maneuver	-	-	-	-	969	-
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	995	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9		
HCM LOS	A					
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	963			
HCM Lane V/C Ratio	-	-	0.074			
HCM Control Delay (s)	-	-	9			
HCM Lane LOS	-	-	A			
HCM 95th %tile Q(veh)	-	-	0.2			

3: Marked Tree Rd./Gage St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 No-Build PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	478	83	250	501	1	25	1	78	1	0	2
Future Volume (vph)	2	478	83	250	501	1	25	1	78	1	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.980						0.898			0.916	
Flt Protected					0.984			0.988			0.982	
Satd. Flow (prot)	0	1862	0	0	1857	0	0	1686	0	0	1169	0
Flt Permitted					0.984			0.988			0.982	
Satd. Flow (perm)	0	1862	0	0	1857	0	0	1686	0	0	1169	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		390			538			441			260	
Travel Time (s)		7.6			10.5			10.0			5.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.88	0.88	0.88	0.38	0.38	0.38
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	100%	0%	14%
Adj. Flow (vph)	2	503	87	263	527	1	28	1	89	3	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	592	0	0	791	0	0	118	0	0	8	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 88.0%

ICU Level of Service E

Analysis Period (min) 15

3: Marked Tree Rd./Gage St. & Great Plain Ave.
HCM 2010 TWSC

2026 No-Build PM Peak Hour

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	478	83	250	501	1	25	1	78	1	0	2
Future Vol, veh/h	2	478	83	250	501	1	25	1	78	1	0	2
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	95	95	95	95	95	95	88	88	88	38	38	38
Heavy Vehicles, %	0	0	0	0	1	0	0	0	0	100	0	14
Mvmt Flow	2	503	87	263	527	1	28	1	89	3	0	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	528	0	0	591	0	0	1608	1606	547	1650	1649	528
Stage 1	-	-	-	-	-	-	551	551	-	1054	1054	-
Stage 2	-	-	-	-	-	-	1057	1055	-	596	595	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	8.1	6.5	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	4.4	4	3.426
Pot Cap-1 Maneuver	1049	-	-	995	-	-	85	106	541	46	100	528
Stage 1	-	-	-	-	-	-	522	519	-	182	305	-
Stage 2	-	-	-	-	-	-	275	305	-	356	496	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1049	-	-	995	-	-	60	66	541	27	62	528
Mov Cap-2 Maneuver	-	-	-	-	-	-	60	66	-	27	62	-
Stage 1	-	-	-	-	-	-	520	517	-	181	191	-
Stage 2	-	-	-	-	-	-	170	191	-	296	495	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.3			56.1			60.2		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	181	1049	-	-	995	-	-	73				
HCM Lane V/C Ratio	0.653	0.002	-	-	0.264	-	-	0.108				
HCM Control Delay (s)	56.1	8.4	0	-	9.9	0	-	60.2				
HCM Lane LOS	F	A	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	3.8	0	-	-	1.1	-	-	0.3				

5: Willow St. & Walnut St.
Lanes, Volumes, Timings

2026 No-Build PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	9	3	4	24	2	1
Future Volume (vph)	9	3	4	24	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.968				0.961	
Flt Protected				0.993	0.966	
Satd. Flow (prot)	1839	0	0	1887	1764	0
Flt Permitted				0.993	0.966	
Satd. Flow (perm)	1839	0	0	1887	1764	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	100			44	336	
Travel Time (s)	2.3			1.0	7.6	
Peak Hour Factor	0.55	0.55	0.68	0.68	0.42	0.42
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	16	5	6	35	5	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	41	7	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	9	3	4	24	2	1
Future Vol, veh/h	9	3	4	24	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	55	55	68	68	42	42
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	5	6	35	5	2
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	22	0	66	19
Stage 1	-	-	-	-	19	-
Stage 2	-	-	-	-	47	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1607	-	944	1065
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	981	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1607	-	940	1065
Mov Cap-2 Maneuver	-	-	-	-	940	-
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	977	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1		8.7	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	978	-	-	1607	-	
HCM Lane V/C Ratio	0.007	-	-	0.004	-	
HCM Control Delay (s)	8.7	-	-	7.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

6: Linden St./Washburn Ave. & Great Plain Ave.

Lanes, Volumes, Timings

2026 No-Build PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	511	53	217	741	2	13	0	83	4	3	7
Future Volume (vph)	2	511	53	217	741	2	13	0	83	4	3	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.987						0.883				0.936	
Flt Protected					0.989		0.993				0.986	
Satd. Flow (prot)	0	1859	0	0	1875	0	0	1666	0	0	1754	0
Flt Permitted					0.989		0.993				0.986	
Satd. Flow (perm)	0	1859	0	0	1875	0	0	1666	0	0	1754	0
Link Speed (mph)	25				25		30				30	
Link Distance (ft)	418				323		475				414	
Travel Time (s)	11.4				8.8		10.8				9.4	
Peak Hour Factor	0.95	0.95	0.95	0.94	0.94	0.94	0.85	0.85	0.85	0.84	0.84	0.84
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	538	56	231	788	2	15	0	98	5	4	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	596	0	0	1021	0	0	113	0	0	17	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		0				0	
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
Sign Control	Free				Free		Stop				Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	97.9%											
Analysis Period (min)	15											
	ICU Level of Service F											

6: Linden St./Washburn Ave. & Great Plain Ave.
HCM 2010 TWSC

2026 No-Build PM Peak Hour

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	511	53	217	741	2	13	0	83	4	3	7
Future Vol, veh/h	2	511	53	217	741	2	13	0	83	4	3	7
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	95	95	95	94	94	94	85	85	85	84	84	84
Heavy Vehicles, %	0	1	0	1	0	0	0	0	0	0	0	0
Mvmt Flow	2	538	56	231	788	2	15	0	98	5	4	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	790	0	0	594	0	0	1827	1822	566	1870	1849	789
Stage 1	-	-	-	-	-	-	570	570	-	1251	1251	-
Stage 2	-	-	-	-	-	-	1257	1252	-	619	598	-
Critical Hdwy	4.1	-	-	4.11	-	-	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	-	-	2.209	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	839	-	-	987	-	-	60	78	528	56	75	394
Stage 1	-	-	-	-	-	-	510	509	-	213	246	-
Stage 2	-	-	-	-	-	-	212	246	-	480	494	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	839	-	-	987	-	-	37	45	528	31	44	394
Mov Cap-2 Maneuver	-	-	-	-	-	-	37	45	-	31	44	-
Stage 1	-	-	-	-	-	-	508	507	-	212	143	-
Stage 2	-	-	-	-	-	-	118	143	-	390	492	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.2			48.9			78.5		
HCM LOS							E			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	189	839	-	-	987	-	-	65				
HCM Lane V/C Ratio	0.598	0.003	-	-	0.234	-	-	0.256				
HCM Control Delay (s)	48.9	9.3	0	-	9.8	0	-	78.5				
HCM Lane LOS	E	A	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	3.3	0	-	-	0.9	-	-	0.9				

9: Site Driveway/Marshall St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 No-Build PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	556	0	0	749	12	0	0	0	10	0	2
Future Volume (vph)	1	556	0	0	749	12	0	0	0	10	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.998											0.980
Flt Protected												0.959
Satd. Flow (prot)	0	1881	0	0	1896	0	0	1900	0	0	1786	0
Flt Permitted												0.959
Satd. Flow (perm)	0	1881	0	0	1896	0	0	1900	0	0	1786	0
Link Speed (mph)	35				35				30		30	
Link Distance (ft)	538				418				511		386	
Travel Time (s)	10.5				8.1				11.6		8.8	
Peak Hour Factor	0.94	0.94	0.94	0.95	0.95	0.95	0.92	0.92	0.92	0.58	1.00	0.58
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	591	0	0	788	13	0	0	0	17	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	592	0	0	801	0	0	0	0	0	20	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				0		0	
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
Sign Control	Free				Free				Stop		Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	50.1%				ICU Level of Service A							
Analysis Period (min)	15											

9: Site Driveway/Marshall St. & Great Plain Ave.
HCM 2010 TWSC

2026 No-Build PM Peak Hour

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	556	0	0	749	12	0	0	0	10	0	2
Future Vol, veh/h	1	556	0	0	749	12	0	0	0	10	0	2
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	94	94	94	95	95	95	92	92	92	58	100	58
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	591	0	0	788	13	0	0	0	17	0	3

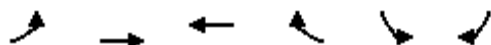
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	801	0	0	591	0	0	1390	1395	591	1389	1389	795
Stage 1	-	-	-	-	-	-	594	594	-	795	795	-
Stage 2	-	-	-	-	-	-	796	801	-	594	594	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical 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	831	-	-	995	-	-	121	143	511	121	144	391
Stage 1	-	-	-	-	-	-	495	496	-	384	402	-
Stage 2	-	-	-	-	-	-	383	400	-	495	496	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	831	-	-	995	-	-	120	143	511	121	144	391
Mov Cap-2 Maneuver	-	-	-	-	-	-	120	143	-	121	144	-
Stage 1	-	-	-	-	-	-	494	495	-	383	402	-
Stage 2	-	-	-	-	-	-	380	400	-	494	495	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	35.9
HCM LOS			A	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	831	-	-	995	-	-	137
HCM Lane V/C Ratio	-	0.001	-	-	-	-	-	0.151
HCM Control Delay (s)	0	9.3	0	-	0	-	-	35.9
HCM Lane LOS	A	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.5

13: Walnut St. & Site Driveway Lanes, Volumes, Timings

2026 No-Build PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	12	26	0	0	0
Future Volume (vph)	0	12	26	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	1900	1900	0	1900	0
Flt Permitted						
Satd. Flow (perm)	0	1900	1900	0	1900	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		350	100		511	
Travel Time (s)		8.0	2.3		11.6	
Peak Hour Factor	0.55	0.55	0.60	0.60	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	22	43	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	22	43	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 6.7%				ICU Level of Service A		
Analysis Period (min) 15						

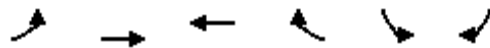
13: Walnut St. & Site Driveway
HCM 2010 TWSC

2026 No-Build PM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	26	0	0	0
Future Vol, veh/h	0	12	26	0	0	0
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	55	55	60	60	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	22	43	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	43	0	-	0	65	43
Stage 1	-	-	-	-	43	-
Stage 2	-	-	-	-	22	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1579	-	-	-	946	1033
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	1006	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1579	-	-	-	946	1033
Mov Cap-2 Maneuver	-	-	-	-	946	-
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	1006	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1579	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	-

