

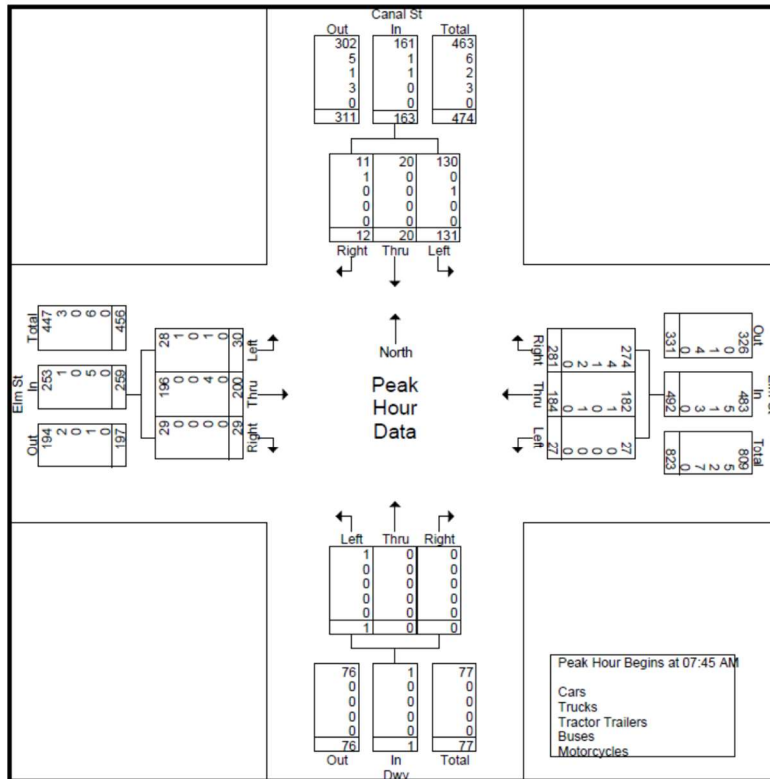
Technical Appendix

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

File Name : 18760001
Site Code : 18760001
Start Date : 2/25/2021
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

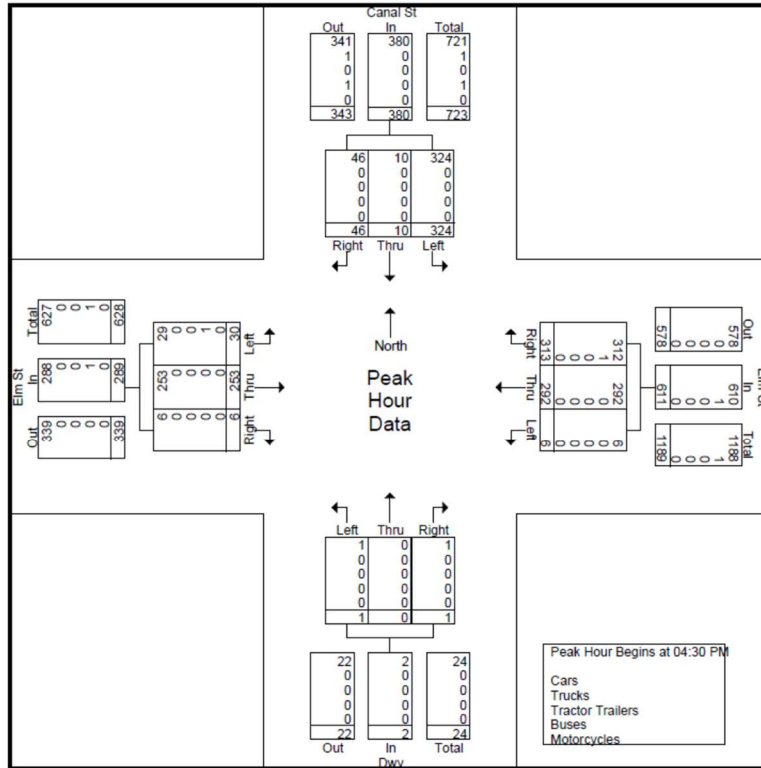
	07:15 AM				07:30 AM				07:00 AM				08:00 AM			
+0 mins.	36	7	1	44	5	35	90	130	0	0	0	0	8	51	8	67
+15 mins.	46	9	1	56	8	51	76	135	0	0	0	0	6	50	9	65
+30 mins.	38	6	6	50	6	31	62	99	1	0	0	1	12	55	10	77
+45 mins.	39	3	2	44	6	51	75	132	1	0	0	1	9	46	14	69
Total Volume	159	25	10	194	25	168	303	496	2	0	0	2	35	202	41	278
% App. Total	82	12.9	5.2		5	33.9	61.1		100	0	0		12.6	72.7	14.7	
PHF	.864	.694	.417	.866	.781	.824	.842	.919	.500	.000	.000	.500	.729	.918	.732	.903
Cars	157	25	10	192	25	167	298	490	2	0	0	2	32	199	41	272
% Cars	98.7	100	100	99	100	99.4	98.3	98.8	100	0	0	100	91.4	98.5	100	97.8
Trucks	0	0	0	0	0	1	2	3	0	0	0	0	1	0	0	1
% Trucks	0	0	0	0	0	0.6	0.7	0.6	0	0	0	0	2.9	0	0	0.4
Tractor Trailers	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0
% Tractor Trailers	0	0	0	0	0	0	0.7	0.4	0	0	0	0	0	0	0	0
Buses	2	0	0	2	0	0	1	1	0	0	0	0	2	3	0	5
% Buses	1.3	0	0	1	0	0	0.3	0.2	0	0	0	0	5.7	1.5	0	1.8
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

File Name : 18760001
Site Code : 18760001
Start Date : 2/25/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

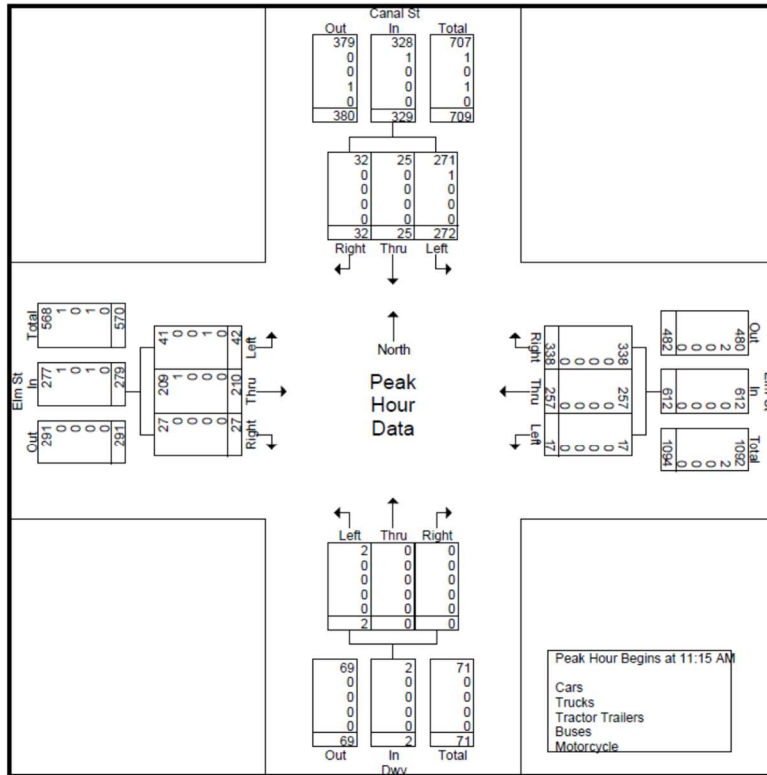
	04:30 PM				04:45 PM				04:00 PM				04:30 PM			
+0 mins.	81	4	10	95	1	87	71	159	0	0	1	1	10	72	1	83
+15 mins.	78	2	20	100	2	68	100	170	0	0	0	0	7	56	1	64
+30 mins.	90	3	11	104	2	60	77	139	0	0	0	0	7	58	2	67
+45 mins.	75	1	5	81	2	77	78	157	0	0	1	1	6	67	2	75
Total Volume	324	10	46	380	7	292	326	625	0	0	2	2	30	253	6	289
% App. Total	85.3	2.6	12.1		1.1	46.7	52.2		0	0	100		10.4	87.5	2.1	
PHF	.900	.625	.575	.913	.875	.839	.815	.919	.000	.000	.500	.500	.750	.878	.750	.870
Cars	324	10	46	380	7	292	325	624	0	0	2	2	29	253	6	288
% Cars	100	100	100	100	100	100	99.7	99.8	0	0	100	100	96.7	100	100	99.7
Trucks	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0.3	0.2	0	0	0	0	0	0	0	0
Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	3.3	0	0	0.3
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Canal Street / Driveway
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain

File Name : 187600S1
Site Code : 18760001
Start Date : 2/27/2021
Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

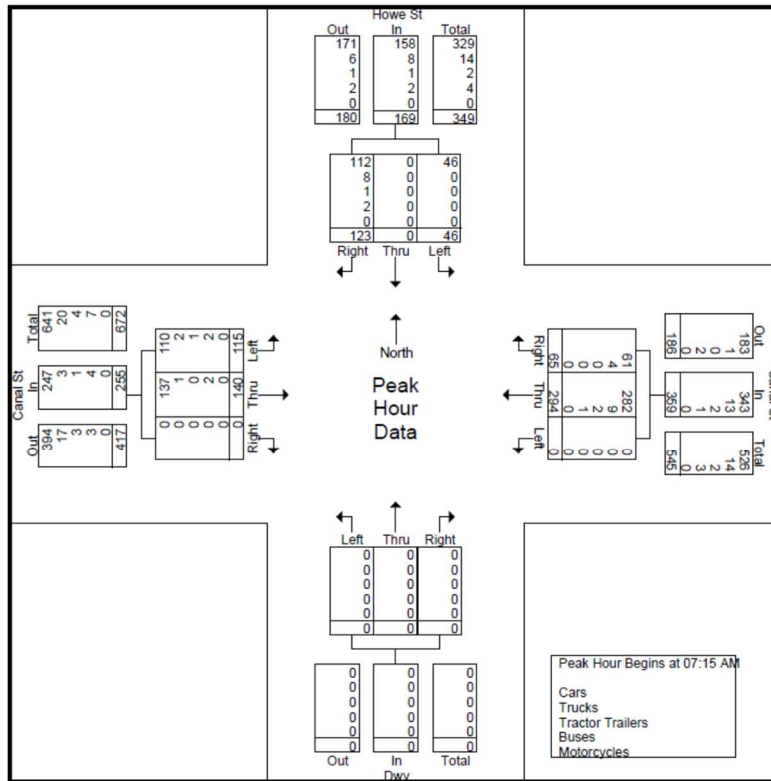
	11:15 AM				11:15 AM				12:00 PM				11:30 AM			
+0 mins.	66	6	7	79	7	68	74	149	2	0	0	2	8	64	7	79
+15 mins.	71	9	9	89	2	56	89	147	0	0	0	0	17	48	7	72
+30 mins.	63	6	7	76	2	62	97	161	0	0	0	0	9	45	4	58
+45 mins.	72	4	9	85	6	71	78	155	1	0	0	1	3	66	3	72
Total Volume	272	25	32	329	17	257	338	612	3	0	0	3	37	223	21	281
% App. Total	82.7	7.6	9.7		2.8	42	55.2		100	0	0		13.2	79.4	7.5	
PHF	.944	.694	.889	.924	.607	.905	.871	.950	.375	.000	.000	.375	.544	.845	.750	.889
Cars	271	25	32	328	17	257	338	612	3	0	0	3	36	222	21	279
% Cars	99.6	100	100	99.7	100	100	100	100	100	0	0	100	97.3	99.6	100	99.3
Trucks	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1
% Trucks	0.4	0	0	0.3	0	0	0	0	0	0	0	0	0	0.4	0	0.4
Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	2.7	0	0	0.4
Motorcycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Motorcycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

File Name : 18760002
Site Code : 18760002
Start Date : 2/25/2021
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

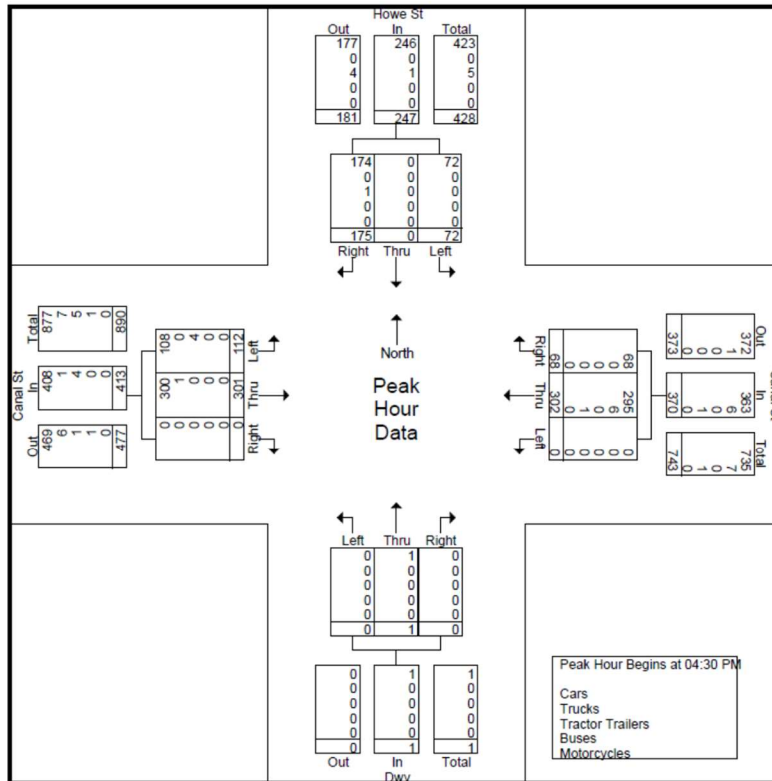
	07:45 AM				07:15 AM				07:00 AM				07:15 AM			
+0 mins.	14	0	41	55	0	79	18	97	0	0	0	0	21	39	0	60
+15 mins.	15	0	36	51	0	89	13	102	0	0	0	0	30	40	0	70
+30 mins.	7	0	36	43	0	76	14	90	0	0	0	0	28	33	0	61
+45 mins.	14	0	38	52	0	50	20	70	0	0	0	0	36	28	0	64
Total Volume	50	0	151	201	0	294	65	359	0	0	0	0	115	140	0	255
% App. Total	24.9	0	75.1		0	81.9	18.1		0	0	0		45.1	54.9	0	
PHF	.833	.000	.921	.914	.000	.826	.813	.880	.000	.000	.000	.000	.799	.875	.000	.911
Cars	49	0	142	191	0	282	61	343	0	0	0	0	110	137	0	247
% Cars	98	0	94	95	0	95.9	93.8	95.5	0	0	0	0	95.7	97.9	0	96.9
Trucks	0	0	6	6	0	9	4	13	0	0	0	0	2	1	0	3
% Trucks	0	0	4	3	0	3.1	6.2	3.6	0	0	0	0	1.7	0.7	0	1.2
Tractor Trailers	1	0	1	2	0	2	0	2	0	0	0	0	1	0	0	1
% Tractor Trailers	2	0	0.7	1	0	0.7	0	0.6	0	0	0	0	0.9	0	0	0.4
Buses	0	0	2	2	0	1	0	1	0	0	0	0	2	2	0	4
% Buses	0	0	1.3	1	0	0.3	0	0.3	0	0	0	0	1.7	1.4	0	1.6
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