17: Walnut St. & Walnut Pl.
Lanes, Volumes, Timings

2026 No-Build PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↔	
Traffic Volume (vph)	0	10	28	0	2	0
Future Volume (vph)	0	10	28	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t						
Flt Protected					0.950	
Satd. Flow (prot)	0	1900	1900	0	1805	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1900	1900	0	1805	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		44	322		231	
Travel Time (s)		1.0	7.3		5.3	
Peak Hour Factor	0.45	0.45	0.68	0.68	0.50	0.50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	22	41	0	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	22	41	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 13.3% ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	10	28	0	2	0
Future Vol, veh/h	0	10	28	0	2	0
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	45	45	68	68	50	50
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	22	41	0	4	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	63	41
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	22	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	948	1036
Stage 1	0	-	-	0	987	-
Stage 2	0	-	-	0	1006	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	948	1036
Mov Cap-2 Maneuver	-	-	-	-	948	-
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	1006	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.8		
HCM LOS	A					
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	948			
HCM Lane V/C Ratio	-	-	0.004			
HCM Control Delay (s)	-	-	8.8			
HCM Lane LOS	-	-	A			
HCM 95th %tile Q(veh)	-	-	0			

3: Marked Tree Rd./Gage St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	382	19	62	462	0	129	1	172	1	0	8
Future Volume (vph)	0	382	19	62	462	0	129	1	172	1	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.994						0.923			0.880	
Flt Protected					0.994			0.979			0.994	
Satd. Flow (prot)	0	1853	0	0	1825	0	0	1690	0	0	1345	0
Flt Permitted					0.994			0.979			0.994	
Satd. Flow (perm)	0	1853	0	0	1825	0	0	1690	0	0	1345	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		390			538			441			260	
Travel Time (s)		7.6			10.5			10.0			5.9	
Peak Hour Factor	0.83	0.83	0.83	0.93	0.93	0.93	0.88	0.88	0.88	0.50	0.50	0.50
Heavy Vehicles (%)	0%	2%	0%	7%	3%	0%	1%	0%	2%	100%	0%	14%
Adj. Flow (vph)	0	460	23	67	497	0	147	1	195	2	0	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	483	0	0	564	0	0	343	0	0	18	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 83.4% ICU Level of Service E

Analysis Period (min) 15

3: Marked Tree Rd./Gage St. & Great Plain Ave.
HCM 2010 TWSC

2026 Build AM Peak Hour

Intersection												
Int Delay, s/veh	39.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	382	19	62	462	0	129	1	172	1	0	8
Future Vol, veh/h	0	382	19	62	462	0	129	1	172	1	0	8
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	83	83	83	93	93	93	88	88	88	50	50	50
Heavy Vehicles, %	0	2	0	7	3	0	1	0	2	100	0	14
Mvmt Flow	0	460	23	67	497	0	147	1	195	2	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	497	0	0	483	0	0	1110	1102	472	1200	1113	497
Stage 1	-	-	-	-	-	-	472	472	-	630	630	-
Stage 2	-	-	-	-	-	-	638	630	-	570	483	-
Critical Hdwy	4.1	-	-	4.17	-	-	7.11	6.5	6.22	8.1	6.5	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.263	-	-	3.509	4	3.318	4.4	4	3.426
Pot Cap-1 Maneuver	1077	-	-	1054	-	-	187	213	592	105	210	550
Stage 1	-	-	-	-	-	-	574	562	-	339	478	-
Stage 2	-	-	-	-	-	-	467	478	-	369	556	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1077	-	-	1054	-	-	169	194	592	65	192	550
Mov Cap-2 Maneuver	-	-	-	-	-	-	169	194	-	65	192	-
Stage 1	-	-	-	-	-	-	574	562	-	339	436	-
Stage 2	-	-	-	-	-	-	414	436	-	247	556	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	158.2	17.7
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	285	1077	-	-	1054	-	-	301
HCM Lane V/C Ratio	1.204	-	-	-	0.063	-	-	0.06
HCM Control Delay (s)	158.2	0	-	-	8.6	0	-	17.7
HCM Lane LOS	F	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	15.5	0	-	-	0.2	-	-	0.2

5: Willow St. & Walnut St.
Lanes, Volumes, Timings

2026 Build AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↗	
Traffic Volume (vph)	15	1	1	8	3	4
Future Volume (vph)	15	1	1	8	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.922	
Flt Protected				0.994	0.979	
Satd. Flow (prot)	1889	0	0	1380	1715	0
Flt Permitted				0.994	0.979	
Satd. Flow (perm)	1889	0	0	1380	1715	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	100			44	336	
Travel Time (s)	2.3			1.0	7.6	
Peak Hour Factor	0.75	0.75	0.50	0.50	0.38	0.38
Heavy Vehicles (%)	0%	0%	100%	29%	0%	0%
Adj. Flow (vph)	20	1	2	16	8	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	18	19	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	15	1	1	8	3	4
Future Vol, veh/h	15	1	1	8	3	4
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	75	75	50	50	38	38
Heavy Vehicles, %	0	0	100	29	0	0
Mvmt Flow	20	1	2	16	8	11
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	21	0	41	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	20	-
Critical Hdwy	-	-	5.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3.1	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1137	-	975	1062
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	1008	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1137	-	973	1062
Mov Cap-2 Maneuver	-	-	-	-	973	-
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	1006	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.9		8.6	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1022	-	-	1137	-	
HCM Lane V/C Ratio	0.018	-	-	0.002	-	
HCM Control Delay (s)	8.6	-	-	8.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

6: Linden St./Washburn Ave. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	534	35	177	516	2	11	1	281	1	2	3
Future Volume (vph)	1	534	35	177	516	2	11	1	281	1	2	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.992						0.870			0.939	
Flt Protected					0.985			0.998			0.991	
Satd. Flow (prot)	0	1850	0	0	1756	0	0	1634	0	0	1768	0
Flt Permitted					0.985			0.998			0.991	
Satd. Flow (perm)	0	1850	0	0	1756	0	0	1634	0	0	1768	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		418			323			475			414	
Travel Time (s)		11.4			8.8			10.8			9.4	
Peak Hour Factor	0.85	0.85	0.85	0.69	0.90	0.90	0.70	0.70	0.70	0.57	0.57	0.57
Heavy Vehicles (%)	0%	2%	0%	8%	6%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	1	628	41	257	573	2	16	1	401	2	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	670	0	0	832	0	0	418	0	0	11	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 96.5% ICU Level of Service F

Analysis Period (min) 15

6: Linden St./Washburn Ave. & Great Plain Ave.
HCM 2010 TWSC

2026 Build AM Peak Hour

Intersection												
Int Delay, s/veh	38.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	534	35	177	516	2	11	1	281	1	2	3
Future Vol, veh/h	1	534	35	177	516	2	11	1	281	1	2	3
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	85	85	85	69	90	90	70	70	70	57	57	57
Heavy Vehicles, %	0	2	0	8	6	0	0	0	1	0	0	0
Mvmt Flow	1	628	41	257	573	2	16	1	401	2	4	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	576	0	0	669	0	0	1743	1740	649	1940	1759	574
Stage 1	-	-	-	-	-	-	651	651	-	1087	1087	-
Stage 2	-	-	-	-	-	-	1092	1089	-	853	672	-
Critical Hdwy	4.1	-	-	4.18	-	-	7.1	6.5	6.21	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	-	-	2.272	-	-	3.5	4	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1007	-	-	893	-	-	69	88	472	50	86	522
Stage 1	-	-	-	-	-	-	461	468	-	264	295	-
Stage 2	-	-	-	-	-	-	262	294	-	357	458	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1007	-	-	893	-	-	43	51	472	5	50	522
Mov Cap-2 Maneuver	-	-	-	-	-	-	43	51	-	5	50	-
Stage 1	-	-	-	-	-	-	460	467	-	263	170	-
Stage 2	-	-	-	-	-	-	147	170	-	53	457	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.3	166.2	242.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	336	1007	-	-	893	-	-	24
HCM Lane V/C Ratio	1.246	0.001	-	-	0.287	-	-	0.439
HCM Control Delay (s)	166.2	8.6	0	-	10.6	0	-	242.1
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	18.7	0	-	-	1.2	-	-	1.3

9: Site Driveway/Marshall St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	555	0	2	522	6	1	0	5	10	0	1
Future Volume (vph)	0	555	0	2	522	6	1	0	5	10	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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					0.999			0.887			0.986	
Flt Protected								0.992			0.957	
Satd. Flow (prot)	0	1827	0	0	1820	0	0	1672	0	0	1793	0
Flt Permitted								0.992			0.957	
Satd. Flow (perm)	0	1827	0	0	1820	0	0	1672	0	0	1793	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		538			418			511			386	
Travel Time (s)		10.5			8.1			11.6			8.8	
Peak Hour Factor	0.87	0.87	0.87	0.95	0.95	0.95	0.92	0.92	0.92	0.56	0.56	0.56
Heavy Vehicles (%)	0%	4%	0%	0%	4%	33%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	638	0	2	549	6	1	0	5	18	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	638	0	0	557	0	0	6	0	0	20	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 39.4% ICU Level of Service A

Analysis Period (min) 15

9: Site Driveway/Marshall St. & Great Plain Ave.
HCM 2010 TWSC

2026 Build AM Peak Hour

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	555	0	2	522	6	1	0	5	10	0	1
Future Vol, veh/h	0	555	0	2	522	6	1	0	5	10	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	87	87	87	95	95	95	92	92	92	56	56	56
Heavy Vehicles, %	0	4	0	0	4	33	0	0	0	0	0	0
Mvmt Flow	0	638	0	2	549	6	1	0	5	18	0	2

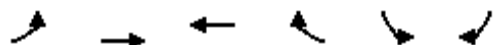
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	556	0	0	638	0	0	1196	1198	638	1198	1195	553
Stage 1	-	-	-	-	-	-	638	638	-	557	557	-
Stage 2	-	-	-	-	-	-	558	560	-	641	638	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical 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	1025	-	-	956	-	-	164	187	480	164	188	537
Stage 1	-	-	-	-	-	-	468	474	-	518	515	-
Stage 2	-	-	-	-	-	-	518	514	-	466	474	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1025	-	-	956	-	-	163	186	480	162	187	537
Mov Cap-2 Maneuver	-	-	-	-	-	-	163	186	-	162	187	-
Stage 1	-	-	-	-	-	-	468	474	-	518	513	-
Stage 2	-	-	-	-	-	-	515	512	-	461	474	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	15.1	28.5
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	363	1025	-	-	956	-	-	173
HCM Lane V/C Ratio	0.018	-	-	-	0.002	-	-	0.114
HCM Control Delay (s)	15.1	0	-	-	8.8	0	-	28.5
HCM Lane LOS	C	A	-	-	A	A	-	D
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4

13: Walnut St. & Site Driveway Lanes, Volumes, Timings

2026 Build AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	16	11	0	0	0
Future Volume (vph)	0	16	11	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	1900	1583	0	1900	0
Flt Permitted						
Satd. Flow (perm)	0	1900	1583	0	1900	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		350	100		511	
Travel Time (s)		8.0	2.3		11.6	
Peak Hour Factor	0.75	0.75	0.63	0.63	0.92	0.92
Heavy Vehicles (%)	0%	0%	20%	0%	0%	0%
Adj. Flow (vph)	0	21	17	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	17	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 6.7%				ICU Level of Service A		
Analysis Period (min) 15						

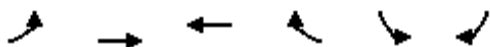
13: Walnut St. & Site Driveway
HCM 2010 TWSC

2026 Build AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	16	11	0	0	0
Future Vol, veh/h	0	16	11	0	0	0
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	75	75	63	63	92	92
Heavy Vehicles, %	0	0	20	0	0	0
Mvmt Flow	0	21	17	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	17	0	-	0	38	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	21	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1613	-	-	-	979	1068
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1613	-	-	-	979	1068
Mov Cap-2 Maneuver	-	-	-	-	979	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1007	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1613	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

17: Walnut St. & Walnut Pl.
Lanes, Volumes, Timings

2026 Build AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↔	
Traffic Volume (vph)	0	19	6	0	32	3
Future Volume (vph)	0	19	6	0	32	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t					0.989	
Fl _t Protected					0.956	
Satd. Flow (prot)	0	1900	1583	0	1657	0
Fl _t Permitted					0.956	
Satd. Flow (perm)	0	1900	1583	0	1657	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		44	322		231	
Travel Time (s)		1.0	7.3		5.3	
Peak Hour Factor	0.75	0.75	0.41	0.41	0.49	0.49
Heavy Vehicles (%)	0%	0%	20%	0%	3%	67%
Adj. Flow (vph)	0	25	15	0	65	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	25	15	0	71	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
Analysis Period (min)	15
	ICU Level of Service A

Intersection

Int Delay, s/veh 5.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	19	6	0	32	3
Future Vol, veh/h	0	19	6	0	32	3
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	75	75	41	41	49	49
Heavy Vehicles, %	0	0	20	0	3	67
Mvmt Flow	0	25	15	0	65	6

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 40 15
Stage 1	-	-	- 15 -
Stage 2	-	-	- 25 -
Critical Hdwy	-	-	- 6.43 6.87
Critical Hdwy Stg 1	-	-	- 5.43 -
Critical Hdwy Stg 2	-	-	- 5.43 -
Follow-up Hdwy	-	-	- 3.527 3.903
Pot Cap-1 Maneuver	0	-	0 969 904
Stage 1	0	-	0 1005 -
Stage 2	0	-	0 995 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 969 904
Mov Cap-2 Maneuver	-	-	- 969 -
Stage 1	-	-	- 1005 -
Stage 2	-	-	- 995 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	963
HCM Lane V/C Ratio	-	-	0.074
HCM Control Delay (s)	-	-	9
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.2

3: Marked Tree Rd./Gage St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	479	83	250	502	1	25	1	79	1	0	2
Future Volume (vph)	2	479	83	250	502	1	25	1	79	1	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.980						0.898			0.916	
Flt Protected					0.984			0.988			0.982	
Satd. Flow (prot)	0	1862	0	0	1857	0	0	1686	0	0	1169	0
Flt Permitted					0.984			0.988			0.982	
Satd. Flow (perm)	0	1862	0	0	1857	0	0	1686	0	0	1169	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		390			538			441			260	
Travel Time (s)		7.6			10.5			10.0			5.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.88	0.88	0.88	0.38	0.38	0.38
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	100%	0%	14%
Adj. Flow (vph)	2	504	87	263	528	1	28	1	90	3	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	593	0	0	792	0	0	119	0	0	8	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 88.2%

ICU Level of Service E

Analysis Period (min) 15

3: Marked Tree Rd./Gage St. & Great Plain Ave.
HCM 2010 TWSC

2026 Build PM Peak Hour

Intersection												
Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	479	83	250	502	1	25	1	79	1	0	2
Future Vol, veh/h	2	479	83	250	502	1	25	1	79	1	0	2
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	95	95	95	95	95	95	88	88	88	38	38	38
Heavy Vehicles, %	0	0	0	0	1	0	0	0	0	100	0	14
Mvmt Flow	2	504	87	263	528	1	28	1	90	3	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	529	0	0	592	0	0	1610	1608	548	1653	1651	529
Stage 1	-	-	-	-	-	-	552	552	-	1055	1055	-
Stage 2	-	-	-	-	-	-	1058	1056	-	598	596	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	8.1	6.5	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	4.4	4	3.426
Pot Cap-1 Maneuver	1048	-	-	994	-	-	85	106	540	46	100	527
Stage 1	-	-	-	-	-	-	522	518	-	182	305	-
Stage 2	-	-	-	-	-	-	274	305	-	355	495	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1048	-	-	994	-	-	59	66	540	27	62	527
Mov Cap-2 Maneuver	-	-	-	-	-	-	59	66	-	27	62	-
Stage 1	-	-	-	-	-	-	520	516	-	181	191	-
Stage 2	-	-	-	-	-	-	170	191	-	294	494	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.3			58.1			60.2		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	179	1048	-	-	994	-	-	73
HCM Lane V/C Ratio	0.667	0.002	-	-	0.265	-	-	0.108
HCM Control Delay (s)	58.1	8.4	0	-	9.9	0	-	60.2
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	3.9	0	-	-	1.1	-	-	0.3

5: Willow St. & Walnut St.
Lanes, Volumes, Timings

2026 Build PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	9	3	4	24	2	1
Future Volume (vph)	9	3	4	24	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.968				0.961	
Flt Protected				0.993	0.966	
Satd. Flow (prot)	1839	0	0	1887	1764	0
Flt Permitted				0.993	0.966	
Satd. Flow (perm)	1839	0	0	1887	1764	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	100			44	336	
Travel Time (s)	2.3			1.0	7.6	
Peak Hour Factor	0.55	0.55	0.68	0.68	0.42	0.42
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	16	5	6	35	5	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	41	7	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.7%			ICU Level of Service A		
Analysis Period (min)	15					

5: Willow St. & Walnut St.
HCM 2010 TWSC

2026 Build PM Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	9	3	4	24	2	1
Future Vol, veh/h	9	3	4	24	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	55	55	68	68	42	42
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	5	6	35	5	2
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	22	0	66	19
Stage 1	-	-	-	-	19	-
Stage 2	-	-	-	-	47	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1607	-	944	1065
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	981	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1607	-	940	1065
Mov Cap-2 Maneuver	-	-	-	-	940	-
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	977	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1		8.7	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	978	-	-	1607	-	
HCM Lane V/C Ratio	0.007	-	-	0.004	-	
HCM Control Delay (s)	8.7	-	-	7.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

6: Linden St./Washburn Ave. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	514	53	217	747	2	13	0	83	4	3	7
Future Volume (vph)	2	514	53	217	747	2	13	0	83	4	3	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.987						0.883			0.936	
Flt Protected					0.989			0.993			0.986	
Satd. Flow (prot)	0	1859	0	0	1875	0	0	1666	0	0	1754	0
Flt Permitted					0.989			0.993			0.986	
Satd. Flow (perm)	0	1859	0	0	1875	0	0	1666	0	0	1754	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		418			323			475			414	
Travel Time (s)		11.4			8.8			10.8			9.4	
Peak Hour Factor	0.95	0.95	0.95	0.94	0.94	0.94	0.85	0.85	0.85	0.84	0.84	0.84
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	541	56	231	795	2	15	0	98	5	4	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	599	0	0	1028	0	0	113	0	0	17	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	98.3%				ICU Level of Service F							
Analysis Period (min)	15											

6: Linden St./Washburn Ave. & Great Plain Ave.
HCM 2010 TWSC

2026 Build PM Peak Hour

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	514	53	217	747	2	13	0	83	4	3	7
Future Vol, veh/h	2	514	53	217	747	2	13	0	83	4	3	7
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	95	95	95	94	94	94	85	85	85	84	84	84
Heavy Vehicles, %	0	1	0	1	0	0	0	0	0	0	0	0
Mvmt Flow	2	541	56	231	795	2	15	0	98	5	4	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	797	0	0	597	0	0	1836	1832	569	1879	1858	796
Stage 1	-	-	-	-	-	-	573	573	-	1257	1257	-
Stage 2	-	-	-	-	-	-	1263	1259	-	622	601	-
Critical Hdwy	4.1	-	-	4.11	-	-	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	-	-	2.209	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	834	-	-	985	-	-	59	77	525	55	74	390
Stage 1	-	-	-	-	-	-	508	507	-	212	245	-
Stage 2	-	-	-	-	-	-	210	244	-	478	493	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	834	-	-	985	-	-	36	44	525	30	43	390
Mov Cap-2 Maneuver	-	-	-	-	-	-	36	44	-	30	43	-
Stage 1	-	-	-	-	-	-	506	505	-	211	142	-
Stage 2	-	-	-	-	-	-	116	141	-	388	491	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.2			51			81.6		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	185	834	-	-	985	-	-	63				
HCM Lane V/C Ratio	0.61	0.003	-	-	0.234	-	-	0.265				
HCM Control Delay (s)	51	9.3	0	-	9.8	0	-	81.6				
HCM Lane LOS	F	A	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	3.4	0	-	-	0.9	-	-	0.9				

9: Site Driveway/Marshall St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	556	2	6	749	12	1	0	3	10	0	2
Future Volume (vph)	1	556	2	6	749	12	1	0	3	10	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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					0.998			0.899			0.980	
Flt Protected								0.988			0.959	
Satd. Flow (prot)	0	1881	0	0	1896	0	0	1688	0	0	1786	0
Flt Permitted								0.988			0.959	
Satd. Flow (perm)	0	1881	0	0	1896	0	0	1688	0	0	1786	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		538			418			511			386	
Travel Time (s)		10.5			8.1			11.6			8.8	
Peak Hour Factor	0.94	0.94	0.94	0.95	0.95	0.95	0.92	0.92	0.92	0.58	1.00	0.58
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	591	2	6	788	13	1	0	3	17	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	594	0	0	807	0	0	4	0	0	20	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	54.7%											
Analysis Period (min)	15											
	ICU Level of Service A											

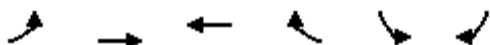
9: Site Driveway/Marshall St. & Great Plain Ave.
HCM 2010 TWSC

2026 Build PM Peak Hour

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	556	2	6	749	12	1	0	3	10	0	2
Future Vol, veh/h	1	556	2	6	749	12	1	0	3	10	0	2
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	94	94	94	95	95	95	92	92	92	58	100	58
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	591	2	6	788	13	1	0	3	17	0	3
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	801	0	0	594	0	0	1404	1409	593	1403	1403	795
Stage 1	-	-	-	-	-	-	595	595	-	807	807	-
Stage 2	-	-	-	-	-	-	809	814	-	596	596	-
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	831	-	-	992	-	-	118	140	509	118	141	391
Stage 1	-	-	-	-	-	-	494	496	-	378	397	-
Stage 2	-	-	-	-	-	-	377	394	-	494	495	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	831	-	-	992	-	-	116	138	509	116	139	391
Mov Cap-2 Maneuver	-	-	-	-	-	-	116	138	-	116	139	-
Stage 1	-	-	-	-	-	-	493	495	-	377	393	-
Stage 2	-	-	-	-	-	-	370	390	-	490	494	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			18.3			37.6		
HCM LOS							C			E		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	276	831	-	-	992	-	-	131				
HCM Lane V/C Ratio	0.016	0.001	-	-	0.006	-	-	0.158				
HCM Control Delay (s)	18.3	9.3	0	-	8.7	0	-	37.6				
HCM Lane LOS	C	A	A	-	A	A	-	E				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.5				