File Name : 18760002
Site Code : 18760002
Start Date : 2/25/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

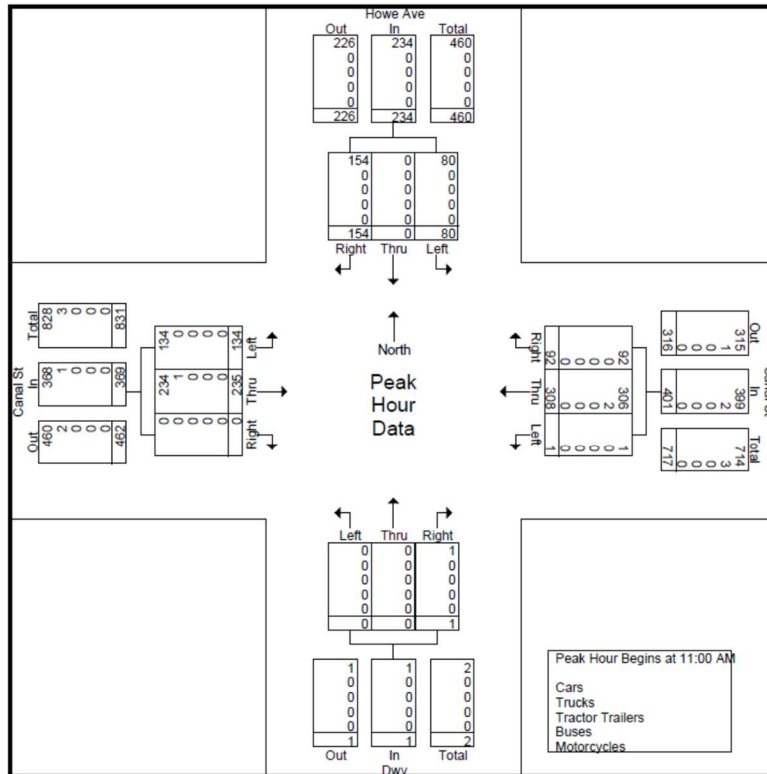
	04:00 PM				05:00 PM				04:00 PM				04:30 PM			
+0 mins.	22	0	50	72	0	96	20	116	0	0	0	0	23	79	0	102
+15 mins.	14	0	35	49	0	75	13	88	0	0	0	0	24	67	0	91
+30 mins.	17	0	51	68	0	70	17	87	0	0	0	0	31	89	0	120
+45 mins.	25	0	35	60	0	71	16	87	0	1	0	1	34	66	0	100
Total Volume	78	0	171	249	0	312	66	378	0	1	0	1	112	301	0	413
% App. Total	31.3	0	68.7		0	82.5	17.5		0	100	0		27.1	72.9	0	
PHF	.780	.000	.838	.865	.000	.813	.825	.815	.000	.250	.000	.250	.824	.846	.000	.860
Cars	77	0	168	245	0	306	66	372	0	1	0	1	108	300	0	408
% Cars	98.7	0	98.2	98.4	0	98.1	100	98.4	0	100	0	100	96.4	99.7	0	98.8
Trucks	1	0	2	3	0	4	0	4	0	0	0	0	0	1	0	1
% Trucks	1.3	0	1.2	1.2	0	1.3	0	1.1	0	0	0	0	0	0.3	0	0.2
Tractor Trailers	0	0	1	1	0	0	0	0	0	0	0	0	4	0	0	4
% Tractor Trailers	0	0	0.6	0.4	0	0	0	0	0	0	0	0	3.6	0	0	1
Buses	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0.6	0	0.5	0	0	0	0	0	0	0	0
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Howe Avenue / Driveway
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain

File Name : 187600S2
Site Code : 18760002
Start Date : 2/27/2021
Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

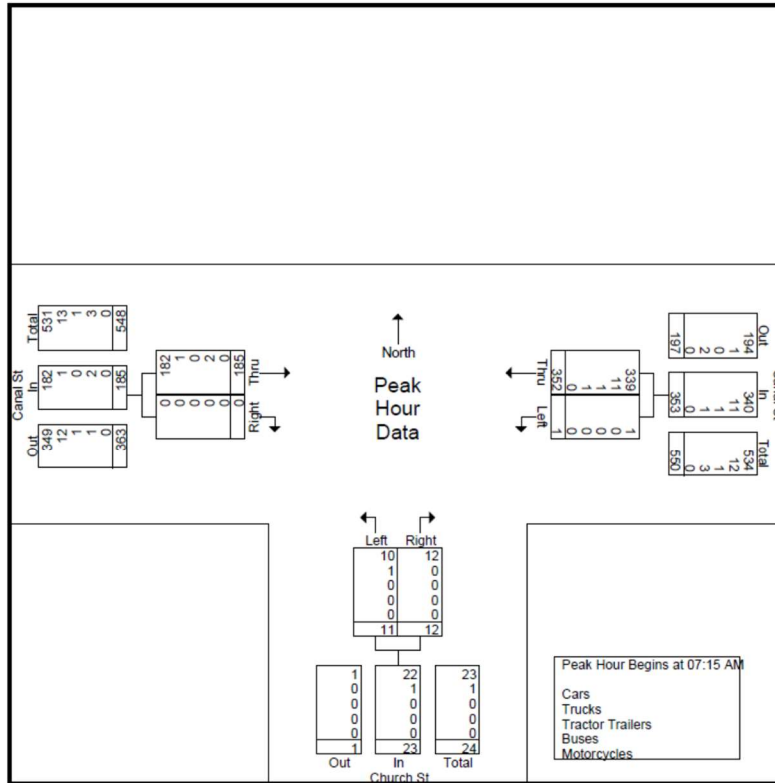
	11:15 AM				11:30 AM				11:30 AM				11:00 AM			
+0 mins.	19	0	40	59	0	85	22	107	0	0	0	0	28	56	0	84
+15 mins.	19	0	33	52	1	87	24	112	0	0	1	1	31	58	0	89
+30 mins.	24	0	45	69	0	65	26	91	0	0	0	0	37	71	0	108
+45 mins.	23	0	42	65	0	78	22	100	0	0	2	2	38	50	0	88
Total Volume	85	0	160	245	1	315	94	410	0	0	3	3	134	235	0	369
% App. Total	34.7	0	65.3		0.2	76.8	22.9		0	0	100		36.3	63.7	0	
PHF	.885	.000	.889	.888	.250	.905	.904	.915	.000	.000	.375	.375	.882	.827	.000	.854
Cars	85	0	160	245	1	313	94	408	0	0	3	3	134	234	0	368
% Cars	100	0	100	100	100	99.4	100	99.5	0	0	100	100	100	99.6	0	99.7
Trucks	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
% Trucks	0	0	0	0	0	0.3	0	0.2	0	0	0	0	0	0.4	0	0.3
Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0.3	0	0.2	0	0	0	0	0	0	0	0
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

File Name : 18760003
Site Code : 18760003
Start Date : 2/25/2021
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

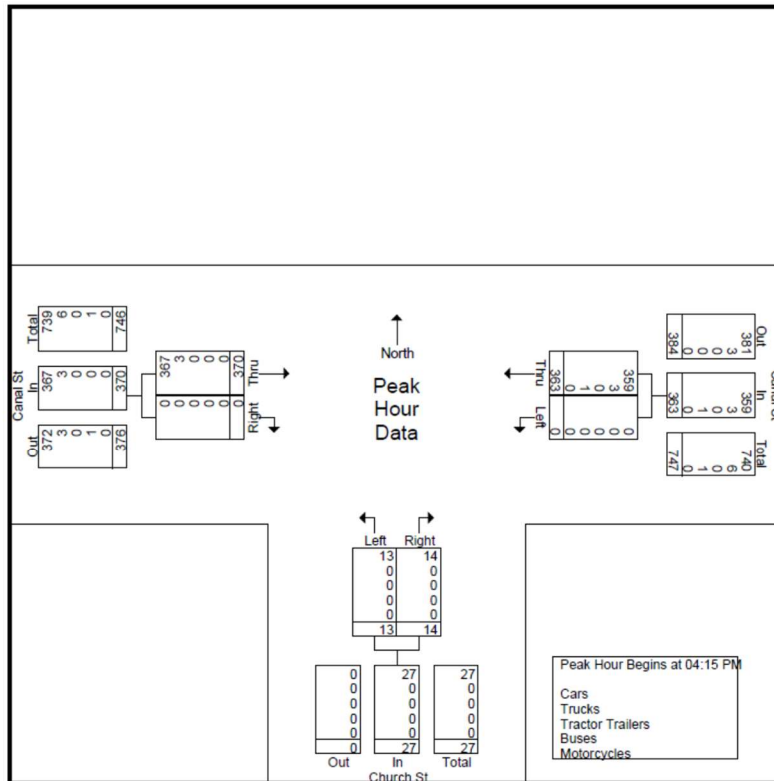
	07:15 AM			07:00 AM			07:15 AM		
+0 mins.	0	98	98	1	4	5	43	0	43
+15 mins.	0	99	99	2	2	4	53	0	53
+30 mins.	0	87	87	3	5	8	46	0	46
+45 mins.	1	68	69	3	3	6	43	0	43
Total Volume	1	352	353	9	14	23	185	0	185
% App. Total	0.3	99.7		39.1	60.9		100	0	
PHF	.250	.889	.891	.750	.700	.719	.873	.000	.873
Cars	1	339	340	9	14	23	182	0	182
% Cars	100	96.3	96.3	100	100	100	98.4	0	98.4
Trucks	0	11	11	0	0	0	1	0	1
% Trucks	0	3.1	3.1	0	0	0	0.5	0	0.5
Tractor Trailers	0	1	1	0	0	0	0	0	0
% Tractor Trailers	0	0.3	0.3	0	0	0	0	0	0
Buses	0	1	1	0	0	0	2	0	2
% Buses	0	0.3	0.3	0	0	0	1.1	0	1.1
Motorcycles	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

File Name : 18760003
Site Code : 18760003
Start Date : 2/25/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

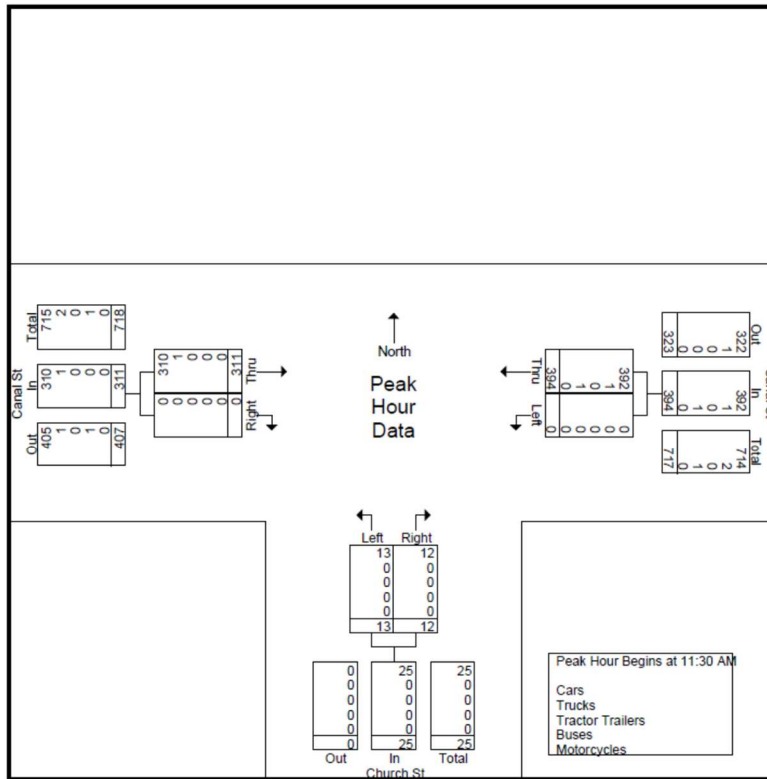
	04:45 PM		04:00 PM			04:30 PM			
+0 mins.	0	86	86	3	4	7	95	0	95
+15 mins.	0	109	109	4	4	8	92	0	92
+30 mins.	0	84	84	3	4	7	106	0	106
+45 mins.	0	87	87	3	4	7	79	0	79
Total Volume	0	366	366	13	16	29	372	0	372
% App. Total	0	100		44.8	55.2		100	0	
PHF	.000	.839	.839	.813	1.000	.906	.877	.000	.877
Cars	0	362	362	13	16	29	370	0	370
% Cars	0	98.9	98.9	100	100	100	99.5	0	99.5
Trucks	0	3	3	0	0	0	2	0	2
% Trucks	0	0.8	0.8	0	0	0	0.5	0	0.5
Tractor Trailers	0	0	0	0	0	0	0	0	0
% Tractor Trailers	0	0	0	0	0	0	0	0	0
Buses	0	1	1	0	0	0	0	0	0
% Buses	0	0.3	0.3	0	0	0	0	0	0
Motorcycles	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Church Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain

File Name : 187600S3
Site Code : 18760003
Start Date : 2/27/2021
Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

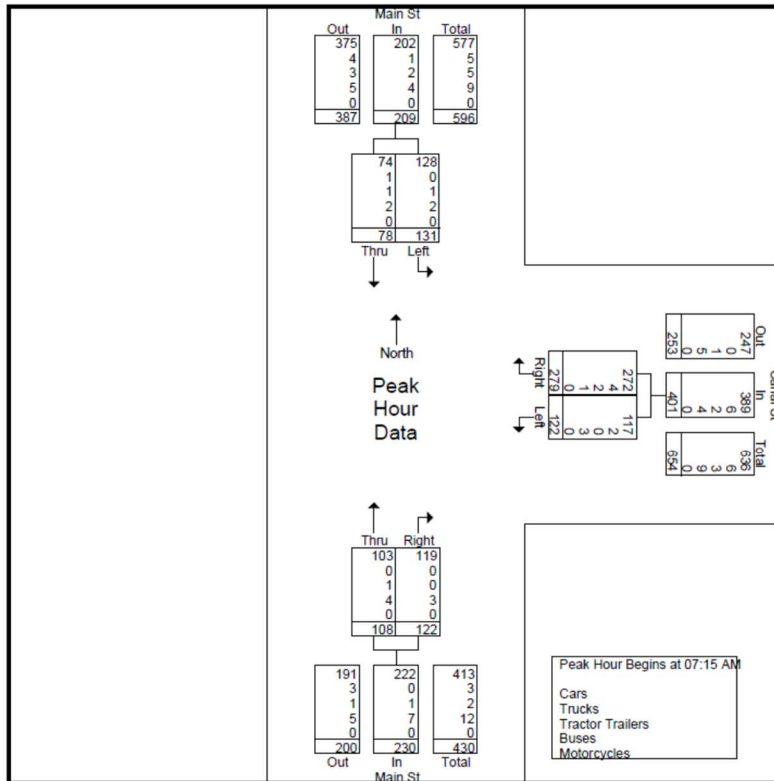
	11:30 AM		11:45 AM			11:15 AM			
+0 mins.	0	99	99	2	5	7	77	0	77
+15 mins.	0	110	110	3	2	5	87	0	87
+30 mins.	0	89	89	4	5	9	70	0	70
+45 mins.	0	96	96	4	2	6	86	0	86
Total Volume	0	394	394	13	14	27	320	0	320
% App. Total	0	100		48.1	51.9		100	0	
PHF	.000	.895	.895	.813	.700	.750	.920	.000	.920
Cars	0	392	392	13	14	27	319	0	319
% Cars	0	99.5	99.5	100	100	100	99.7	0	99.7
Trucks	0	1	1	0	0	0	1	0	1
% Trucks	0	0.3	0.3	0	0	0	0.3	0	0.3
Tractor Trailers	0	0	0	0	0	0	0	0	0
% Tractor Trailers	0	0	0	0	0	0	0	0	0
Buses	0	1	1	0	0	0	0	0	0
% Buses	0	0.3	0.3	0	0	0	0	0	0
Motorcycles	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

File Name : 18760004
Site Code : 18760004
Start Date : 2/25/2021
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

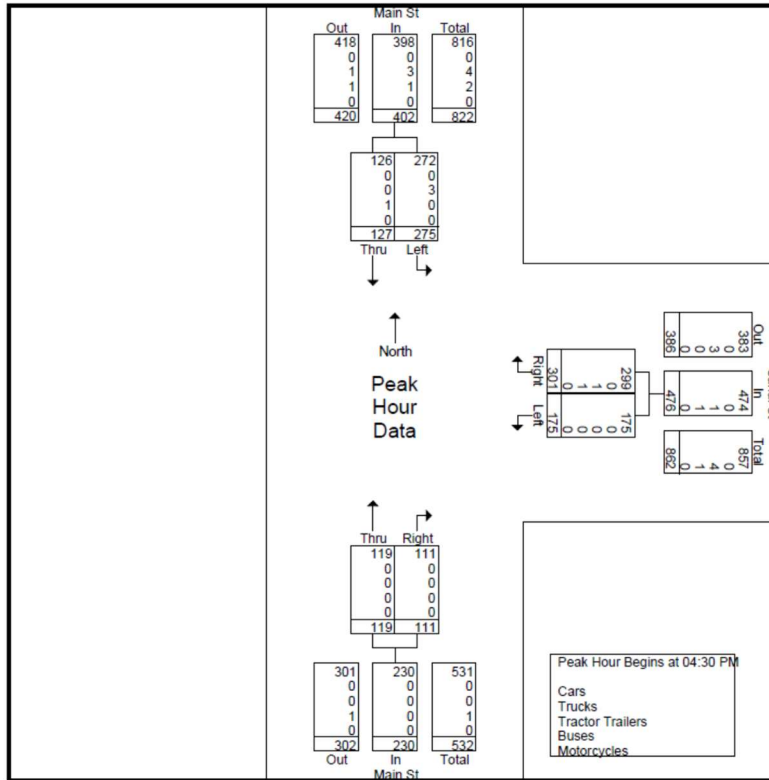
	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	37	17	54	20	74	94	33	24	57
+15 mins.	37	25	62	23	90	113	41	34	75
+30 mins.	30	16	46	46	68	114	17	23	40
+45 mins.	27	20	47	33	47	80	17	41	58
Total Volume	131	78	209	122	279	401	108	122	230
% App. Total	62.7	37.3		30.4	69.6		47	53	
PHF	885	780	843	663	775	879	659	744	767
Cars	128	74	202	117	272	389	103	119	222
% Cars	97.7	94.9	96.7	95.9	97.5	97	95.4	97.5	96.5
Trucks	0	1	1	2	4	6	0	0	0
% Trucks	0	1.3	0.5	1.6	1.4	1.5	0	0	0
Tractor Trailers	1	1	2	0	2	2	1	0	1
% Tractor Trailers	0.8	1.3	1	0	0.7	0.5	0.9	0	0.4
Buses	2	2	4	3	1	4	4	3	7
% Buses	1.5	2.6	1.9	2.5	0.4	1	3.7	2.5	3
Motorcycles	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Clear

File Name : 18760004
Site Code : 18760004
Start Date : 2/25/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

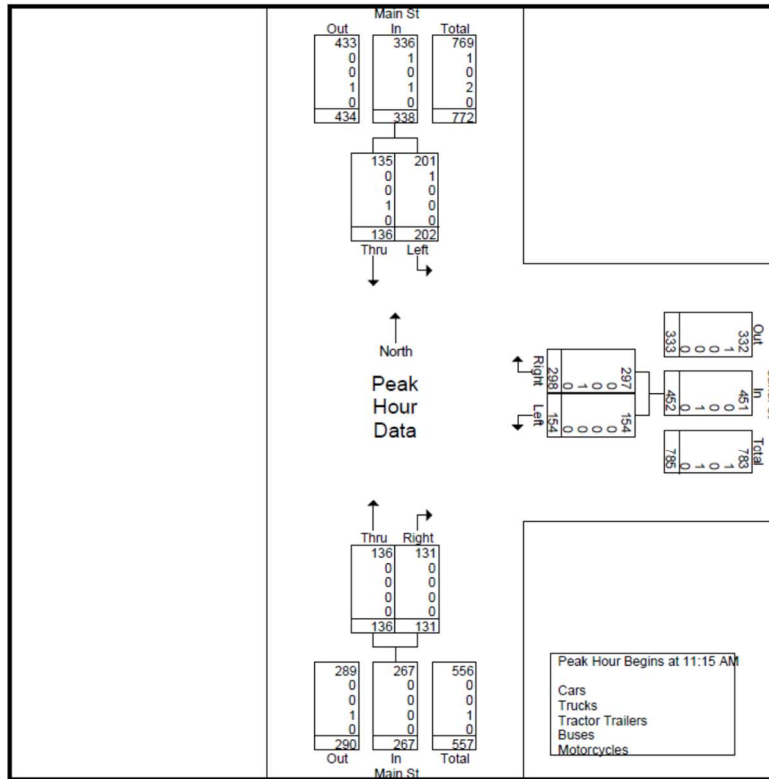
	04:00 PM			05:00 PM			04:15 PM		
+0 mins.	76	40	116	36	105	141	33	23	56
+15 mins.	65	33	98	49	73	122	26	27	53
+30 mins.	69	40	109	52	66	118	30	26	56
+45 mins.	71	29	100	35	66	101	42	32	74
Total Volume	281	142	423	172	310	482	131	108	239
% App. Total	66.4	33.6		35.7	64.3		54.8	45.2	
PHF	924	888	912	827	738	855	780	844	807
Cars	276	141	417	172	307	479	131	107	238
% Cars	98.2	99.3	98.6	100	99	99.4	100	99.1	99.6
Trucks	0	0	0	0	0	0	0	1	1
% Trucks	0	0	0	0	0	0	0	0.9	0.4
Tractor Trailers	5	0	5	0	1	1	0	0	0
% Tractor Trailers	1.8	0	1.2	0	0.3	0.2	0	0	0
Buses	0	1	1	0	2	2	0	0	0
% Buses	0	0.7	0.2	0	0.6	0.4	0	0	0
Motorcycles	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street : Canal Street
City/State : Millbury, MA
Weather : Rain

File Name : 187600S4
Site Code : 18760004
Start Date : 2/27/2021
Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

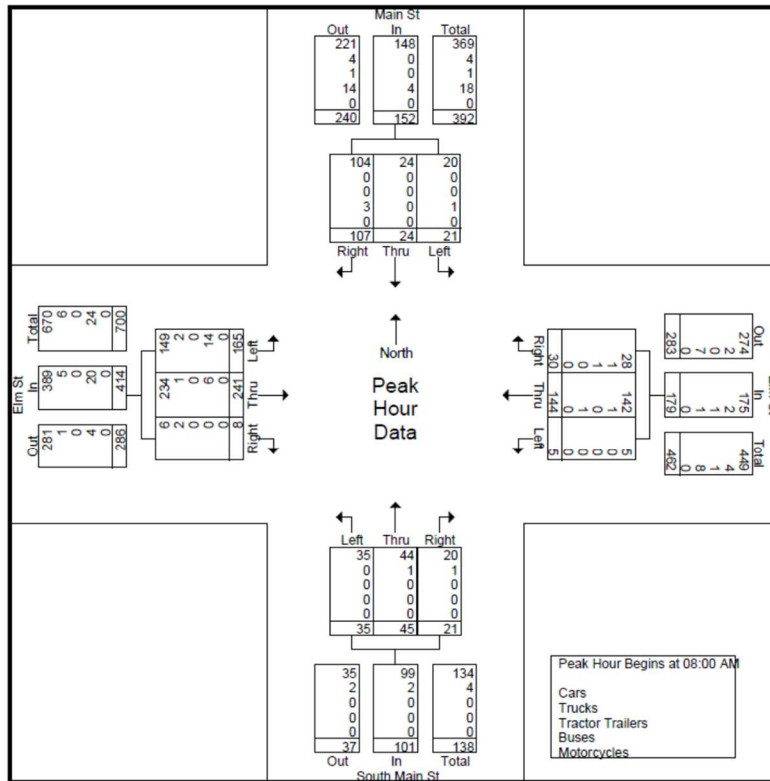
	11:45 AM			11:30 AM			11:00 AM		
+0 mins.	49	32	81	34	74	108	34	29	63
+15 mins.	48	32	80	47	86	133	32	32	64
+30 mins.	48	38	86	39	72	111	41	38	79
+45 mins.	60	35	95	36	68	104	35	30	65
Total Volume	205	137	342	156	300	456	142	129	271
% App. Total	59.9	40.1		34.2	65.8		52.4	47.6	
PHF	.854	.901	.900	.830	.872	.857	.866	.849	.858
Cars	204	136	340	156	298	454	142	129	271
% Cars	99.5	99.3	99.4	100	99.3	99.6	100	100	100
Trucks	1	0	1	0	0	0	0	0	0
% Trucks	0.5	0	0.3	0	0	0	0	0	0
Tractor Trailers	0	0	0	0	1	1	0	0	0
% Tractor Trailers	0	0	0	0	0.3	0.2	0	0	0
Buses	0	1	1	0	1	1	0	0	0
% Buses	0	0.7	0.3	0	0.3	0.2	0	0	0
Motorcycles	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

File Name : 18760005
Site Code : 18760005
Start Date : 2/25/2021
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

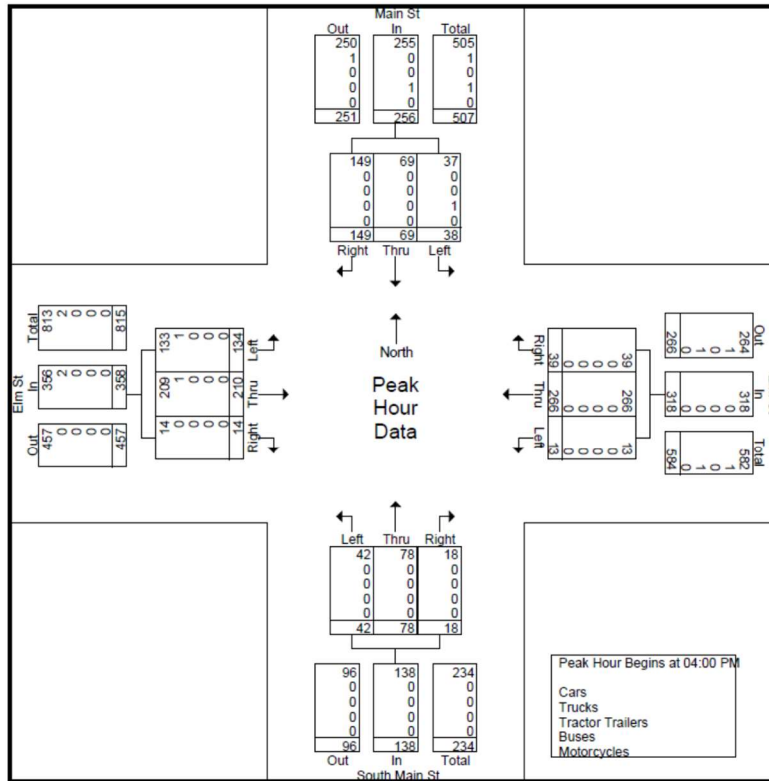
	07:45 AM				07:45 AM				07:30 AM				08:00 AM			
+0 mins.	4	5	36	45	3	41	11	55	6	25	3	34	50	57	1	108
+15 mins.	3	6	22	31	1	29	10	40	4	14	2	20	33	54	4	91
+30 mins.	5	4	22	31	3	43	6	52	7	10	6	23	39	73	2	114
+45 mins.	6	6	36	48	0	39	7	46	7	12	9	28	43	57	1	101
Total Volume	18	21	116	155	7	152	34	193	24	61	20	105	165	241	8	414
% App. Total	11.6	13.5	74.8		3.6	78.8	17.6		22.9	58.1	19		39.9	58.2	1.9	
PHF	.750	.875	.806	.807	.583	.884	.773	.877	.857	.610	.556	.772	.825	.825	.500	.908
Cars	16	21	110	147	7	150	31	188	24	61	19	104	149	234	6	389
% Cars	88.9	100	94.8	94.8	100	98.7	91.2	97.4	100	100	95	99	90.3	97.1	75	94
Trucks	0	0	0	0	0	0	2	2	0	0	1	1	2	1	2	5
% Trucks	0	0	0	0	0	0	5.9	1	0	0	5	1	1.2	0.4	25	1.2
Tractor Trailers	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
% Tractor Trailers	5.6	0	0	0.6	0	0	2.9	0.5	0	0	0	0	0	0	0	0
Buses	1	0	6	7	0	2	0	2	0	0	0	0	14	6	0	20
% Buses	5.6	0	5.2	4.5	0	1.3	0	1	0	0	0	0	8.5	2.5	0	4.8
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Clear