13: Walnut St. & Site Driveway Lanes, Volumes, Timings

2026 Build PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	12	26	0	0	0
Future Volume (vph)	0	12	26	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t						
Flt Protected						
Satd. Flow (prot)	0	1900	1900	0	1900	0
Flt Permitted						
Satd. Flow (perm)	0	1900	1900	0	1900	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		350	100		511	
Travel Time (s)		8.0	2.3		11.6	
Peak Hour Factor	0.55	0.55	0.60	0.60	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	22	43	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	22	43	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

13: Walnut St. & Site Driveway
HCM 2010 TWSC

2026 Build PM Peak Hour

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	26	0	0	0
Future Vol, veh/h	0	12	26	0	0	0
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	55	55	60	60	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	22	43	0	0	0

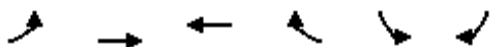
Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	43	0	65
Stage 1	-	-	43
Stage 2	-	-	22
Critical Hdwy	4.1	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	2.2	-	3.5
Pot Cap-1 Maneuver	1579	-	946
Stage 1	-	-	985
Stage 2	-	-	1006
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1579	-	946
Mov Cap-2 Maneuver	-	-	946
Stage 1	-	-	985
Stage 2	-	-	1006

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1579	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

17: Walnut St. & Walnut Pl.
Lanes, Volumes, Timings

2026 Build PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↔	
Traffic Volume (vph)	0	10	28	0	2	0
Future Volume (vph)	0	10	28	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t						
Flt Protected					0.950	
Satd. Flow (prot)	0	1900	1900	0	1805	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1900	1900	0	1805	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		44	322		231	
Travel Time (s)		1.0	7.3		5.3	
Peak Hour Factor	0.45	0.45	0.68	0.68	0.50	0.50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	22	41	0	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	22	41	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	0	10	28	0	2	0
Future Vol, veh/h	0	10	28	0	2	0
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	45	45	68	68	50	50
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	22	41	0	4	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	63	41
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	22	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	948	1036
Stage 1	0	-	-	0	987	-
Stage 2	0	-	-	0	1006	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	948	1036
Mov Cap-2 Maneuver	-	-	-	-	948	-
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	1006	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.8		
HCM LOS	A					
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	948			
HCM Lane V/C Ratio	-	-	0.004			
HCM Control Delay (s)	-	-	8.8			
HCM Lane LOS	-	-	A			
HCM 95th %tile Q(veh)	-	-	0			

3: Marked Tree Rd./Gage St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build AM Peak Hour with Modified Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	382	19	62	462	0	129	1	172	1	0	8
Future Volume (vph)	0	382	19	62	462	0	129	1	172	1	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.994						0.923			0.880	
Flt Protected					0.994			0.979			0.994	
Satd. Flow (prot)	0	1853	0	0	1825	0	0	1690	0	0	1345	0
Flt Permitted					0.994			0.979			0.994	
Satd. Flow (perm)	0	1853	0	0	1825	0	0	1690	0	0	1345	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		390			538			441			260	
Travel Time (s)		7.6			10.5			10.0			5.9	
Peak Hour Factor	0.83	0.83	0.83	0.93	0.93	0.93	0.88	0.88	0.88	0.50	0.50	0.50
Heavy Vehicles (%)	0%	2%	0%	7%	3%	0%	1%	0%	2%	100%	0%	14%
Adj. Flow (vph)	0	460	23	67	497	0	147	1	195	2	0	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	483	0	0	564	0	0	343	0	0	18	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 83.4%

ICU Level of Service E

Analysis Period (min) 15

3: Marked Tree Rd./Gage St. & Great Plain Ave.
HCM 2010 TWSC

2026 Build AM Peak Hour with Modified Access

Intersection												
Int Delay, s/veh	39.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	382	19	62	462	0	129	1	172	1	0	8
Future Vol, veh/h	0	382	19	62	462	0	129	1	172	1	0	8
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	83	83	83	93	93	93	88	88	88	50	50	50
Heavy Vehicles, %	0	2	0	7	3	0	1	0	2	100	0	14
Mvmt Flow	0	460	23	67	497	0	147	1	195	2	0	16
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	497	0	0	483	0	0	1110	1102	472	1200	1113	497
Stage 1	-	-	-	-	-	-	472	472	-	630	630	-
Stage 2	-	-	-	-	-	-	638	630	-	570	483	-
Critical Hdwy	4.1	-	-	4.17	-	-	7.11	6.5	6.22	8.1	6.5	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.263	-	-	3.509	4	3.318	4.4	4	3.426
Pot Cap-1 Maneuver	1077	-	-	1054	-	-	187	213	592	105	210	550
Stage 1	-	-	-	-	-	-	574	562	-	339	478	-
Stage 2	-	-	-	-	-	-	467	478	-	369	556	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1077	-	-	1054	-	-	169	194	592	65	192	550
Mov Cap-2 Maneuver	-	-	-	-	-	-	169	194	-	65	192	-
Stage 1	-	-	-	-	-	-	574	562	-	339	436	-
Stage 2	-	-	-	-	-	-	414	436	-	247	556	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1			158.2			17.7		
HCM LOS							F			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	285	1077	-	-	1054	-	-	301				
HCM Lane V/C Ratio	1.204	-	-	-	0.063	-	-	0.06				
HCM Control Delay (s)	158.2	0	-	-	8.6	0	-	17.7				
HCM Lane LOS	F	A	-	-	A	A	-	C				
HCM 95th %tile Q(veh)	15.5	0	-	-	0.2	-	-	0.2				

5: Willow St. & Walnut St.
Lanes, Volumes, Timings

2026 Build AM Peak Hour with Modified Access

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↗	↘
Traffic Volume (vph)	15	1	1	10	3	4
Future Volume (vph)	15	1	1	10	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.922	
Flt Protected				0.995	0.979	
Satd. Flow (prot)	1889	0	0	1396	1715	0
Flt Permitted				0.995	0.979	
Satd. Flow (perm)	1889	0	0	1396	1715	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	100			44	336	
Travel Time (s)	2.3			1.0	7.6	
Peak Hour Factor	0.75	0.75	0.50	0.50	0.38	0.38
Heavy Vehicles (%)	0%	0%	100%	29%	0%	0%
Adj. Flow (vph)	20	1	2	20	8	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	22	19	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

5: Willow St. & Walnut St.
HCM 2010 TWSC

2026 Build AM Peak Hour with Modified Access

Intersection						
Int Delay, s/veh	2.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	15	1	1	10	3	4
Future Vol, veh/h	15	1	1	10	3	4
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	75	75	50	50	38	38
Heavy Vehicles, %	0	0	100	29	0	0
Mvmt Flow	20	1	2	20	8	11
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	21	0	45	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	-	-	5.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	3.1	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1137	-	970	1062
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	1004	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1137	-	968	1062
Mov Cap-2 Maneuver	-	-	-	-	968	-
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	1002	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.7		8.6	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1020	-	-	1137	-	
HCM Lane V/C Ratio	0.018	-	-	0.002	-	
HCM Control Delay (s)	8.6	-	-	8.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

6: Linden St./Washburn Ave. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build AM Peak Hour with Modified Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	534	35	179	514	2	11	1	281	1	2	3
Future Volume (vph)	1	534	35	179	514	2	11	1	281	1	2	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.992						0.870			0.939	
Flt Protected					0.985			0.998			0.991	
Satd. Flow (prot)	0	1850	0	0	1755	0	0	1634	0	0	1768	0
Flt Permitted					0.985			0.998			0.991	
Satd. Flow (perm)	0	1850	0	0	1755	0	0	1634	0	0	1768	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		418			323			475			414	
Travel Time (s)		11.4			8.8			10.8			9.4	
Peak Hour Factor	0.85	0.85	0.85	0.69	0.90	0.90	0.70	0.70	0.70	0.57	0.57	0.57
Heavy Vehicles (%)	0%	2%	0%	8%	6%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	1	628	41	259	571	2	16	1	401	2	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	670	0	0	832	0	0	418	0	0	11	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 96.5% ICU Level of Service F

Analysis Period (min) 15

6: Linden St./Washburn Ave. & Great Plain Ave.
HCM 2010 TWSC

2026 Build AM Peak Hour with Modified Access

Intersection												
Int Delay, s/veh	38.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	534	35	179	514	2	11	1	281	1	2	3
Future Vol, veh/h	1	534	35	179	514	2	11	1	281	1	2	3
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	85	85	85	69	90	90	70	70	70	57	57	57
Heavy Vehicles, %	0	2	0	8	6	0	0	0	1	0	0	0
Mvmt Flow	1	628	41	259	571	2	16	1	401	2	4	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	573	0	0	669	0	0	1746	1743	649	1944	1763	572
Stage 1	-	-	-	-	-	-	651	651	-	1091	1091	-
Stage 2	-	-	-	-	-	-	1095	1092	-	853	672	-
Critical Hdwy	4.1	-	-	4.18	-	-	7.1	6.5	6.21	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	-	-	2.272	-	-	3.5	4	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1010	-	-	893	-	-	68	88	472	50	85	523
Stage 1	-	-	-	-	-	-	461	468	-	263	293	-
Stage 2	-	-	-	-	-	-	261	293	-	357	458	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1010	-	-	893	-	-	43	50	472	5	49	523
Mov Cap-2 Maneuver	-	-	-	-	-	-	43	50	-	5	49	-
Stage 1	-	-	-	-	-	-	460	467	-	262	168	-
Stage 2	-	-	-	-	-	-	145	168	-	53	457	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.3			166.2			242.1		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	336	1010	-	-	893	-	-	24				
HCM Lane V/C Ratio	1.246	0.001	-	-	0.291	-	-	0.439				
HCM Control Delay (s)	166.2	8.6	0	-	10.7	0	-	242.1				
HCM Lane LOS	F	A	A	-	B	A	-	F				
HCM 95th %tile Q(veh)	18.7	0	-	-	1.2	-	-	1.3				

9: Site Driveway/Marshall St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build AM Peak Hour with Modified Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	555	0	0	522	6	1	0	5	10	0	1
Future Volume (vph)	0	555	0	0	522	6	1	0	5	10	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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					0.999			0.887			0.986	
Flt Protected								0.992			0.957	
Satd. Flow (prot)	0	1827	0	0	1820	0	0	1672	0	0	1793	0
Flt Permitted								0.992			0.957	
Satd. Flow (perm)	0	1827	0	0	1820	0	0	1672	0	0	1793	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		538			418			511			386	
Travel Time (s)		10.5			8.1			11.6			8.8	
Peak Hour Factor	0.87	0.87	0.87	0.95	0.95	0.95	0.92	0.92	0.92	0.56	0.56	0.56
Heavy Vehicles (%)	0%	4%	0%	0%	4%	33%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	638	0	0	549	6	1	0	5	18	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	638	0	0	555	0	0	6	0	0	20	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	39.2%											
Analysis Period (min)	15											
	ICU Level of Service A											

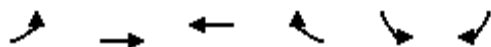
9: Site Driveway/Marshall St. & Great Plain Ave.
HCM 2010 TWSC

2026 Build AM Peak Hour with Modified Access

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	555	0	0	522	6	1	0	5	10	0	1
Future Vol, veh/h	0	555	0	0	522	6	1	0	5	10	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	87	87	87	95	95	95	92	92	92	56	56	56
Heavy Vehicles, %	0	4	0	0	4	33	0	0	0	0	0	0
Mvmt Flow	0	638	0	0	549	6	1	0	5	18	0	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	556	0	0	638	0	0	1192	1194	638	1194	1191	553
Stage 1	-	-	-	-	-	-	638	638	-	553	553	-
Stage 2	-	-	-	-	-	-	554	556	-	641	638	-
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	1025	-	-	956	-	-	166	188	480	165	189	537
Stage 1	-	-	-	-	-	-	468	474	-	521	518	-
Stage 2	-	-	-	-	-	-	520	516	-	466	474	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1025	-	-	956	-	-	165	188	480	163	189	537
Mov Cap-2 Maneuver	-	-	-	-	-	-	165	188	-	163	189	-
Stage 1	-	-	-	-	-	-	468	474	-	521	518	-
Stage 2	-	-	-	-	-	-	518	516	-	461	474	-
Approach	EB		WB				NB			SB		
HCM Control Delay, s	0		0				15.1			28.3		
HCM LOS							C			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	364	1025	-	-	956	-	-	174				
HCM Lane V/C Ratio	0.018	-	-	-	-	-	-	0.113				
HCM Control Delay (s)	15.1	0	-	-	0	-	-	28.3				
HCM Lane LOS	C	A	-	-	A	-	-	D				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4				

13: Walnut St. & Site Driveway Lanes, Volumes, Timings

2026 Build AM Peak Hour with Modified Access



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	16	11	2	0	0
Future Volume (vph)	0	16	11	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.980			
Flt Protected						
Satd. Flow (prot)	0	1900	1591	0	1900	0
Flt Permitted						
Satd. Flow (perm)	0	1900	1591	0	1900	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		350	100		511	
Travel Time (s)		8.0	2.3		11.6	
Peak Hour Factor	0.75	0.75	0.63	0.63	0.92	0.92
Heavy Vehicles (%)	0%	0%	20%	0%	0%	0%
Adj. Flow (vph)	0	21	17	3	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	20	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

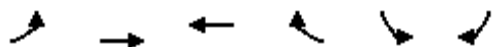
13: Walnut St. & Site Driveway
HCM 2010 TWSC

2026 Build AM Peak Hour with Modified Access

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	16	11	2	0	0
Future Vol, veh/h	0	16	11	2	0	0
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	75	75	63	63	92	92
Heavy Vehicles, %	0	0	20	0	0	0
Mvmt Flow	0	21	17	3	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	21	0	-	0	40	19
Stage 1	-	-	-	-	19	-
Stage 2	-	-	-	-	21	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1608	-	-	-	977	1065
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1608	-	-	-	977	1065
Mov Cap-2 Maneuver	-	-	-	-	977	-
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1007	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1608	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

17: Walnut St. & Walnut Pl.
Lanes, Volumes, Timings

2026 Build AM Peak Hour with Modified Access



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↔	
Traffic Volume (vph)	0	19	8	0	32	3
Future Volume (vph)	0	19	8	0	32	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.989	
Flt Protected					0.956	
Satd. Flow (prot)	0	1900	1583	0	1657	0
Flt Permitted					0.956	
Satd. Flow (perm)	0	1900	1583	0	1657	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		44	322		231	
Travel Time (s)		1.0	7.3		5.3	
Peak Hour Factor	0.75	0.75	0.41	0.41	0.49	0.49
Heavy Vehicles (%)	0%	0%	20%	0%	3%	67%
Adj. Flow (vph)	0	25	20	0	65	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	25	20	0	71	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
Analysis Period (min)	15
	ICU Level of Service A

17: Walnut St. & Walnut Pl.
HCM 2010 TWSC

2026 Build AM Peak Hour with Modified Access

Intersection

Int Delay, s/veh 5.6

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	19	8	0	32	3
Future Vol, veh/h	0	19	8	0	32	3
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	75	75	41	41	49	49
Heavy Vehicles, %	0	0	20	0	3	67
Mvmt Flow	0	25	20	0	65	6

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	-	0	-	0	45	20
Stage 1	-	-	-	-	20	-
Stage 2	-	-	-	-	25	-
Critical Hdwy	-	-	-	-	6.43	6.87
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	-	-	3.527	3.903
Pot Cap-1 Maneuver	0	-	-	0	963	897
Stage 1	0	-	-	0	1000	-
Stage 2	0	-	-	0	995	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	963	897
Mov Cap-2 Maneuver	-	-	-	-	963	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	995	-

Approach EB WB SB

HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt EBT WBT SBLn1

Capacity (veh/h)	-	-	957
HCM Lane V/C Ratio	-	-	0.075
HCM Control Delay (s)	-	-	9.1
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.2

3: Marked Tree Rd./Gage St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build PM Peak Hour with Modified Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	478	84	250	502	1	25	1	78	1	0	2
Future Volume (vph)	2	478	84	250	502	1	25	1	78	1	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.980						0.898			0.916	
Flt Protected					0.984			0.988			0.982	
Satd. Flow (prot)	0	1862	0	0	1857	0	0	1686	0	0	1169	0
Flt Permitted					0.984			0.988			0.982	
Satd. Flow (perm)	0	1862	0	0	1857	0	0	1686	0	0	1169	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		390			538			441			260	
Travel Time (s)		7.6			10.5			10.0			5.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.88	0.88	0.88	0.38	0.38	0.38
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	100%	0%	14%
Adj. Flow (vph)	2	503	88	263	528	1	28	1	89	3	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	593	0	0	792	0	0	118	0	0	8	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 88.1% ICU Level of Service E

Analysis Period (min) 15

3: Marked Tree Rd./Gage St. & Great Plain Ave.
HCM 2010 TWSC

2026 Build PM Peak Hour with Modified Access

Intersection												
Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	478	84	250	502	1	25	1	78	1	0	2
Future Vol, veh/h	2	478	84	250	502	1	25	1	78	1	0	2
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	95	95	95	95	95	95	88	88	88	38	38	38
Heavy Vehicles, %	0	0	0	0	1	0	0	0	0	100	0	14
Mvmt Flow	2	503	88	263	528	1	28	1	89	3	0	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	529	0	0	592	0	0	1610	1608	547	1651	1651	529
Stage 1	-	-	-	-	-	-	552	552	-	1055	1055	-
Stage 2	-	-	-	-	-	-	1058	1056	-	596	596	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	8.1	6.5	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	4.4	4	3.426
Pot Cap-1 Maneuver	1048	-	-	994	-	-	85	106	541	46	100	527
Stage 1	-	-	-	-	-	-	522	518	-	182	305	-
Stage 2	-	-	-	-	-	-	274	305	-	356	495	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1048	-	-	994	-	-	59	66	541	27	62	527
Mov Cap-2 Maneuver	-	-	-	-	-	-	59	66	-	27	62	-
Stage 1	-	-	-	-	-	-	520	516	-	181	191	-
Stage 2	-	-	-	-	-	-	170	191	-	296	494	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.3			58.1			60.2		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	178	1048	-	-	994	-	-	73				
HCM Lane V/C Ratio	0.664	0.002	-	-	0.265	-	-	0.108				
HCM Control Delay (s)	58.1	8.4	0	-	9.9	0	-	60.2				
HCM Lane LOS	F	A	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	3.9	0	-	-	1.1	-	-	0.3				

5: Willow St. & Walnut St.
Lanes, Volumes, Timings

2026 Build PM Peak Hour with Modified Access

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↘↙	
Traffic Volume (vph)	9	3	4	30	2	1
Future Volume (vph)	9	3	4	30	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.968				0.961	
Flt Protected				0.994	0.966	
Satd. Flow (prot)	1839	0	0	1889	1764	0
Flt Permitted				0.994	0.966	
Satd. Flow (perm)	1839	0	0	1889	1764	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	100			44	336	
Travel Time (s)	2.3			1.0	7.6	
Peak Hour Factor	0.55	0.55	0.68	0.68	0.42	0.42
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	16	5	6	44	5	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	50	7	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.9%			ICU Level of Service A		
Analysis Period (min)	15					

5: Willow St. & Walnut St.
HCM 2010 TWSC

2026 Build PM Peak Hour with Modified Access

Intersection

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	9	3	4	30	2	1
Future Vol, veh/h	9	3	4	30	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	55	55	68	68	42	42
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	5	6	44	5	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	22
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1607
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1607
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	970	-	-	1607	-
HCM Lane V/C Ratio	0.007	-	-	0.004	-
HCM Control Delay (s)	8.7	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

6: Linden St./Washburn Ave. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build PM Peak Hour with Modified Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	514	53	223	741	2	13	0	83	4	3	7
Future Volume (vph)	2	514	53	223	741	2	13	0	83	4	3	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.987						0.883			0.936	
Flt Protected					0.989			0.993			0.986	
Satd. Flow (prot)	0	1859	0	0	1875	0	0	1666	0	0	1754	0
Flt Permitted					0.989			0.993			0.986	
Satd. Flow (perm)	0	1859	0	0	1875	0	0	1666	0	0	1754	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		418			323			475			414	
Travel Time (s)		11.4			8.8			10.8			9.4	
Peak Hour Factor	0.95	0.95	0.95	0.94	0.94	0.94	0.85	0.85	0.85	0.84	0.84	0.84
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	541	56	237	788	2	15	0	98	5	4	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	599	0	0	1027	0	0	113	0	0	17	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 98.4%

ICU Level of Service F

Analysis Period (min) 15

6: Linden St./Washburn Ave. & Great Plain Ave.
HCM 2010 TWSC

2026 Build PM Peak Hour with Modified Access

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	514	53	223	741	2	13	0	83	4	3	7
Future Vol, veh/h	2	514	53	223	741	2	13	0	83	4	3	7
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	95	95	95	94	94	94	85	85	85	84	84	84
Heavy Vehicles, %	0	1	0	1	0	0	0	0	0	0	0	0
Mvmt Flow	2	541	56	237	788	2	15	0	98	5	4	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	790	0	0	597	0	0	1843	1838	569	1886	1865	789
Stage 1	-	-	-	-	-	-	573	573	-	1264	1264	-
Stage 2	-	-	-	-	-	-	1270	1265	-	622	601	-
Critical Hdwy	4.1	-	-	4.11	-	-	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	-	-	2.209	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	839	-	-	985	-	-	58	76	525	54	74	394
Stage 1	-	-	-	-	-	-	508	507	-	210	243	-
Stage 2	-	-	-	-	-	-	208	243	-	478	493	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	839	-	-	985	-	-	35	43	525	29	42	394
Mov Cap-2 Maneuver	-	-	-	-	-	-	35	43	-	29	42	-
Stage 1	-	-	-	-	-	-	506	505	-	209	139	-
Stage 2	-	-	-	-	-	-	113	139	-	388	491	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.3			53.2			83.2		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	181	839	-	-	985	-	-	62				
HCM Lane V/C Ratio	0.624	0.003	-	-	0.241	-	-	0.269				
HCM Control Delay (s)	53.2	9.3	0	-	9.8	0	-	83.2				
HCM Lane LOS	F	A	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	3.5	0	-	-	0.9	-	-	0.9				