File Name : 18760005
Site Code : 18760005
Start Date : 2/25/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

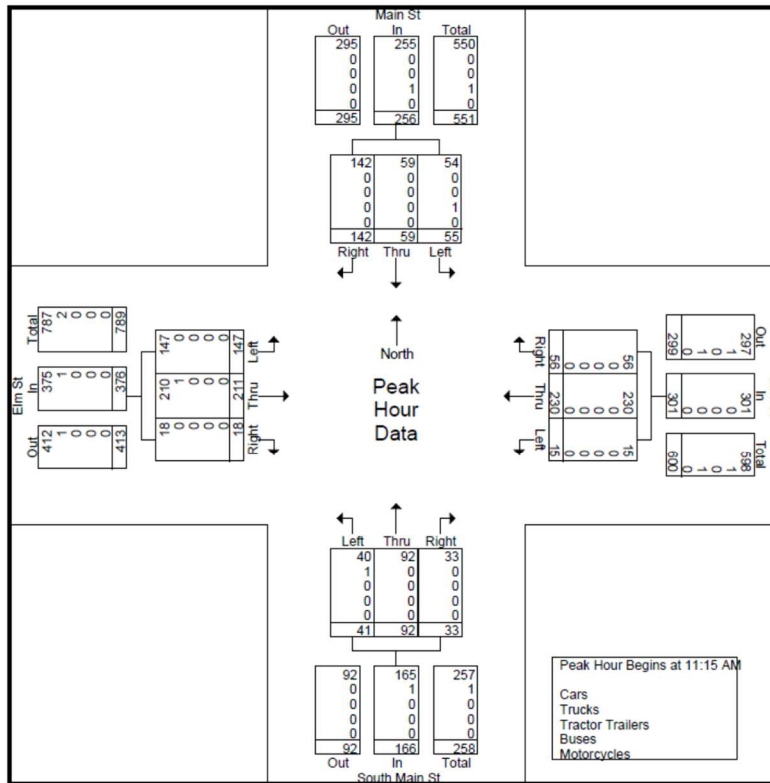
	04:30 PM				04:45 PM				04:00 PM				04:00 PM			
+0 mins.	7	25	41	73	6	76	12	94	10	22	2	34	43	49	4	96
+15 mins.	13	17	36	66	2	73	18	93	14	22	6	42	25	43	2	70
+30 mins.	17	10	35	62	3	55	9	67	8	16	5	29	30	61	6	97
+45 mins.	16	9	38	63	5	70	10	85	10	18	5	33	36	57	2	95
Total Volume	53	61	150	264	16	274	49	339	42	78	18	138	134	210	14	358
% App. Total	20.1	23.1	56.8		4.7	80.8	14.5		30.4	56.5	13		37.4	58.7	3.9	
PHF	.779	.610	.915	.904	.667	.901	.681	.902	.750	.886	.750	.821	.779	.861	.583	.923
Cars	52	61	150	263	16	274	49	339	42	78	18	138	133	209	14	356
% Cars	98.1	100	100	99.6	100	100	100	100	100	100	100	100	99.3	99.5	100	99.4
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0.5	0	0.6
Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	1.9	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Proposed Residential Development
Canal Street, Millbury, MA

Accurate Counts
978-664-2565

N/S Street : Main St / South Main St
E/W Street : Elm Street
City/State : Millbury, MA
Weather : Rain

File Name : 187600S5
Site Code : 18760005
Start Date : 2/27/2021
Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:15 AM				12:00 PM				11:00 AM				11:00 AM			
+0 mins.	14	17	36	67	4	66	11	81	12	17	4	33	36	44	1	81
+15 mins.	16	12	25	53	1	55	10	66	11	27	9	47	40	50	4	94
+30 mins.	12	14	44	70	4	54	11	69	10	23	4	37	41	70	4	115
+45 mins.	13	16	37	66	4	70	15	89	11	27	13	51	36	48	7	91
Total Volume	55	59	142	256	13	245	47	305	44	94	30	168	153	212	16	381
% App. Total	21.5	23	55.5		4.3	80.3	15.4		26.2	56	17.9		40.2	55.6	4.2	
PHF	.859	.868	.807	.914	.813	.875	.783	.857	.917	.870	.577	.824	.933	.757	.571	.828
Cars	54	59	142	255	13	245	47	305	43	94	30	167	153	212	16	381
% Cars	98.2	100	100	99.6	100	100	100	100	97.7	100	100	99.4	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	2.3	0	0	0.6	0	0	0	0
Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	1.8	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Exhibit 3-8
Motor Vehicle Stopping Sight Distances

Design Speed	Stopping Sight Distance (ft) by Percent Grade (%)						
	0	Downgrade			Upgrade		
		3	6	9	3	6	9
20	115	116	120	126	109	107	104
25	155	158	165	173	147	143	140
30	200	205	215	227	200	184	179
35	250	257	271	287	237	229	222
40	305	315	333	354	289	278	269
45	360	378	400	427	344	331	320
50	425	446	474	507	405	388	375
55	495	520	553	593	469	450	433
60	570	598	638	686	538	515	495
65	645	682	728	785	612	584	561
70	730	771	825	891	690	658	631
75	820	866	927	1003	772	736	704

Source: A Policy on Geometric Design of Streets and Highways, AASHTO, Washington DC, 2004. Chapter 3 Elements of Design

Massachusetts Highway Department
Statewide Traffic Data Collection
2019 Weekday Seasonal Factors

Factor Group	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Axle Factor
R1	1.22	1.14	1.12	1.06	1.00	0.96	0.87	0.85	0.96	0.99	1.04	1.12	0.85
R2	0.95	0.96	0.98	0.97	0.97	0.93	0.97	0.94	0.96	0.90	0.92	0.93	0.96
R3	1.15	1.06	1.07	1.00	0.89	0.88	0.89	0.89	0.95	0.92	1.02	1.01	0.97
R4-R7	1.09	1.09	1.11	1.02	0.96	0.92	0.89	0.89	0.99	0.98	1.09	1.13	0.98
U1-Boston	1.03	1.01	0.98	0.94	0.94	0.92	0.95	0.93	0.94	0.94	0.97	1.04	0.96
U1-Essex	1.09	1.06	1.03	0.99	0.94	0.90	0.88	0.86	0.93	0.94	0.99	1.06	0.93
U1-Southeast	1.06	1.05	1.01	0.97	0.95	0.93	0.93	0.90	0.94	0.94	0.98	1.04	0.98
U1-West	1.19	1.14	1.09	0.95	0.92	0.89	0.89	0.86	0.91	0.95	0.97	1.07	0.84
U1-Worcester	1.02	1.04	0.97	0.94	0.93	0.91	0.95	0.91	0.93	0.92	0.95	1.10	0.88
U2	1.01	1.00	0.94	0.93	0.91	0.89	0.93	0.90	0.90	0.91	0.94	1.02	0.99
U3	1.06	1.03	0.98	0.94	0.93	0.91	0.95	0.91	0.92	0.93	0.97	1.00	0.98
U4-U7	1.01	1.00	0.95	0.92	0.88	0.86	0.92	0.91	0.92	0.94	0.99	1.04	0.99
Rec - East	1.04	1.16	1.12	0.98	0.92	0.88	0.77	0.81	0.94	1.02	1.08	1.12	0.99
Rec - West	1.30	1.23	1.32	1.18	0.95	0.82	0.70	0.69	0.97	0.96	1.16	1.15	0.98

Round off:

0-999 = 10

>1000 = 100

U = Urban

R = Rural

1 - Interstate

2 - Freeway and Expressway

3 - Other Principal Arterial

4 - Minor Arterial

5 - Major Collector

6 - Minor Collector

7 - Local Road and Street

<p>Recreational - East Group - Cape Cod (all towns) including the town of Plymouth south of Route 3A (stations 7014,7079,7080,7090,7091,7092,7093,7094,7095,7096,7097,7108 and 7178), Martha's Vineyard and Nantucket.</p> <p>Recreational - West Group - Continuous Stations 2 and 189 including stations 1066,1067,1083,1084,1085,1086,1087,1088,1089,1090,1091,1092,1093,1094,1095,1096,1097,1098,1099,1100,1101,1102,1103,1104,1105,1106,1107,1108,1113,1114,1116,2196,2197 and 2198.</p>

MassDOT Yearly Growth Rates
for data from 2014 to 2018

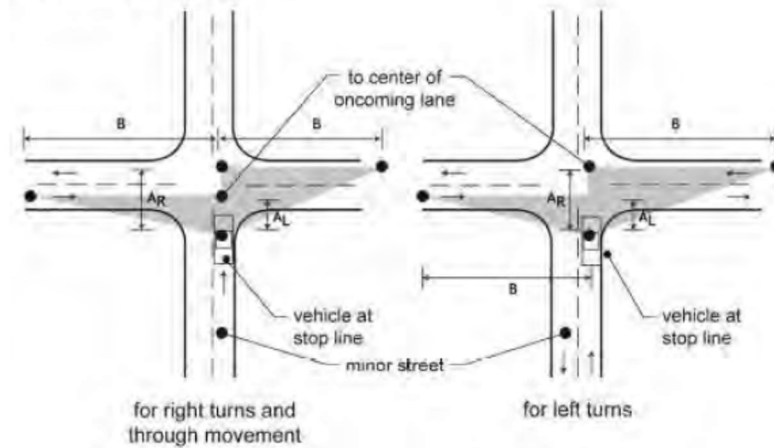
Growth Factors Group	Grow 2014 to 2015	Grow 2015 to 2016	Grow 2016 to 2017	Grow 2017 to 2018	Grow 2018 to 2019
R1	0	0.023	0.004	0.018	0.016
R2	0.05	0.068	0.004	0.014	0.014
R3	-0.038	0.002	0.008	0.011	0.06
R4-7	-0.01	0.003	0.001	0.011	0.012
Rec – East		0.032	0.02	0.041	0.025
Rec – West		0.051	-0.008	0.029	0
U1-Boston	0.061	0.07	-0.003	0.012	0.006
U1-Essex	0.024	0.025	0.007	0.014	0.011
U1-Southeast	0.05	0.062	0.021	0.014	0
U1-West	0.03	-0.027	0.02	0.028	0.013
U1-Worcester	0.042	0.005	0.018	0.01	0.01
U2	0.04	0.048	0.008	0.01	0.02
U3	0.011	0.013	0.011	0.014	0.004
U4-7	0.023	0.062	0.017	0.003	-0.004

Average Crash Rates, per Million Entering Vehicles, by Intersection Type
(Based upon crash information queried on June 26, 2018)

Location	Signalized Intersections	Unsignalized Intersections
Statewide	0.78	0.57
District 1*	0.80*	0.44*
District 2	0.89	0.62
District 3	0.89	0.61
District 4	0.73	0.57
District 5	0.75	0.57
District 6	0.71	0.52

* - District 1 should use Statewide Rates due to low sample total

Exhibit 3-11
Sight Triangle Case B
Departure Sight Triangles



Sight Triangle Legs: Case B – Stop Control on Cross Street

Major Street Design Speed (mph)	Length of Sight Triangle Legs (feet)			
	Minor Street for Vehicles Approaching From Right (AR, feet)	Minor Street for Vehicles Approaching From Left (AL, feet)	Major Street For Left Turns (B, feet)	Major Street for Right Turns or Through (B, feet)
15	32.5	20.5	170	145
20	32.5	20.5	225	195
25	32.5	20.5	280	240
30	32.5	20.5	335	290
35	32.5	20.5	390	335
40	32.5	20.5	445	385
45	32.5	20.5	500	430
50	32.5	20.5	555	480
55	32.5	20.5	610	530
60	32.5	20.5	665	575
65	32.5	20.5	720	625
70	32.5	20.5	775	670
75	32.5	20.5	830	720

Sight triangle legs shown are for passenger car crossing or turning into a two-lane street, with grades (all approaches) 3 percent or less. For other grades and for other major street widths, recalculate using AASHTO *Green Book* formulas.