9: Site Driveway/Marshall St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build PM Peak Hour with Modified Access

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	556	0	0	749	12	1	0	3	10	0	2
Future Volume (vph)	1	556	0	0	749	12	1	0	3	10	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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					0.998			0.899			0.980	
Flt Protected								0.988			0.959	
Satd. Flow (prot)	0	1881	0	0	1896	0	0	1688	0	0	1786	0
Flt Permitted								0.988			0.959	
Satd. Flow (perm)	0	1881	0	0	1896	0	0	1688	0	0	1786	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		538			418			511			386	
Travel Time (s)		10.5			8.1			11.6			8.8	
Peak Hour Factor	0.94	0.94	0.94	0.95	0.95	0.95	0.92	0.92	0.92	0.58	1.00	0.58
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	591	0	0	788	13	1	0	3	17	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	592	0	0	801	0	0	4	0	0	20	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	50.1%				ICU Level of Service A							
Analysis Period (min)	15											

9: Site Driveway/Marshall St. & Great Plain Ave.
HCM 2010 TWSC

2026 Build PM Peak Hour with Modified Access

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	556	0	0	749	12	1	0	3	10	0	2
Future Vol, veh/h	1	556	0	0	749	12	1	0	3	10	0	2
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	94	94	94	95	95	95	92	92	92	58	100	58
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	591	0	0	788	13	1	0	3	17	0	3

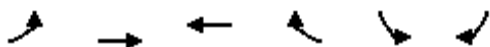
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	801	0	0	591	0	0	1390	1395	591	1390	1389	795
Stage 1	-	-	-	-	-	-	594	594	-	795	795	-
Stage 2	-	-	-	-	-	-	796	801	-	595	594	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical 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	831	-	-	995	-	-	121	143	511	121	144	391
Stage 1	-	-	-	-	-	-	495	496	-	384	402	-
Stage 2	-	-	-	-	-	-	383	400	-	494	496	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	831	-	-	995	-	-	120	143	511	120	144	391
Mov Cap-2 Maneuver	-	-	-	-	-	-	120	143	-	120	144	-
Stage 1	-	-	-	-	-	-	494	495	-	383	402	-
Stage 2	-	-	-	-	-	-	380	400	-	490	495	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	18	36.2
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	282	831	-	-	995	-	-	136
HCM Lane V/C Ratio	0.015	0.001	-	-	-	-	-	0.152
HCM Control Delay (s)	18	9.3	0	-	0	-	-	36.2
HCM Lane LOS	C	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.5

13: Walnut St. & Site Driveway Lanes, Volumes, Timings

2026 Build PM Peak Hour with Modified Access



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	
Traffic Volume (vph)	2	12	26	6	0	0
Future Volume (vph)	2	12	26	6	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.975			
Flt Protected		0.992				
Satd. Flow (prot)	0	1885	1852	0	1900	0
Flt Permitted		0.992				
Satd. Flow (perm)	0	1885	1852	0	1900	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		350	100		511	
Travel Time (s)		8.0	2.3		11.6	
Peak Hour Factor	0.55	0.55	0.60	0.60	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	4	22	43	10	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	26	53	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization 6.7%	ICU Level of Service A
Analysis Period (min) 15	

13: Walnut St. & Site Driveway
HCM 2010 TWSC

2026 Build PM Peak Hour with Modified Access

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	12	26	6	0	0
Future Vol, veh/h	2	12	26	6	0	0
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	55	55	60	60	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	22	43	10	0	0

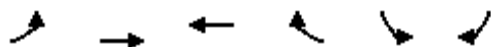
Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	53	0	77
Stage 1	-	-	48
Stage 2	-	-	29
Critical Hdwy	4.1	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	2.2	-	3.5
Pot Cap-1 Maneuver	1566	-	931
Stage 1	-	-	980
Stage 2	-	-	999
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1566	-	928
Mov Cap-2 Maneuver	-	-	928
Stage 1	-	-	980
Stage 2	-	-	996

Approach	EB	WB	SB
HCM Control Delay, s	1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1566	-	-	-	-
HCM Lane V/C Ratio	0.002	-	-	-	-
HCM Control Delay (s)	7.3	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

17: Walnut St. & Walnut Pl.
Lanes, Volumes, Timings

2026 Build PM Peak Hour with Modified Access



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↔	
Traffic Volume (vph)	0	10	34	0	2	0
Future Volume (vph)	0	10	34	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frnt						
Flt Protected					0.950	
Satd. Flow (prot)	0	1900	1900	0	1805	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1900	1900	0	1805	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		44	322		231	
Travel Time (s)		1.0	7.3		5.3	
Peak Hour Factor	0.45	0.45	0.68	0.68	0.50	0.50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	22	50	0	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	22	50	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
Analysis Period (min)	15
	ICU Level of Service A

17: Walnut St. & Walnut Pl.
HCM 2010 TWSC

2026 Build PM Peak Hour with Modified Access

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↕	
Traffic Vol, veh/h	0	10	34	0	2	0
Future Vol, veh/h	0	10	34	0	2	0
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	45	45	68	68	50	50
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	22	50	0	4	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	72	50
Stage 1	-	-	-	-	50	-
Stage 2	-	-	-	-	22	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	937	1024
Stage 1	0	-	-	0	978	-
Stage 2	0	-	-	0	1006	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	937	1024
Mov Cap-2 Maneuver	-	-	-	-	937	-
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	1006	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.9		
HCM LOS	A					
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	937			
HCM Lane V/C Ratio	-	-	0.004			
HCM Control Delay (s)	-	-	8.9			
HCM Lane LOS	-	-	A			
HCM 95th %tile Q(veh)	-	-	0			

3: Marked Tree Rd./Gage St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build AM Peak Hour with Day Care

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	405	19	62	461	0	150	1	178	1	0	8
Future Volume (vph)	0	405	19	62	461	0	150	1	178	1	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.994						0.927			0.880	
Flt Protected					0.994			0.978			0.994	
Satd. Flow (prot)	0	1853	0	0	1825	0	0	1696	0	0	1345	0
Flt Permitted					0.994			0.978			0.994	
Satd. Flow (perm)	0	1853	0	0	1825	0	0	1696	0	0	1345	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		390			538			441			260	
Travel Time (s)		7.6			10.5			10.0			5.9	
Peak Hour Factor	0.83	0.83	0.83	0.93	0.93	0.93	0.88	0.88	0.88	0.50	0.50	0.50
Heavy Vehicles (%)	0%	2%	0%	7%	3%	0%	1%	0%	2%	100%	0%	14%
Adj. Flow (vph)	0	488	23	67	496	0	170	1	202	2	0	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	511	0	0	563	0	0	373	0	0	18	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 86.1% ICU Level of Service E

Analysis Period (min) 15

3: Marked Tree Rd./Gage St. & Great Plain Ave.
HCM 2010 TWSC

2026 Build AM Peak Hour with Day Care

Intersection												
Int Delay, s/veh	61.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	405	19	62	461	0	150	1	178	1	0	8
Future Vol, veh/h	0	405	19	62	461	0	150	1	178	1	0	8
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	83	83	83	93	93	93	88	88	88	50	50	50
Heavy Vehicles, %	0	2	0	7	3	0	1	0	2	100	0	14
Mvmt Flow	0	488	23	67	496	0	170	1	202	2	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	496	0	0	511	0	0	1136	1128	499	1230	1140	496
Stage 1	-	-	-	-	-	-	499	499	-	629	629	-
Stage 2	-	-	-	-	-	-	637	629	-	601	511	-
Critical Hdwy	4.1	-	-	4.17	-	-	7.11	6.5	6.22	8.1	6.5	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.263	-	-	3.509	4	3.318	4.4	4	3.426
Pot Cap-1 Maneuver	1078	-	-	1029	-	-	180	206	572	99	203	550
Stage 1	-	-	-	-	-	-	555	547	-	339	478	-
Stage 2	-	-	-	-	-	-	467	478	-	353	540	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1078	-	-	1029	-	-	~ 163	187	572	59	185	550
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 163	187	-	59	185	-
Stage 1	-	-	-	-	-	-	555	547	-	339	435	-
Stage 2	-	-	-	-	-	-	413	435	-	228	540	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	239.7	18.4
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	266	1078	-	-	1029	-	-	286
HCM Lane V/C Ratio	1.406	-	-	-	0.065	-	-	0.063
HCM Control Delay (s)	239.7	0	-	-	8.7	0	-	18.4
HCM Lane LOS	F	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	20.4	0	-	-	0.2	-	-	0.2

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

5: Willow St. & Walnut St.
Lanes, Volumes, Timings

2026 Build AM Peak Hour with Day Care

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	41	1	1	8	3	4
Future Volume (vph)	41	1	1	8	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.922	
Flt Protected				0.994	0.979	
Satd. Flow (prot)	1896	0	0	1380	1715	0
Flt Permitted				0.994	0.979	
Satd. Flow (perm)	1896	0	0	1380	1715	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	100			44	336	
Travel Time (s)	2.3			1.0	7.6	
Peak Hour Factor	0.75	0.75	0.50	0.50	0.38	0.38
Heavy Vehicles (%)	0%	0%	100%	29%	0%	0%
Adj. Flow (vph)	55	1	2	16	8	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	0	0	18	19	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

5: Willow St. & Walnut St.
HCM 2010 TWSC

2026 Build AM Peak Hour with Day Care

Intersection

Int Delay, s/veh 1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	1	1	8	3	4
Future Vol, veh/h	41	1	1	8	3	4
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	75	75	50	50	38	38
Heavy Vehicles, %	0	0	100	29	0	0
Mvmt Flow	55	1	2	16	8	11

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	56
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	5.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.1
Pot Cap-1 Maneuver	-	-	1099
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1099
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	979	-	-	1099	-
HCM Lane V/C Ratio	0.019	-	-	0.002	-
HCM Control Delay (s)	8.7	-	-	8.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

6: Linden St./Washburn Ave. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build AM Peak Hour with Day Care