Source: *A Policy on Geometric Design of Streets and Highways*, AASHTO, Washington DC, 2004. Chapter 3 Elements of Design



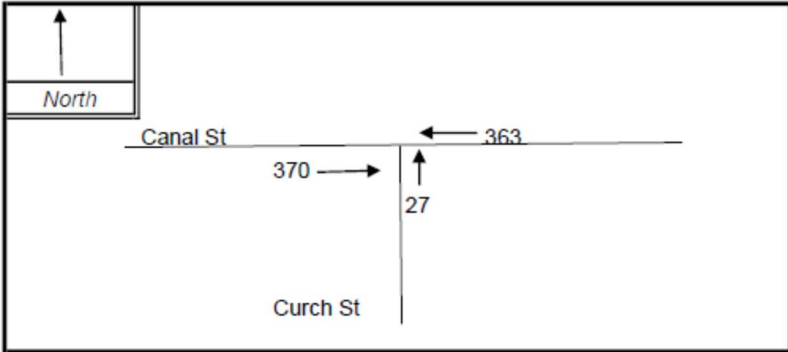
INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Millbury COUNT DATE : Feb-21
 DISTRICT : 3 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Canal St
 MINOR STREET(S) : Church St

INTERSECTION DIAGRAM
 (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB			
PEAK HOURLY VOLUMES (AM/PM) :	370	363	27			

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

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

Comments : No crashes reported
 Project Title & Date : Canal St Residential Development - July 2021



INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Millbury COUNT DATE : Feb-21

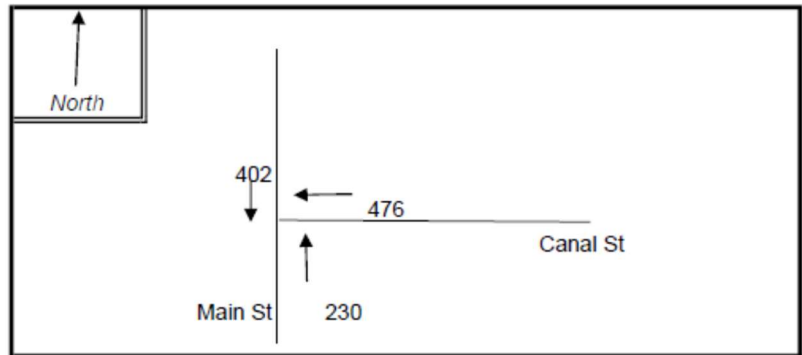
DISTRICT : _____ UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Main Street

MINOR STREET(S) : Canal Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	WB	NB	SB			
PEAK HOURLY VOLUMES (AM/PM) :	476	230	402			1,108

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

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

Comments : Significantly lower than accident rate of 0.89 for signalized intersections in Dist 3 of massDOT
Project Title & Date : Canal Street Residential Development - July 2021



INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Millbury COUNT DATE : Feb-21

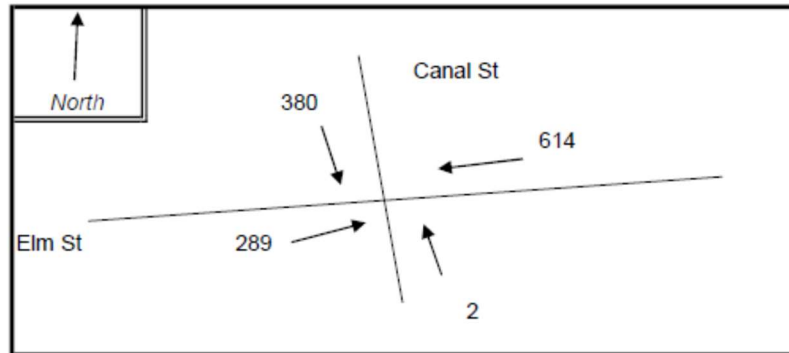
DISTRICT : _____ UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Canal Street

MINOR STREET(S) : Elm 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) :	289	614	2	380		1,285

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

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

Comments : Much lower than signalized intersection rate of 0.89 in Dist 3 of massDOT

Project Title & Date : Canal Street Residential Development - July 2021



INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Millbury COUNT DATE : Feb-21

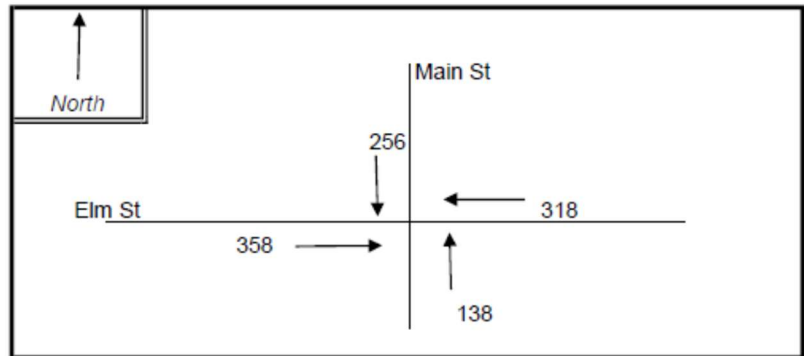
DISTRICT : _____ UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Main Street

MINOR STREET(S) : Elm 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) :	358	318	138	256		1,070

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

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

Comments : Much lower than rate of 0.89 for signalized intersections in Dist 3 of massDOT

Project Title & Date: Canal Street Residential Development - July 2021

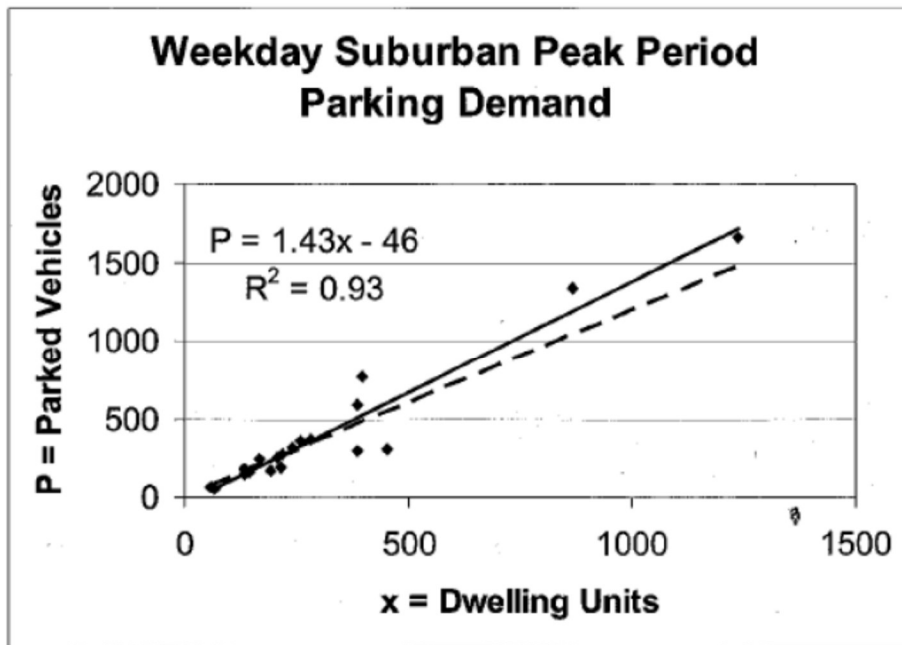
Trip Generation

<u>DATA STATISTICS</u>	<u>DATA STATISTICS</u>	<u>DATA STATISTICS</u>	<u>DATA STATISTICS</u>
Land Use: Multifamily Housing (Mid-Rise) (221) Click for more details	Land Use: Multifamily Housing (Mid-Rise) (221) Click for more details	Land Use: Multifamily Housing (Mid-Rise) (221) Click for more details	Land Use: Multifamily Housing (Mid-Rise) (221) Click for more details
Independent Variable: Dwelling Units	Independent Variable: Dwelling Units	Independent Variable: Dwelling Units	Independent Variable: Dwelling Units
Time Period: Weekday	Time Period: Weekday Peak Hour of Adjacent Street Traffic One Hour Between 7 and 9 a.m.	Time Period: Weekday Peak Hour of Adjacent Street Traffic One Hour Between 4 and 6 p.m.	Time Period: Saturday Peak Hour of Generator
Setting/Location: General Urban/Suburban	Setting/Location: General Urban/Suburban	Setting/Location: General Urban/Suburban	Setting/Location: General Urban/Suburban
Trip Type: Vehicle	Trip Type: Vehicle	Trip Type: Vehicle	Trip Type: Vehicle
Number of Studies: 27	Number of Studies: 53	Number of Studies: 60	Number of Studies: 8
Avg. Num. of Dwelling Units: 205	Avg. Num. of Dwelling Units: 207	Avg. Num. of Dwelling Units: 208	Avg. Num. of Dwelling Units: 264
Average Rate: 5.44	Average Rate: 0.36	Average Rate: 0.44	Average Rate: 0.44
Range of Rates: 1.27 - 12.50	Range of Rates: 0.06 - 1.61	Range of Rates: 0.15 - 1.11	Range of Rates: 0.34 - 0.73
Standard Deviation: 2.03	Standard Deviation: 0.19	Standard Deviation: 0.19	Standard Deviation: 0.08
Fitted Curve Equation: $T = 5.45(X) - 1.75$	Fitted Curve Equation: $\ln(T) = 0.98 \ln(X) - 0.98$	Fitted Curve Equation: $\ln(T) = 0.96 \ln(X) - 0.63$	Fitted Curve Equation: $T = 0.42(X) + 6.73$
R²: 0.77	R²: 0.67	R²: 0.72	R²: 0.89
Directional Distribution: 50% entering, 50% exiting	Directional Distribution: 26% entering, 74% exiting	Directional Distribution: 61% entering, 39% exiting	Directional Distribution: 49% entering, 51% exiting
Calculated Trip Ends: Average Rate: 321 (Total), 160 (Entry), 161 (Exit) Fitted Curve: 320 (Total), 160 (Entry), 160 (Exit)	Calculated Trip Ends: Average Rate: 21 (Total), 5 (Entry), 16 (Exit) Fitted Curve: 20 (Total), 5 (Entry), 15 (Exit)	Calculated Trip Ends: Average Rate: 26 (Total), 16 (Entry), 10 (Exit) Fitted Curve: 27 (Total), 16 (Entry), 11 (Exit)	Calculated Trip Ends: Average Rate: 26 (Total), 13 (Entry), 13 (Exit) Fitted Curve: 32 (Total), 15 (Entry), 17 (Exit)

Land Use: 221 Low/Mid-Rise Apartment

**Average Peak Period Parking Demand vs: Dwelling Units
 On a: Weekday
 Location: Suburban**

Statistic	Peak Period Demand
Peak Period	12:00–5:00 a.m.
Number of Study Sites	19
Average Size of Study Sites	320 dwelling units
Average Peak Period Parking Demand	1.20 vehicles per dwelling unit
Standard Deviation	0.32
Coefficient of Variation	26%
Range	0.68–1.94 vehicles per dwelling unit
85th Percentile	1.46 vehicles per dwelling unit
33rd Percentile	1.09 vehicles per dwelling unit



◆ Actual Data Points — Fitted Curve - - - Average Rate

Route 122A (Canal Street) & Elm Street



Route 122A (Canal Street) & Howe Avenue

PHASE	1	2	3	4	5	6	7	8
MIN GRN	10	10	0	0	10	10	10	0
PASS/10	20	40	0	30	40	40	40	30
MAX # 1	4	30	0	25	25	30	25	8
MAX # 2	30	50	0	50	30	50	30	50
VEL/10	30	30	30	40	40	40	40	40
RED/10	10	20	10	20	10	20	10	20

A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU

PHASE	1	2	3	4	5	6	7	8
WALK	0	0	5	0	0	0	0	0
PED CLR	0	0	10	0	0	0	0	0
*FL WK	0	0	0	0	0	0	0	0
*EXT PCL	0	0	0	0	0	0	0	0
*ACT RIW	0	0	0	0	0	0	0	0

* CODES... 0-NO... 1-YES...
 A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU

Route 122A (Canal Street) & Main Street

A photograph of a traffic signal display showing a red light cycle. The display is a rectangular panel with a black border and a light blue background. It contains a table of data for eight phases (1-8) and four light colors: PH/INT, RED, MX1, and MX2.

PH/INT	1	2	3	4	5	6	7	8
RED	0+	2	0	0	0	2	0	2
MX1	0	29	0	0	12	29	0	23
MX2	0	29	0	0	12	29	0	23

A photograph of a traffic signal display showing a green light cycle. The display is a rectangular panel with a black border and a light blue background. It contains a table of data for eight phases (1-8) and four light colors: PH/INT, MGR, PSG, and YEL.

PH/INT	1	2	3	4	5	6	7	8
MGR	0+	10	0	0	9	10	0	10
PSG	0	4	0	0	2	4	0	3
YEL	0	3	0	0	3	3	0	3

A photograph of a traffic signal display showing a yellow light cycle. The display is a rectangular panel with a black border and a light blue background. It contains a table of data for eight phases (1-8) and four light colors: PH/INT, WLK, PCL, and S/A.

PH/INT	1	2	3	4	5	6	7	8
WLK	0+	1	0	9	0	1	0	0
PCL	0	0	0	13	0	0	0	0
S/A	0	0	0	0	0	0	0	0

Elm at Main Existing AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		70	0		75	0		70	0		70
Storage Lanes	1		0	0		1	0		1	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Fr _t		0.995				0.850			0.850			0.850
Fl _t Protected	0.950				0.998			0.979			0.977	
Satd. Flow (prot)	1770	1853	0	0	1859	1583	0	1824	1583	0	1820	1583
Fl _t Permitted	0.563				0.990			0.847			0.837	
Satd. Flow (perm)	1049	1853	0	0	1844	1583	0	1578	1583	0	1559	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				35			23			135
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
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5485			6269			4699			4672	
Travel Time (s)		124.7			142.5			106.8			106.2	
Volume (vph)	165	241	8	5	144	30	35	45	21	21	24	107
Peak Hour Factor	0.91	0.91	0.91	0.86	0.86	0.86	0.90	0.90	0.90	0.79	0.79	0.79
Adj. Flow (vph)	181	265	9	6	167	35	39	50	23	27	30	135
Lane Group Flow (vph)	181	274	0	0	173	35	0	89	23	0	57	135
Turn Type	pm+pt			Perm			Perm	Perm		Perm	Perm	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8	8	8	2		2	6		6
Detector Phases	7	4		8	8	8	2	2	2	6	6	6
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	9.0	48.0		37.0	37.0	37.0	12.0	12.0	12.0	15.0	15.0	15.0
Total Split (s)	11.0	53.0	0.0	42.0	42.0	42.0	17.0	17.0	17.0	17.0	17.0	17.0
Total Split (%)	12%	59%	0%	47%	47%	47%	19%	19%	19%	19%	19%	19%
Maximum Green (s)	7.0	48.0		37.0	37.0	37.0	12.0	12.0	12.0	12.0	12.0	12.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lead			Lag		Lag	Lag					
Lead-Lag Optimize?	Yes			Yes		Yes	Yes					
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)	23.9	20.5			11.6	11.6		16.2	16.2		16.2	16.2
Actuated g/C Ratio	0.52	0.49			0.27	0.27		0.41	0.41		0.41	0.41
v/c Ratio	0.28	0.30			0.34	0.08		0.14	0.03		0.09	0.18
Uniform Delay, d1	7.1	7.4			13.9	0.0		8.8	0.0		8.6	0.0
Delay	5.0	5.4			12.3	5.2		12.7	6.4		12.4	3.6
LOS	A	A			B	A		B	A		B	A
Approach Delay		5.3			11.1			11.4			6.2	

Elm at Main Existing AM Peak

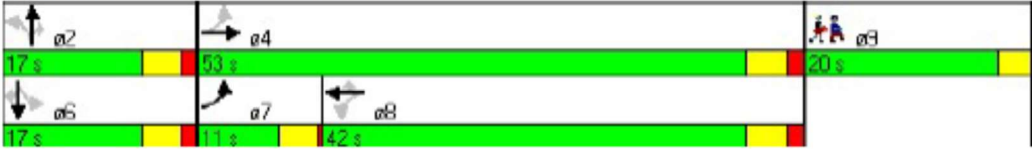


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	A			B			B			A		
90th %ile Green (s)	7.0	23.8		12.8	12.8	12.8	10.7	10.7	10.7	10.7	10.7	10.7
90th %ile Term Code	Max	Hold		Gap	Gap	Gap	Gap	Gap	Gap	Hold	Hold	Hold
70th %ile Green (s)	7.0	21.4		10.4	10.4	10.4	10.0	10.0	10.0	10.0	10.0	10.0
70th %ile Term Code	Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold	Min	Min	Min
50th %ile Green (s)	7.0	21.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
50th %ile Term Code	Max	Hold		Min	Min	Min	Hold	Hold	Hold	Min	Min	Min
30th %ile Green (s)	7.0	21.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
30th %ile Term Code	Max	Hold		Min	Min	Min	Hold	Hold	Hold	Min	Min	Min
10th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	23.0	23.0	23.0	23.0	23.0	23.0
10th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Dwell	Dwell	Dwell	Dwell	Dwell	Dwell
Queue Length 50th (ft)	18	28			32	0		16	0		10	0
Queue Length 95th (ft)	41	58			66	13		44	0		27	0
Internal Link Dist (ft)	5405			6189			4619			4592		
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						75					70	70
50th Bay Block Time %												
95th Bay Block Time %	5%											
Queuing Penalty (veh)												





















Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	39.2
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.34
Intersection Signal Delay:	7.4
Intersection Capacity Utilization	41.9%
90th %ile Actuated Cycle:	44.5
70th %ile Actuated Cycle:	41.4
50th %ile Actuated Cycle:	41
30th %ile Actuated Cycle:	41
10th %ile Actuated Cycle:	28
Intersection LOS:	A
ICU Level of Service	A

Splits and Phases: 1: Elm St & S Main St



Elm at Main Existing PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		70	0		75	0		70	0		70
Storage Lanes	1		0	0		1	0		1	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Fr _t		0.991				0.850			0.850			0.850
Fit Protected	0.950				0.998			0.983			0.983	
Satd. Flow (prot)	1770	1846	0	0	1859	1583	0	1831	1583	0	1831	1583
Fit Permitted	0.349				0.982			0.859			0.855	
Satd. Flow (perm)	650	1846	0	0	1829	1583	0	1600	1583	0	1593	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				35			22			169
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
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5485			6269			4699			4672	
Travel Time (s)		124.7			142.5			106.8			106.2	
Volume (vph)	134	210	14	13	266	39	42	78	18	38	69	149
Peak Hour Factor	0.92	0.92	0.92	0.85	0.85	0.85	0.82	0.82	0.82	0.88	0.88	0.88
Adj. Flow (vph)	146	228	15	15	313	46	51	95	22	43	78	169
Lane Group Flow (vph)	146	243	0	0	328	46	0	146	22	0	121	169
Turn Type	pm+pt			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phases	7	4		8	8	8	2	2	2	6	6	6
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	9.0	40.0		29.0	29.0	29.0	18.0	18.0	18.0	18.0	18.0	18.0
Total Split (s)	11.0	45.0	0.0	34.0	34.0	34.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	13%	51%	0%	39%	39%	39%	26%	26%	26%	26%	26%	26%
Maximum Green (s)	7.0	40.0		29.0	29.0	29.0	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)	26.8	23.2			14.8	14.8		17.1	17.1		17.1	17.1
Actuated g/C Ratio	0.55	0.52			0.33	0.33		0.41	0.41		0.41	0.41
v/c Ratio	0.28	0.25			0.54	0.08		0.22	0.03		0.19	0.23
Uniform Delay, d ₁	6.7	6.9			14.5	2.9		10.2	0.0		10.0	0.0
Delay	5.0	5.3			12.9	5.7		15.5	7.6		15.2	3.7
LOS	A	A			B	A		B	A		B	A
Approach Delay		5.2			12.0			14.5			8.5	

Elm at Main Existing PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Approach LOS	A			B			B			A			
90th %ile Green (s)	7.0	32.3		21.3	21.3	21.3	14.5	14.5	14.5	14.5	14.5	14.5	
90th %ile Term Code	Max	Hold		Gap	Gap	Gap	Gap	Gap	Gap	Hold	Hold	Hold	
70th %ile Green (s)	7.0	26.5		15.5	15.5	15.5	11.1	11.1	11.1	11.1	11.1	11.1	
70th %ile Term Code	Max	Hold		Gap	Gap	Gap	Gap	Gap	Gap	Hold	Hold	Hold	
50th %ile Green (s)	7.0	23.8		12.8	12.8	12.8	10.0	10.0	10.0	10.0	10.0	10.0	
50th %ile Term Code	Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold	Min	Min	Min	
30th %ile Green (s)	7.0	21.5		10.5	10.5	10.5	10.0	10.0	10.0	10.0	10.0	10.0	
30th %ile Term Code	Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold	Min	Min	Min	
10th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	14.3	14.3	14.3	14.3	14.3	14.3	
10th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Dwell	Dwell	Dwell	Dwell	Dwell	Dwell	
Queue Length 50th (ft)	14	24			67	2		30	0		24	0	
Queue Length 95th (ft)	39	61			129	17		72	0		67	32	
Internal Link Dist (ft)	5405			6189			4619			4592			
50th Up Block Time (%)													
95th Up Block Time (%)													
Turn Bay Length (ft)						75					70		
50th Bay Block Time %						7%							
95th Bay Block Time %						32%					13%		
Queuing Penalty (veh)						7					1		

Intersection Summary

Area Type:	Other
Cycle Length:	88
Actuated Cycle Length:	41.8
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.54
Intersection Signal Delay:	9.3
Intersection LOS:	A
Intersection Capacity Utilization:	54.8%
ICU Level of Service:	A
90th %ile Actuated Cycle:	56.8
70th %ile Actuated Cycle:	47.6
50th %ile Actuated Cycle:	43.8
30th %ile Actuated Cycle:	41.5
10th %ile Actuated Cycle:	19.3

Splits and Phases: 1: Elm St & S Main St



Elm at Main Existing Sat Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		70	0		75	0		70	0		70
Storage Lanes	1		0	0		1	0		1	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Fr _t		0.988				0.850			0.850			0.850
Fit Protected	0.950				0.997			0.985			0.977	
Satd. Flow (prot)	1770	1840	0	0	1857	1583	0	1835	1583	0	1820	1583
Fit Permitted	0.470				0.975			0.767			0.544	
Satd. Flow (perm)	875	1840	0	0	1816	1583	0	1429	1583	0	1013	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				60			41			156
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
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5485			6269			4699			4672	
Travel Time (s)		124.7			142.5			106.8			106.2	
Volume (vph)	147	211	18	15	230	56	41	92	33	55	59	142
Peak Hour Factor	0.82	0.82	0.82	0.93	0.93	0.93	0.81	0.81	0.81	0.91	0.91	0.91
Adj. Flow (vph)	179	257	22	16	247	60	51	114	41	60	65	156
Lane Group Flow (vph)	179	279	0	0	263	60	0	165	41	0	125	156
Turn Type	pm+pt			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4			8			2				6
Permitted Phases	4			8		8	2		2	6		6
Detector Phases	7	4		8	8	8	2	2	2	6	6	6
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	5.0	5.0	7.0	7.0	7.0
Minimum Split (s)	9.0	48.0		37.0	37.0	37.0	12.0	12.0	12.0	12.0	12.0	12.0
Total Split (s)	11.0	53.0	0.0	42.0	42.0	42.0	17.0	17.0	17.0	17.0	17.0	17.0
Total Split (%)	12%	59%	0%	47%	47%	47%	19%	19%	19%	19%	19%	19%
Maximum Green (s)	7.0	48.0		37.0	37.0	37.0	12.0	12.0	12.0	12.0	12.0	12.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)	25.3	21.8			13.3	13.3		17.3	17.3		17.3	17.3
Actuated g/C Ratio	0.53	0.50			0.30	0.30		0.42	0.42		0.42	0.42
v/c Ratio	0.30	0.30			0.48	0.11		0.27	0.06		0.29	0.20
Uniform Delay, d1	7.2	7.4			14.5	0.0		9.8	0.0		9.8	0.0
Delay	5.3	5.6			13.0	4.1		14.6	5.8		15.2	3.6
LOS	A	A			B	A		B	A		B	A
Approach Delay		5.5			11.3			12.8			8.8	

Elm at Main Existing Sat Peak

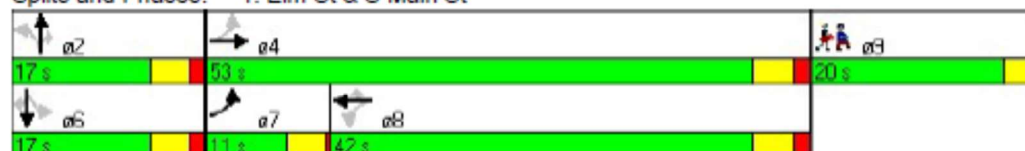


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Approach LOS	A			B			B			A				
90th %ile Green (s)	7.0	27.8		16.8	16.8	16.8	12.0	12.0	12.0	12.0	12.0	12.0		
90th %ile Term Code	Max	Hold		Gap	Gap	Gap	Max	Max	Max	Max	Max	Max		
70th %ile Green (s)	7.0	24.6		13.6	13.6	13.6	12.0	12.0	12.0	12.0	12.0	12.0		
70th %ile Term Code	Max	Hold		Gap	Gap	Gap	Max	Max	Max	Max	Max	Max		
50th %ile Green (s)	7.0	22.5		11.5	11.5	11.5	12.0	12.0	12.0	12.0	12.0	12.0		
50th %ile Term Code	Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold	Max	Max	Max		
30th %ile Green (s)	7.0	21.0		10.0	10.0	10.0	11.1	11.1	11.1	11.1	11.1	11.1		
30th %ile Term Code	Max	Hold		Min	Min	Min	Hold	Hold	Hold	Gap	Gap	Gap		
10th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	15.9	15.9	15.9	15.9	15.9	15.9		
10th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Dwell	Dwell	Dwell	Dwell	Dwell	Dwell		
Queue Length 50th (ft)	21	33			56	0		33	0		25	0		
Queue Length 95th (ft)	38	55			105	17		74	0		72	31		
Internal Link Dist (ft)	5405			6189			4619			4592				
50th Up Block Time (%)														
95th Up Block Time (%)														
Turn Bay Length (ft)						75					70		70	
50th Bay Block Time %														
95th Bay Block Time %						27%					15%			14%
Queuing Penalty (veh)						8					3			11





















Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	40.8
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.48
Intersection Signal Delay:	8.9
Intersection LOS:	A
Intersection Capacity Utilization:	54.2%
ICU Level of Service:	A
90th %ile Actuated Cycle:	49.8
70th %ile Actuated Cycle:	46.6
50th %ile Actuated Cycle:	44.5
30th %ile Actuated Cycle:	42.1
10th %ile Actuated Cycle:	20.9

Splits and Phases: 1: Elm St & S Main St



Elm at Main Future No Build AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		70	0		75	0		70	0		70
Storage Lanes	1		0	0		1	0		1	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Fr _t		0.995				0.850			0.850			0.850
Fit Protected	0.950				0.998			0.979			0.977	
Satd. Flow (prot)	1770	1853	0	0	1859	1583	0	1824	1583	0	1820	1583
Fit Permitted	0.545				0.990			0.842			0.833	
Satd. Flow (perm)	1015	1853	0	0	1844	1583	0	1568	1583	0	1552	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				38			26			149
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
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5485			6269			4699			4672	
Travel Time (s)		124.7			142.5			106.8			106.2	
Volume (vph)	181	265	9	5	158	33	38	49	23	23	26	118
Peak Hour Factor	0.91	0.91	0.91	0.86	0.86	0.86	0.90	0.90	0.90	0.79	0.79	0.79
Adj. Flow (vph)	199	291	10	6	184	38	42	54	26	29	33	149
Lane Group Flow (vph)	199	301	0	0	190	38	0	96	26	0	62	149
Turn Type	pm+pt			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phases	7	4		8	8	8	2	2	2	6	6	6
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	9.0	48.0		37.0	37.0	37.0	12.0	12.0	12.0	15.0	15.0	15.0
Total Split (s)	11.0	53.0	0.0	42.0	42.0	42.0	17.0	17.0	17.0	17.0	17.0	17.0
Total Split (%)	12%	59%	0%	47%	47%	47%	19%	19%	19%	19%	19%	19%
Maximum Green (s)	7.0	48.0		37.0	37.0	37.0	12.0	12.0	12.0	12.0	12.0	12.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)	23.9	20.4		11.8	11.8		15.8	15.8		15.8	15.8	
Actuated g/C Ratio	0.53	0.50		0.29	0.29		0.41	0.41		0.41	0.41	
v/c Ratio	0.30	0.33		0.36	0.08		0.15	0.04		0.10	0.20	
Uniform Delay, d ₁	6.9	7.2		13.6	0.0		9.0	0.0		8.8	0.0	
Delay	5.1	5.5		12.4	5.0		12.9	6.3		12.6	3.5	
LOS	A	A		B	A		B	A		B	A	
Approach Delay		5.4			11.2			11.5			6.2	