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	529	35	177	537	2	17	1	302	1	2	3
Future Volume (vph)	1	529	35	177	537	2	17	1	302	1	2	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.992						0.872			0.939	
Flt Protected					0.985			0.997			0.991	
Satd. Flow (prot)	0	1850	0	0	1756	0	0	1636	0	0	1768	0
Flt Permitted					0.985			0.997			0.991	
Satd. Flow (perm)	0	1850	0	0	1756	0	0	1636	0	0	1768	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		418			323			475			414	
Travel Time (s)		11.4			8.8			10.8			9.4	
Peak Hour Factor	0.85	0.85	0.85	0.69	0.90	0.90	0.70	0.70	0.70	0.57	0.57	0.57
Heavy Vehicles (%)	0%	2%	0%	8%	6%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	1	622	41	257	597	2	24	1	431	2	4	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	664	0	0	856	0	0	456	0	0	11	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 99.6% ICU Level of Service F

Analysis Period (min) 15

6: Linden St./Washburn Ave. & Great Plain Ave.
HCM 2010 TWSC

2026 Build AM Peak Hour with Day Care

Intersection												
Int Delay, s/veh	67.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	529	35	177	537	2	17	1	302	1	2	3
Future Vol, veh/h	1	529	35	177	537	2	17	1	302	1	2	3
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	85	85	85	69	90	90	70	70	70	57	57	57
Heavy Vehicles, %	0	2	0	8	6	0	0	0	1	0	0	0
Mvmt Flow	1	622	41	257	597	2	24	1	431	2	4	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	599	0	0	664	0	0	1760	1757	643	1973	1777	598
Stage 1	-	-	-	-	-	-	645	645	-	1111	1111	-
Stage 2	-	-	-	-	-	-	1115	1112	-	862	666	-
Critical Hdwy	4.1	-	-	4.18	-	-	7.1	6.5	6.21	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	-	-	2.272	-	-	3.5	4	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	988	-	-	897	-	-	67	86	475	47	83	506
Stage 1	-	-	-	-	-	-	464	471	-	256	287	-
Stage 2	-	-	-	-	-	-	255	287	-	353	460	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	988	-	-	897	-	-	42	49	475	3	47	506
Mov Cap-2 Maneuver	-	-	-	-	-	-	42	49	-	3	47	-
Stage 1	-	-	-	-	-	-	463	470	-	255	164	-
Stage 2	-	-	-	-	-	-	141	164	-	32	459	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.2	279.1	\$ 422.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	302	988	-	-	897	-	-	16
HCM Lane V/C Ratio	1.514	0.001	-	-	0.286	-	-	0.658
HCM Control Delay (s)	279.1	8.6	0	-	10.6	0	-	\$ 422.4
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	26	0	-	-	1.2	-	-	1.7

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

9: Site Driveway/Marshall St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build AM Peak Hour with Day Care

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	555	29	29	522	6	0	0	0	10	0	1
Future Volume (vph)	0	555	29	29	522	6	0	0	0	10	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.993			0.999						0.986	
Flt Protected					0.997						0.957	
Satd. Flow (prot)	0	1818	0	0	1818	0	0	1900	0	0	1793	0
Flt Permitted					0.997						0.957	
Satd. Flow (perm)	0	1818	0	0	1818	0	0	1900	0	0	1793	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		538			418			511			386	
Travel Time (s)		10.5			8.1			11.6			8.8	
Peak Hour Factor	0.87	0.87	0.87	0.95	0.95	0.95	0.92	0.92	0.92	0.56	0.56	0.56
Heavy Vehicles (%)	0%	4%	0%	0%	4%	33%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	638	33	31	549	6	0	0	0	18	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	671	0	0	586	0	0	0	0	0	20	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 61.5%

ICU Level of Service B

Analysis Period (min) 15

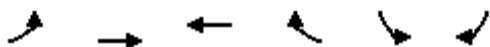
9: Site Driveway/Marshall St. & Great Plain Ave.
HCM 2010 TWSC

2026 Build AM Peak Hour with Day Care

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	555	29	29	522	6	0	0	0	10	0	1
Future Vol, veh/h	0	555	29	29	522	6	0	0	0	10	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	87	87	87	95	95	95	92	92	92	56	56	56
Heavy Vehicles, %	0	4	0	0	4	33	0	0	0	0	0	0
Mvmt Flow	0	638	33	31	549	6	0	0	0	18	0	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	556	0	0	671	0	0	1270	1272	655	1269	1285	553
Stage 1	-	-	-	-	-	-	655	655	-	614	614	-
Stage 2	-	-	-	-	-	-	615	617	-	655	671	-
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	1025	-	-	929	-	-	146	169	470	147	166	537
Stage 1	-	-	-	-	-	-	458	466	-	483	486	-
Stage 2	-	-	-	-	-	-	482	484	-	458	458	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1025	-	-	929	-	-	140	161	470	142	158	537
Mov Cap-2 Maneuver	-	-	-	-	-	-	140	161	-	142	158	-
Stage 1	-	-	-	-	-	-	458	466	-	483	463	-
Stage 2	-	-	-	-	-	-	457	461	-	458	458	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.5			0			32.2		
HCM LOS							A			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	1025	-	-	929	-	-	152				
HCM Lane V/C Ratio	-	-	-	-	0.033	-	-	0.129				
HCM Control Delay (s)	0	0	-	-	9	0	-	32.2				
HCM Lane LOS	A	A	-	-	A	A	-	D				
HCM 95th %tile Q(veh)	-	0	-	-	0.1	-	-	0.4				

13: Walnut St. & Site Driveway Lanes, Volumes, Timings

2026 Build AM Peak Hour with Day Care



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	16	11	0	26	26
Future Volume (vph)	0	16	11	0	26	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.932	
Flt Protected					0.976	
Satd. Flow (prot)	0	1900	1583	0	1728	0
Flt Permitted					0.976	
Satd. Flow (perm)	0	1900	1583	0	1728	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		350	100		511	
Travel Time (s)		8.0	2.3		11.6	
Peak Hour Factor	0.75	0.75	0.63	0.63	0.92	0.92
Heavy Vehicles (%)	0%	0%	20%	0%	0%	0%
Adj. Flow (vph)	0	21	17	0	28	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	17	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
Analysis Period (min)	15
	ICU Level of Service A

13: Walnut St. & Site Driveway
HCM 2010 TWSC

2026 Build AM Peak Hour with Day Care

Intersection

Int Delay, s/veh 5.2

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations						
Traffic Vol, veh/h	0	16	11	0	26	26
Future Vol, veh/h	0	16	11	0	26	26
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	75	75	63	63	92	92
Heavy Vehicles, %	0	0	20	0	0	0
Mvmt Flow	0	21	17	0	28	28

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	17	0	-	0	38	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	21	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1613	-	-	-	979	1068
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1613	-	-	-	979	1068
Mov Cap-2 Maneuver	-	-	-	-	979	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1007	-

Approach EB WB SB

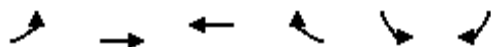
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1613	-	-	-	1022
HCM Lane V/C Ratio	-	-	-	-	0.055
HCM Control Delay (s)	0	-	-	-	8.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

17: Walnut St. & Walnut Pl.
Lanes, Volumes, Timings

2026 Build AM Peak Hour with Day Care



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	
Traffic Volume (vph)	0	45	6	0	32	3
Future Volume (vph)	0	45	6	0	32	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t					0.989	
Fl _t Protected					0.956	
Satd. Flow (prot)	0	1900	1583	0	1657	0
Fl _t Permitted					0.956	
Satd. Flow (perm)	0	1900	1583	0	1657	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		44	322		231	
Travel Time (s)		1.0	7.3		5.3	
Peak Hour Factor	0.75	0.75	0.41	0.41	0.49	0.49
Heavy Vehicles (%)	0%	0%	20%	0%	3%	67%
Adj. Flow (vph)	0	60	15	0	65	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	60	15	0	71	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
Analysis Period (min)	15
	ICU Level of Service A

Intersection

Int Delay, s/veh 4.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	45	6	0	32	3
Future Vol, veh/h	0	45	6	0	32	3
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	75	75	41	41	49	49
Heavy Vehicles, %	0	0	20	0	3	67
Mvmt Flow	0	60	15	0	65	6

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	75 15
Stage 1	-	-	-	-	15 -
Stage 2	-	-	-	-	60 -
Critical Hdwy	-	-	-	-	6.43 6.87
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	-	-	3.527 3.903
Pot Cap-1 Maneuver	0	-	-	0	926 904
Stage 1	0	-	-	0	1005 -
Stage 2	0	-	-	0	960 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	926 904
Mov Cap-2 Maneuver	-	-	-	-	926 -
Stage 1	-	-	-	-	1005 -
Stage 2	-	-	-	-	960 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	924
HCM Lane V/C Ratio	-	-	0.077
HCM Control Delay (s)	-	-	9.2
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.3

3: Marked Tree Rd./Gage St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build PM Peak Hour with Day Care

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	499	83	250	501	1	48	1	83	1	0	2
Future Volume (vph)	2	499	83	250	501	1	48	1	83	1	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.981						0.915			0.916	
Flt Protected					0.984			0.982			0.982	
Satd. Flow (prot)	0	1864	0	0	1857	0	0	1707	0	0	1169	0
Flt Permitted					0.984			0.982			0.982	
Satd. Flow (perm)	0	1864	0	0	1857	0	0	1707	0	0	1169	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		390			538			441			260	
Travel Time (s)		7.6			10.5			10.0			5.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.88	0.88	0.88	0.38	0.38	0.38
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	100%	0%	14%
Adj. Flow (vph)	2	525	87	263	527	1	55	1	94	3	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	614	0	0	791	0	0	150	0	0	8	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 92.3% ICU Level of Service F

Analysis Period (min) 15

3: Marked Tree Rd./Gage St. & Great Plain Ave.
HCM 2010 TWSC

2026 Build PM Peak Hour with Day Care

Intersection												
Int Delay, s/veh	20.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	499	83	250	501	1	48	1	83	1	0	2
Future Vol, veh/h	2	499	83	250	501	1	48	1	83	1	0	2
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	95	95	95	95	95	95	88	88	88	38	38	38
Heavy Vehicles, %	0	0	0	0	1	0	0	0	0	100	0	14
Mvmt Flow	2	525	87	263	527	1	55	1	94	3	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	528	0	0	613	0	0	1630	1628	569	1675	1671	528
Stage 1	-	-	-	-	-	-	573	573	-	1054	1054	-
Stage 2	-	-	-	-	-	-	1057	1055	-	621	617	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	8.1	6.5	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	4.4	4	3.426
Pot Cap-1 Maneuver	1049	-	-	976	-	-	82	103	525	44	97	528
Stage 1	-	-	-	-	-	-	508	507	-	182	305	-
Stage 2	-	-	-	-	-	-	275	305	-	343	484	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1049	-	-	976	-	-	57	63	525	25	60	528
Mov Cap-2 Maneuver	-	-	-	-	-	-	57	63	-	25	60	-
Stage 1	-	-	-	-	-	-	506	505	-	181	188	-
Stage 2	-	-	-	-	-	-	168	188	-	280	483	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.3	192.1	63.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	130	1049	-	-	976	-	-	69
HCM Lane V/C Ratio	1.154	0.002	-	-	0.27	-	-	0.114
HCM Control Delay (s)	192.1	8.4	0	-	10	0	-	63.8
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	8.9	0	-	-	1.1	-	-	0.4