Elm at Main Future No Build AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Approach LOS	A			B			B			A			
90th %ile Green (s)	7.0	24.5		13.5	13.5	13.5	11.1	11.1	11.1	11.1	11.1	11.1	
90th %ile Term Code	Max	Hold		Gap	Gap	Gap	Gap	Gap	Gap	Hold	Hold	Hold	
70th %ile Green (s)	7.0	21.9		10.9	10.9	10.9	10.0	10.0	10.0	10.0	10.0	10.0	
70th %ile Term Code	Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold	Min	Min	Min	
50th %ile Green (s)	7.0	21.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
50th %ile Term Code	Max	Hold		Min	Min	Min	Hold	Hold	Hold	Min	Min	Min	
30th %ile Green (s)	7.0	21.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
30th %ile Term Code	Max	Hold		Min	Min	Min	Hold	Hold	Hold	Min	Min	Min	
10th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	16.7	16.7	16.7	16.7	16.7	16.7	
10th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Dwell	Dwell	Dwell	Dwell	Dwell	Dwell	
Queue Length 50th (ft)	20	31			35	0		17	0		11	0	
Queue Length 95th (ft)	45	66			72	13		48	0		29	20	
Internal Link Dist (ft)	5405			6189			4619			4592			
50th Up Block Time (%)													
95th Up Block Time (%)													
Turn Bay Length (ft)						75					70		
50th Bay Block Time %													
95th Bay Block Time %	11%												
Queuing Penalty (veh)	2												

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	38.2
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.36
Intersection Signal Delay:	7.5
Intersection LOS:	A
Intersection Capacity Utilization:	45.6%
ICU Level of Service:	A
90th %ile Actuated Cycle:	45.6
70th %ile Actuated Cycle:	41.9
50th %ile Actuated Cycle:	41
30th %ile Actuated Cycle:	41
10th %ile Actuated Cycle:	21.7

Splits and Phases: 1: Elm St & S Main St



Elm at Main No Build PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		70	0		75	0		70	0		70
Storage Lanes	1		0	0		1	0		1	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Fr _t		0.991				0.850			0.850			0.850
Fl _t Protected	0.950				0.998			0.983			0.982	
Satd. Flow (prot)	1770	1846	0	0	1859	1583	0	1831	1583	0	1829	1583
Fl _t Permitted	0.312				0.981			0.851			0.844	
Satd. Flow (perm)	581	1846	0	0	1827	1583	0	1585	1583	0	1572	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				35			24			186
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
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5485			6269			4699			4672	
Travel Time (s)		124.7			142.5			106.8			106.2	
Volume (vph)	147	231	15	14	293	43	46	86	20	42	76	164
Peak Hour Factor	0.92	0.92	0.92	0.85	0.85	0.85	0.82	0.82	0.82	0.88	0.88	0.88
Adj. Flow (vph)	160	251	16	16	345	51	56	105	24	48	86	186
Lane Group Flow (vph)	160	267	0	0	361	51	0	161	24	0	134	186
Turn Type	pm+pt			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phases	7	4		8	8	8	2	2	2	6	6	6
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	9.0	40.0		29.0	29.0	29.0	18.0	18.0	18.0	18.0	18.0	18.0
Total Split (s)	11.0	45.0	0.0	34.0	34.0	34.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	13%	51%	0%	39%	39%	39%	26%	26%	26%	26%	26%	26%
Maximum Green (s)	7.0	40.0		29.0	29.0	29.0	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)	26.7	24.1			15.9	15.9		12.8	12.8		12.8	12.8
Actuated g/C Ratio	0.54	0.53			0.35	0.35		0.28	0.28		0.28	0.28
v/c Ratio	0.33	0.27			0.56	0.09		0.36	0.05		0.30	0.32
Uniform Delay, d ₁	5.2	5.4			12.3	3.1		13.3	0.0		13.0	0.0
Delay	5.3	5.5			13.2	6.1		16.1	7.7		15.9	3.6
LOS	A	A			B	A		B	A		B	A
Approach Delay		5.4			12.3			15.0			8.7	

Elm at Main No Build PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	A			B			B			A		
90th %ile Green (s)	7.0	34.3		23.3	23.3	23.3	15.9	15.9	15.9	15.9	15.9	15.9
90th %ile Term Code	Max	Hold		Gap	Gap	Gap	Gap	Gap	Gap	Hold	Hold	Hold
70th %ile Green (s)	7.0	27.9		16.9	16.9	16.9	11.9	11.9	11.9	11.9	11.9	11.9
70th %ile Term Code	Max	Hold		Gap	Gap	Gap	Gap	Gap	Gap	Hold	Hold	Hold
50th %ile Green (s)	7.0	24.7		13.7	13.7	13.7	10.0	10.0	10.0	10.0	10.0	10.0
50th %ile Term Code	Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold	Min	Min	Min
30th %ile Green (s)	7.0	22.2		11.2	11.2	11.2	10.0	10.0	10.0	10.0	10.0	10.0
30th %ile Term Code	Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold	Min	Min	Min
10th %ile Green (s)	0.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
10th %ile Term Code	Skip	Hold		Min	Min	Min	Hold	Hold	Hold	Min	Min	Min
Queue Length 50th (ft)	16	27			75	3		34	0		28	0
Queue Length 95th (ft)	46	72			148	19		82	0		76	34
Internal Link Dist (ft)	5405			6189			4619			4592		
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						75					70	70
50th Bay Block Time %						13%						
95th Bay Block Time %						34%					19%	15%
Queuing Penalty (veh)						12					2	13





















Intersection Summary

Area Type:	Other
Cycle Length:	88
Actuated Cycle Length:	45.4
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	9.6
Intersection LOS:	A
Intersection Capacity Utilization:	58.5%
ICU Level of Service:	A
90th %ile Actuated Cycle:	60.2
70th %ile Actuated Cycle:	49.8
50th %ile Actuated Cycle:	44.7
30th %ile Actuated Cycle:	42.2
10th %ile Actuated Cycle:	30

Splits and Phases: 1: Elm St & S Main St



Elm at Main Future No Build Sat Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		70	0		75	0		70	0		70
Storage Lanes	1		0	0		1	0		1	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Fr _t		0.988				0.850			0.850			0.850
Fit Protected	0.950				0.997			0.985			0.976	
Satd. Flow (prot)	1770	1840	0	0	1857	1583	0	1835	1583	0	1818	1583
Fit Permitted	0.445				0.974			0.704			0.489	
Satd. Flow (perm)	829	1840	0	0	1814	1583	0	1311	1583	0	911	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				64			43			173
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
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5485			6269			4699			4672	
Travel Time (s)		124.7			142.5			106.8			106.2	
Volume (vph)	162	232	20	16	253	62	45	101	36	60	65	157
Peak Hour Factor	0.82	0.82	0.82	0.93	0.93	0.93	0.81	0.81	0.81	0.91	0.91	0.91
Adj. Flow (vph)	198	283	24	17	272	67	56	125	44	66	71	173
Lane Group Flow (vph)	198	307	0	0	289	67	0	181	44	0	137	173
Turn Type	pm+pt			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phases	7	4		8	8	8	2	2	2	6	6	6
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	5.0	5.0	7.0	7.0	7.0
Minimum Split (s)	9.0	48.0		37.0	37.0	37.0	12.0	12.0	12.0	12.0	12.0	12.0
Total Split (s)	11.0	53.0	0.0	42.0	42.0	42.0	17.0	17.0	17.0	17.0	17.0	17.0
Total Split (%)	12%	59%	0%	47%	47%	47%	19%	19%	19%	19%	19%	19%
Maximum Green (s)	7.0	48.0		37.0	37.0	37.0	12.0	12.0	12.0	12.0	12.0	12.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)	26.0	22.4			14.0	14.0		17.6	17.6		17.6	17.6
Actuated g/C Ratio	0.53	0.50			0.31	0.31		0.42	0.42		0.42	0.42
v/c Ratio	0.34	0.33			0.51	0.12		0.33	0.06		0.36	0.22
Uniform Delay, d1	7.4	7.7			14.8	0.6		10.2	0.2		10.4	0.0
Delay	5.4	5.8			13.1	4.0		15.6	6.2		18.6	3.6
LOS	A	A			B	A		B	A		B	A
Approach Delay		5.6			11.4			13.8			10.2	

Elm at Main Future No Build Sat Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Approach LOS	A			B			B			B			
90th %ile Green (s)	7.0	29.9		18.9	18.9	18.9	12.0	12.0	12.0	12.0	12.0	12.0	
90th %ile Term Code	Max	Hold		Gap	Gap	Gap	Max	Max	Max	Max	Max	Max	
70th %ile Green (s)	7.0	25.5		14.5	14.5	14.5	12.0	12.0	12.0	12.0	12.0	12.0	
70th %ile Term Code	Max	Hold		Gap	Gap	Gap	Max	Max	Max	Max	Max	Max	
50th %ile Green (s)	7.0	23.2		12.2	12.2	12.2	12.0	12.0	12.0	12.0	12.0	12.0	
50th %ile Term Code	Max	Hold		Gap	Gap	Gap	Max	Max	Max	Max	Max	Max	
30th %ile Green (s)	7.0	21.0		10.0	10.0	10.0	12.0	12.0	12.0	12.0	12.0	12.0	
30th %ile Term Code	Max	Hold		Min	Min	Min	Max	Max	Max	Max	Max	Max	
10th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	16.1	16.1	16.1	16.1	16.1	16.1	
10th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Dwell	Dwell	Dwell	Dwell	Dwell	Dwell	
Queue Length 50th (ft)	23	37			62	1		38	0		29	0	
Queue Length 95th (ft)	41	60			114	18		87	0		#102	34	
Internal Link Dist (ft)	5405			6189				4619			4592		
50th Up Block Time (%)													
95th Up Block Time (%)													
Turn Bay Length (ft)						75					70	70	
50th Bay Block Time %					1%								
95th Bay Block Time %					29%			24%			33%		
Queuing Penalty (veh)					9			5			28		





















Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	41.7
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.51
Intersection Signal Delay:	9.4
Intersection Capacity Utilization	62.0%
90th %ile Actuated Cycle:	51.9
70th %ile Actuated Cycle:	47.5
50th %ile Actuated Cycle:	45.2
30th %ile Actuated Cycle:	43
10th %ile Actuated Cycle:	21.1
#	95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Splits and Phases: 1: Elm St & S Main St



Elm at Main Future Build AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		70	0		75	0		70	0		70
Storage Lanes	1		0	0		1	0		1	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Friction		0.995				0.850			0.850			0.850
Fit Protected	0.950				0.998			0.979			0.977	
Satd. Flow (prot)	1770	1853	0	0	1859	1583	0	1824	1583	0	1820	1583
Fit Permitted	0.545				0.990			0.842			0.833	
Satd. Flow (perm)	1015	1853	0	0	1844	1583	0	1568	1583	0	1552	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				38			26			149
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
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5485			6269			4699			4672	
Travel Time (s)		124.7			142.5			106.8			106.2	
Volume (vph)	181	265	9	5	158	33	38	49	23	23	26	118
Peak Hour Factor	0.91	0.91	0.91	0.86	0.86	0.86	0.90	0.90	0.90	0.79	0.79	0.79
Adj. Flow (vph)	199	291	10	6	184	38	42	54	26	29	33	149
Lane Group Flow (vph)	199	301	0	0	190	38	0	96	26	0	62	149
Turn Type	pm+pt			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phases	7	4		8	8	8	2	2	2	6	6	6
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	9.0	48.0		37.0	37.0	37.0	12.0	12.0	12.0	15.0	15.0	15.0
Total Split (s)	11.0	53.0	0.0	42.0	42.0	42.0	17.0	17.0	17.0	17.0	17.0	17.0
Total Split (%)	12%	59%	0%	47%	47%	47%	19%	19%	19%	19%	19%	19%
Maximum Green (s)	7.0	48.0		37.0	37.0	37.0	12.0	12.0	12.0	12.0	12.0	12.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0	0	0	0	0
Act Effect Green (s)	23.9	20.4		11.8	11.8		15.8	15.8		15.8	15.8	
Actuated g/C Ratio	0.53	0.50		0.29	0.29		0.41	0.41		0.41	0.41	
v/c Ratio	0.30	0.33		0.36	0.08		0.15	0.04		0.10	0.20	
Uniform Delay, d1	6.9	7.2		13.6	0.0		9.0	0.0		8.8	0.0	
Delay	5.1	5.5		12.4	5.0		12.9	6.3		12.6	3.5	
LOS	A	A		B	A		B	A		B	A	
Approach Delay		5.4			11.2			11.5			6.2	

Elm at Main Future Build AM Peak

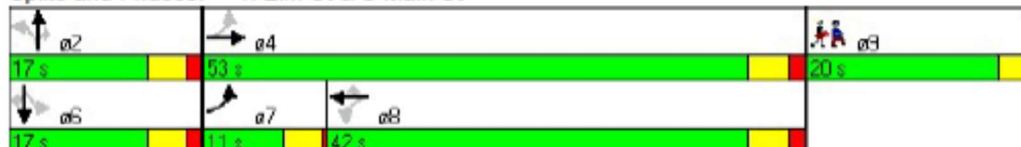


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Approach LOS	A			B			B			A			
90th %ile Green (s)	7.0	24.5		13.5	13.5	13.5	11.1	11.1	11.1	11.1	11.1	11.1	
90th %ile Term Code	Max	Hold		Gap	Gap	Gap	Gap	Gap	Gap	Hold	Hold	Hold	
70th %ile Green (s)	7.0	21.9		10.9	10.9	10.9	10.0	10.0	10.0	10.0	10.0	10.0	
70th %ile Term Code	Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold	Min	Min	Min	
50th %ile Green (s)	7.0	21.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
50th %ile Term Code	Max	Hold		Min	Min	Min	Hold	Hold	Hold	Min	Min	Min	
30th %ile Green (s)	7.0	21.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
30th %ile Term Code	Max	Hold		Min	Min	Min	Hold	Hold	Hold	Min	Min	Min	
10th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	16.7	16.7	16.7	16.7	16.7	16.7	
10th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Dwell	Dwell	Dwell	Dwell	Dwell	Dwell	
Queue Length 50th (ft)	20	31			35	0		17	0		11	0	
Queue Length 95th (ft)	45	66			72	13		48	0		29	20	
Internal Link Dist (ft)	5405			6189			4619			4592			
50th Up Block Time (%)													
95th Up Block Time (%)													
Turn Bay Length (ft)						75					70		70
50th Bay Block Time %													
95th Bay Block Time %	11%												
Queuing Penalty (veh)	2												





















Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	38.2
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.36
Intersection Signal Delay:	7.5
Intersection Capacity Utilization	45.6%
90th %ile Actuated Cycle:	45.6
70th %ile Actuated Cycle:	41.9
50th %ile Actuated Cycle:	41
30th %ile Actuated Cycle:	41
10th %ile Actuated Cycle:	21.7
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 1: Elm St & S Main St