5: Willow St. & Walnut St.
Lanes, Volumes, Timings

2026 Build PM Peak Hour with Day Care

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	39	3	4	24	2	1
Future Volume (vph)	39	3	4	24	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.991				0.961	
Flt Protected				0.993	0.966	
Satd. Flow (prot)	1883	0	0	1887	1764	0
Flt Permitted				0.993	0.966	
Satd. Flow (perm)	1883	0	0	1887	1764	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	100			44	336	
Travel Time (s)	2.3			1.0	7.6	
Peak Hour Factor	0.55	0.55	0.68	0.68	0.42	0.42
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	71	5	6	35	5	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	76	0	0	41	7	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.7%			ICU Level of Service A		
Analysis Period (min)	15					

5: Willow St. & Walnut St.
HCM 2010 TWSC

2026 Build PM Peak Hour with Day Care

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	39	3	4	24	2	1
Future Vol, veh/h	39	3	4	24	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	55	55	68	68	42	42
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	71	5	6	35	5	2
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	76	0	121	74
Stage 1	-	-	-	-	74	-
Stage 2	-	-	-	-	47	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1536	-	879	993
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	981	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1536	-	875	993
Mov Cap-2 Maneuver	-	-	-	-	875	-
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	977	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.1		9	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	911	-	-	1536	-	
HCM Lane V/C Ratio	0.008	-	-	0.004	-	
HCM Control Delay (s)	9	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

6: Linden St./Washburn Ave. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build PM Peak Hour with Day Care

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	511	53	217	762	2	18	0	107	4	3	7
Future Volume (vph)	2	511	53	217	762	2	18	0	107	4	3	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.987						0.884			0.936	
Flt Protected					0.989			0.993			0.986	
Satd. Flow (prot)	0	1859	0	0	1875	0	0	1668	0	0	1754	0
Flt Permitted					0.989			0.993			0.986	
Satd. Flow (perm)	0	1859	0	0	1875	0	0	1668	0	0	1754	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		418			323			475			414	
Travel Time (s)		11.4			8.8			10.8			9.4	
Peak Hour Factor	0.95	0.95	0.95	0.94	0.94	0.94	0.85	0.85	0.85	0.84	0.84	0.84
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	538	56	231	811	2	21	0	126	5	4	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	596	0	0	1044	0	0	147	0	0	17	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	101.0%						ICU Level of Service G					
Analysis Period (min)	15											

6: Linden St./Washburn Ave. & Great Plain Ave.
HCM 2010 TWSC

2026 Build PM Peak Hour with Day Care

Intersection												
Int Delay, s/veh	9.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	511	53	217	762	2	18	0	107	4	3	7
Future Vol, veh/h	2	511	53	217	762	2	18	0	107	4	3	7
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	95	95	95	94	94	94	85	85	85	84	84	84
Heavy Vehicles, %	0	1	0	1	0	0	0	0	0	0	0	0
Mvmt Flow	2	538	56	231	811	2	21	0	126	5	4	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	813	0	0	594	0	0	1849	1844	566	1906	1871	812
Stage 1	-	-	-	-	-	-	570	570	-	1273	1273	-
Stage 2	-	-	-	-	-	-	1279	1274	-	633	598	-
Critical Hdwy	4.1	-	-	4.11	-	-	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	-	-	2.209	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	823	-	-	987	-	-	58	76	528	53	73	382
Stage 1	-	-	-	-	-	-	510	509	-	207	241	-
Stage 2	-	-	-	-	-	-	206	240	-	471	494	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	823	-	-	987	-	-	35	43	528	27	42	382
Mov Cap-2 Maneuver	-	-	-	-	-	-	35	43	-	27	42	-
Stage 1	-	-	-	-	-	-	508	507	-	206	138	-
Stage 2	-	-	-	-	-	-	112	138	-	357	492	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.2			86.2			88.5		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	174	823	-	-	987	-	-	59				
HCM Lane V/C Ratio	0.845	0.003	-	-	0.234	-	-	0.282				
HCM Control Delay (s)	86.2	9.4	0	-	9.8	0	-	88.5				
HCM Lane LOS	F	A	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	5.9	0	-	-	0.9	-	-	1				

9: Site Driveway/Marshall St. & Great Plain Ave.

Lanes, Volumes, Timings

2026 Build PM Peak Hour with Day Care

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	556	26	26	749	12	0	0	0	10	0	2
Future Volume (vph)	1	556	26	26	749	12	0	0	0	10	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.994			0.998						0.980	
Flt Protected					0.998						0.959	
Satd. Flow (prot)	0	1871	0	0	1892	0	0	1900	0	0	1786	0
Flt Permitted					0.998						0.959	
Satd. Flow (perm)	0	1871	0	0	1892	0	0	1900	0	0	1786	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		538			418			511			386	
Travel Time (s)		10.5			8.1			11.6			8.8	
Peak Hour Factor	0.94	0.94	0.94	0.95	0.95	0.95	0.92	0.92	0.92	0.58	1.00	0.58
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	591	28	27	788	13	0	0	0	17	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	620	0	0	828	0	0	0	0	0	20	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			0			0	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 70.2%

ICU Level of Service C

Analysis Period (min) 15

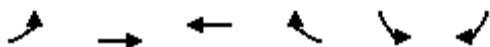
9: Site Driveway/Marshall St. & Great Plain Ave.
HCM 2010 TWSC

2026 Build PM Peak Hour with Day Care

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	556	26	26	749	12	0	0	0	10	0	2
Future Vol, veh/h	1	556	26	26	749	12	0	0	0	10	0	2
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	94	94	94	95	95	95	92	92	92	58	100	58
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	591	28	27	788	13	0	0	0	17	0	3
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	801	0	0	619	0	0	1458	1463	605	1456	1470	795
Stage 1	-	-	-	-	-	-	607	607	-	849	849	-
Stage 2	-	-	-	-	-	-	851	856	-	607	621	-
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	831	-	-	971	-	-	109	130	501	109	129	391
Stage 1	-	-	-	-	-	-	487	489	-	358	380	-
Stage 2	-	-	-	-	-	-	358	377	-	487	482	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	831	-	-	971	-	-	104	123	501	105	122	391
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	123	-	105	122	-
Stage 1	-	-	-	-	-	-	486	488	-	357	361	-
Stage 2	-	-	-	-	-	-	337	358	-	486	481	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.3			0			41.1		
HCM LOS							A			E		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	831	-	-	971	-	-	120				
HCM Lane V/C Ratio	-	0.001	-	-	0.028	-	-	0.172				
HCM Control Delay (s)	0	9.3	0	-	8.8	0	-	41.1				
HCM Lane LOS	A	A	A	-	A	A	-	E				
HCM 95th %tile Q(veh)	-	0	-	-	0.1	-	-	0.6				

13: Walnut St. & Site Driveway Lanes, Volumes, Timings

2026 Build PM Peak Hour with Day Care



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	12	26	0	30	29
Future Volume (vph)	0	12	26	0	30	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.934	
Flt Protected					0.975	
Satd. Flow (prot)	0	1900	1900	0	1730	0
Flt Permitted					0.975	
Satd. Flow (perm)	0	1900	1900	0	1730	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		350	100		511	
Travel Time (s)		8.0	2.3		11.6	
Peak Hour Factor	0.55	0.55	0.60	0.60	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	22	43	0	33	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	22	43	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.4%
Analysis Period (min)	15
	ICU Level of Service A

13: Walnut St. & Site Driveway
HCM 2010 TWSC

2026 Build PM Peak Hour with Day Care

Intersection

Int Delay, s/veh 4.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	26	0	30	29
Future Vol, veh/h	0	12	26	0	30	29
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	55	55	60	60	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	22	43	0	33	32

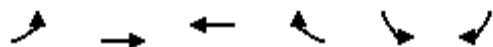
Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	43	0	65
Stage 1	-	-	43
Stage 2	-	-	22
Critical Hdwy	4.1	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	2.2	-	3.5
Pot Cap-1 Maneuver	1579	-	946
Stage 1	-	-	985
Stage 2	-	-	1006
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1579	-	946
Mov Cap-2 Maneuver	-	-	946
Stage 1	-	-	985
Stage 2	-	-	1006

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1579	-	-	-	987
HCM Lane V/C Ratio	-	-	-	-	0.065
HCM Control Delay (s)	0	-	-	-	8.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

17: Walnut St. & Walnut Pl.
Lanes, Volumes, Timings

2026 Build PM Peak Hour with Day Care



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	
Traffic Volume (vph)	0	40	28	0	2	0
Future Volume (vph)	0	40	28	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	1900	1900	0	1805	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1900	1900	0	1805	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		44	322		231	
Travel Time (s)		1.0	7.3		5.3	
Peak Hour Factor	0.45	0.45	0.68	0.68	0.50	0.50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	89	41	0	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	89	41	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 13.3% ICU Level of Service A						
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	40	28	0	2	0
Future Vol, veh/h	0	40	28	0	2	0
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	45	45	68	68	50	50
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	89	41	0	4	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	130	41
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	89	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	869	1036
Stage 1	0	-	-	0	987	-
Stage 2	0	-	-	0	940	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	869	1036
Mov Cap-2 Maneuver	-	-	-	-	869	-
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	940	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.2		
HCM LOS	A					
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	869			
HCM Lane V/C Ratio	-	-	0.005			
HCM Control Delay (s)	-	-	9.2			
HCM Lane LOS	-	-	A			
HCM 95th %tile Q(veh)	-	-	0			

Sight Distance Worksheets

Sight Distance Calculations

Proposed Residential, Needham, MA

Inputs

Posted Speed Limit = 35 mph WB and 35 mph EB

Direction 1 =	Great Plain Ave EB	85% Speed =	35	mph	Grade =	0	t =	2.5 s	a =	11.2 ft/s ²
Direction 2 =	Great Plain Ave WB	85% Speed =	36	mph	Grade =	0	t =	2.5 s	a =	11.2 ft/s ²
							Left: t _g =	7.5 s		
							Right: t _g =	6.5 s		

SSD = Reaction Distance + Braking Distance

Reaction Distance = $1.47 \times V \times t$

Braking Distance = $V^2 / (30 \times ((a/32.2) + G))$

ISD = $1.47 \times V \times t_g$

Where

- t = reaction time (sec)
- t_g = time gap for minor road vehicle to enter the major road
- V = travel speed (mph)
- G = roadway grade
- a = deceleration rate (ft/s²)

Calculations

	Reaction Distance (ft)	Brake Distance (ft)	SSD (ft)
Great Plain Ave EB	128.6	117.4	246
Great Plain Ave WB	132.3	124.2	257

For 35 mph:		
Left Turn ISD =	386	ft
Right Turn ISD =	334	ft
For 36 mph:		
Left Turn ISD =	397	ft
Right Turn ISD =	344	ft