Elm at Main Build PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		70	0		75	0		70	0		70
Storage Lanes	1		0	0		1	0		1	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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		0.991				0.850			0.850			0.850
Fit Protected	0.950				0.998			0.983			0.982	
Satd. Flow (prot)	1770	1846	0	0	1859	1583	0	1831	1583	0	1829	1583
Fit Permitted	0.311				0.981			0.851			0.844	
Satd. Flow (perm)	579	1846	0	0	1827	1583	0	1585	1583	0	1572	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				35			24			186
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
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5485			6269			4699			4672	
Travel Time (s)		124.7			142.5			106.8			106.2	
Volume (vph)	147	232	15	14	294	43	46	86	20	42	76	164
Peak Hour Factor	0.92	0.92	0.92	0.85	0.85	0.85	0.82	0.82	0.82	0.88	0.88	0.88
Adj. Flow (vph)	160	252	16	16	346	51	56	105	24	48	86	186
Lane Group Flow (vph)	160	268	0	0	362	51	0	161	24	0	134	186
Turn Type	pm+pt			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phases	7	4		8	8	8	2	2	2	6	6	6
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	9.0	40.0		29.0	29.0	29.0	18.0	18.0	18.0	18.0	18.0	18.0
Total Split (s)	11.0	45.0	0.0	34.0	34.0	34.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	13%	51%	0%	39%	39%	39%	26%	26%	26%	26%	26%	26%
Maximum Green (s)	7.0	40.0		29.0	29.0	29.0	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)	26.8	24.2		16.0	16.0		12.8	12.8		12.8	12.8	
Actuated g/C Ratio	0.54	0.53		0.35	0.35		0.28	0.28		0.28	0.28	
v/c Ratio	0.33	0.27		0.56	0.09		0.36	0.05		0.30	0.32	
Uniform Delay, d1	5.2	5.4		12.3	3.1		13.3	0.0		13.1	0.0	
Delay	5.3	5.5		13.1	6.0		16.2	7.7		16.0	3.6	
LOS	A	A		B	A		B	A		B	A	
Approach Delay		5.4		12.3			15.1			8.8		

Elm at Main Build PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Approach LOS	A			B			B			A			
90th %ile Green (s)	7.0	34.7		23.7	23.7	23.7	15.8	15.8	15.8	15.8	15.8	15.8	
90th %ile Term Code	Max	Hold		Gap	Gap	Gap	Gap	Gap	Gap	Hold	Hold	Hold	
70th %ile Green (s)	7.0	27.9		16.9	16.9	16.9	11.9	11.9	11.9	11.9	11.9	11.9	
70th %ile Term Code	Max	Hold		Gap	Gap	Gap	Gap	Gap	Gap	Hold	Hold	Hold	
50th %ile Green (s)	7.0	24.7		13.7	13.7	13.7	10.0	10.0	10.0	10.0	10.0	10.0	
50th %ile Term Code	Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold	Min	Min	Min	
30th %ile Green (s)	7.0	22.3		11.3	11.3	11.3	10.0	10.0	10.0	10.0	10.0	10.0	
30th %ile Term Code	Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold	Min	Min	Min	
10th %ile Green (s)	0.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
10th %ile Term Code	Skip	Hold		Min	Min	Min	Hold	Hold	Hold	Min	Min	Min	
Queue Length 50th (ft)	16	27			75	3		34	0		28	0	
Queue Length 95th (ft)	45	71			148	19		83	0		77	35	
Internal Link Dist (ft)	5405			6189			4619			4592			
50th Up Block Time (%)													
95th Up Block Time (%)													
Turn Bay Length (ft)						75					70		
50th Bay Block Time %						14%							
95th Bay Block Time %						34%					20%	15%	
Queuing Penalty (veh)						12					2	14	





















Intersection Summary

Area Type:	Other
Cycle Length:	88
Actuated Cycle Length:	45.5
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	9.6
Intersection Capacity Utilization	58.7%
90th %ile Actuated Cycle:	60.5
70th %ile Actuated Cycle:	49.8
50th %ile Actuated Cycle:	44.7
30th %ile Actuated Cycle:	42.3
10th %ile Actuated Cycle:	30

Splits and Phases: 1: Elm St & S Main St



Elm at Main Future Build Sat Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		70	0		75	0		70	0		70
Storage Lanes	1		0	0		1	0		1	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Frts		0.988				0.850			0.850			0.850
Flt Protected	0.950				0.997			0.985			0.976	
Satd. Flow (prot)	1770	1840	0	0	1857	1583	0	1835	1583	0	1818	1583
Flt Permitted	0.444				0.974			0.704			0.489	
Satd. Flow (perm)	827	1840	0	0	1814	1583	0	1311	1583	0	911	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				64			43			173
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
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5485			6269			4699			4672	
Travel Time (s)		124.7			142.5			106.8			106.2	
Volume (vph)	162	233	20	16	254	62	45	101	36	60	65	157
Peak Hour Factor	0.82	0.82	0.82	0.93	0.93	0.93	0.81	0.81	0.81	0.91	0.91	0.91
Adj. Flow (vph)	198	284	24	17	273	67	56	125	44	66	71	173
Lane Group Flow (vph)	198	308	0	0	290	67	0	181	44	0	137	173
Turn Type	pm+pt			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phases	7	4		8	8	8	2	2	2	6	6	6
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	5.0	5.0	7.0	7.0	7.0
Minimum Split (s)	9.0	48.0		37.0	37.0	37.0	12.0	12.0	12.0	12.0	12.0	12.0
Total Split (s)	11.0	53.0	0.0	42.0	42.0	42.0	17.0	17.0	17.0	17.0	17.0	17.0
Total Split (%)	12%	59%	0%	47%	47%	47%	19%	19%	19%	19%	19%	19%
Maximum Green (s)	7.0	48.0		37.0	37.0	37.0	12.0	12.0	12.0	12.0	12.0	12.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)	26.0	22.4		14.0	14.0		17.6	17.6		17.6	17.6	
Actuated g/C Ratio	0.53	0.50		0.31	0.31		0.42	0.42		0.42	0.42	
v/c Ratio	0.34	0.33		0.51	0.12		0.33	0.06		0.36	0.22	
Uniform Delay, d1	7.4	7.6		14.7	0.6		10.2	0.2		10.4	0.0	
Delay	5.4	5.8		13.1	4.0		15.6	6.2		18.6	3.6	
LOS	A	A		B	A		B	A		B	A	
Approach Delay		5.6		11.4			13.8			10.2		

Canal at Main Existing AM Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	60	0		0	160		
Storage Lanes	1	1		0	1		
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Turning Speed (mph)	15	9		9	15		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	
Ped Bike Factor			0.99				
Frt		0.850	0.920				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	1583	3217	0	1770	1863	
Flt Permitted	0.950				0.434		
Satd. Flow (perm)	1770	1583	3217	0	808	1863	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		317	158				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Link Speed (mph)	30		30			30	
Link Distance (ft)	2430		3472			2064	
Travel Time (s)	55.2		78.9			46.9	
Volume (vph)	122	279	108	122	131	78	
Confl. Peds. (#/hr)				1			
Peak Hour Factor	0.88	0.88	0.77	0.77	0.84	0.84	
Adj. Flow (vph)	139	317	140	158	156	93	
Lane Group Flow (vph)	139	317	298	0	156	93	
Turn Type		Perm			pm+pt		
Protected Phases	4		2		1	6	9
Permitted Phases		4			6		
Minimum Split (s)	21.0	21.0	21.0		13.0	21.0	11.0
Total Split (s)	27.0	27.0	24.0	0.0	18.0	42.0	11.0
Total Split (%)	34%	34%	30%	0%	23%	53%	14%
Maximum Green (s)	22.0	22.0	19.0		15.0	37.0	6.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		0.0	2.0	2.0
Lead/Lag			Lag		Lead		
Lead-Lag Optimize?			Yes		Yes		
Walk Time (s)	5.0	5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0			0	
Act Effct Green (s)	23.0	23.0	20.0		38.0	38.0	
Actuated g/C Ratio	0.29	0.29	0.25		0.48	0.48	
v/c Ratio	0.27	0.47	0.32		0.28	0.11	
Uniform Delay, d1	22.0	0.0	11.1		12.1	11.6	
Delay	22.5	3.1	11.5		12.4	11.8	
LOS	C	A	B		B	B	
Approach Delay	9.0		11.5			12.2	
Approach LOS	A		B			B	
Queue Length 50th (ft)	53	0	27		43	25	
Queue Length 95th (ft)	97	50	44		72	46	
Internal Link Dist (ft)	2350		3392			1984	

Canal at Main Existing AM Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
50th Up Block Time (%)							
95th Up Block Time (%)							
Turn Bay Length (ft)	60				160		
50th Bay Block Time %							
95th Bay Block Time %	32%	4%					
Queuing Penalty (veh)	100	3					

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Pretimed
Maximum v/c Ratio:	0.47
Intersection Signal Delay:	10.5
Intersection LOS:	B
Intersection Capacity Utilization	40.3%
ICU Level of Service	A



Canal at Main Existing PM Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	60	0		0	160		
Storage Lanes	1	1		0	1		
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Turning Speed (mph)	15	9		9	15		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	
Frt		0.850	0.928				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	1583	3284	0	1770	1863	
Flt Permitted	0.950				0.432		
Satd. Flow (perm)	1770	1583	3284	0	805	1863	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		358	142				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Link Speed (mph)	30		30			30	
Link Distance (ft)	2430		3472			2064	
Travel Time (s)	55.2		78.9			46.9	
Volume (vph)	175	301	119	111	275	127	
Peak Hour Factor	0.84	0.84	0.78	0.78	0.92	0.92	
Adj. Flow (vph)	208	358	153	142	299	138	
Lane Group Flow (vph)	208	358	295	0	299	138	
Turn Type		Perm			pm+pt		
Protected Phases	4		2		1	6	9
Permitted Phases		4			6		
Minimum Split (s)	21.0	21.0	21.0		13.0	21.0	10.0
Total Split (s)	27.0	27.0	24.0	0.0	18.0	42.0	13.0
Total Split (%)	33%	33%	29%	0%	22%	51%	16%
Maximum Green (s)	22.0	22.0	19.0		15.0	37.0	9.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		0.0	2.0	1.0
Lead/Lag			Lag		Lead		
Lead-Lag Optimize?			Yes		Yes		
Walk Time (s)	5.0	5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0			0	
Act Effct Green (s)	23.0	23.0	20.0		38.0	38.0	
Actuated g/C Ratio	0.28	0.28	0.24		0.46	0.46	
v/c Ratio	0.42	0.51	0.32		0.56	0.16	
Uniform Delay, d1	24.0	0.0	12.8		14.2	12.7	
Delay	24.6	3.0	13.1		14.6	13.0	
LOS	C	A	B		B	B	
Approach Delay	11.0		13.1			14.1	
Approach LOS	B		B			B	
Queue Length 50th (ft)	87	0	31		95	39	
Queue Length 95th (ft)	137	44	49		154	72	
Internal Link Dist (ft)	2350		3392			1984	
50th Up Block Time (%)							
95th Up Block Time (%)							

Canal at Main Existing PM Peak

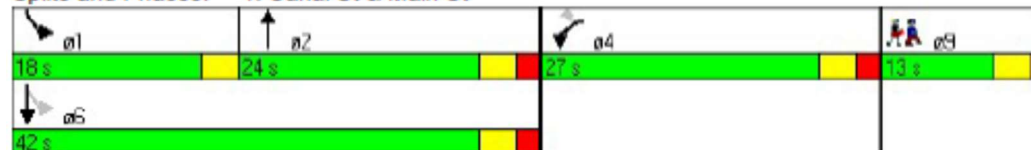


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Turn Bay Length (ft)	60			160			
50th Bay Block Time %	27%						
95th Bay Block Time %	44%	2%					5%
Queuing Penalty (veh)	254			3			

Intersection Summary

Area Type:	Other
Cycle Length:	82
Actuated Cycle Length:	82
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	65
Control Type:	Pretimed
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	12.5
Intersection LOS:	B
Intersection Capacity Utilization	46.9%
ICU Level of Service	A

Splits and Phases: 1: Canal St & Main St



Canal at Main Existing Sat Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø9
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	60	0		0	160		
Storage Lanes	1	1		0	1		
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Turning Speed (mph)	15	9		9	15		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	
Ped Bike Factor	1.00		0.99				
Fr _t		0.850	0.926				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	1583	3241	0	1770	1863	
Flt Permitted	0.950				0.406		
Satd. Flow (perm)	1765	1583	3241	0	756	1863	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		351	156				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Link Speed (mph)	30		30			30	
Link Distance (ft)	2430		3472			2064	
Travel Time (s)	55.2		78.9			46.9	
Volume (vph)	154	298	136	131	202	136	
Confl. Peds. (#/hr)	1			1			
Peak Hour Factor	0.85	0.85	0.84	0.84	0.93	0.93	
Adj. Flow (vph)	181	351	162	156	217	146	
Lane Group Flow (vph)	181	351	318	0	217	146	
Turn Type		Perm			pm+pt		
Protected Phases	4		2		1	6	9
Permitted Phases		4			6		
Minimum Split (s)	21.0	21.0	21.0		13.0	21.0	10.0
Total Split (s)	27.0	27.0	24.0	0.0	18.0	42.0	15.0
Total Split (%)	32%	32%	29%	0%	21%	50%	18%
Maximum Green (s)	22.0	22.0	19.0		15.0	37.0	10.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		0.0	2.0	2.0
Lead/Lag			Lag		Lead		
Lead-Lag Optimize?			Yes		Yes		
Walk Time (s)	5.0	5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0			0	
Act Effct Green (s)	23.0	23.0	20.0		38.0	38.0	
Actuated g/C Ratio	0.27	0.27	0.24		0.45	0.45	
v/c Ratio	0.37	0.51	0.36		0.42	0.17	
Uniform Delay, d ₁	24.7	0.0	13.1		14.3	13.7	
Delay	25.2	3.1	13.4		14.7	13.9	
LOS	C	A	B		B	B	
Approach Delay	10.6		13.4			14.4	
Approach LOS	B		B			B	
Queue Length 50th (ft)	77	0	34		69	44	
Queue Length 95th (ft)	126	47	60		116	80	
Internal Link Dist (ft)	2350		3392			1984	

Canal at Main Existing Sat Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	a9
50th Up Block Time (%)							
95th Up Block Time (%)							
Turn Bay Length (ft)	60				160		
50th Bay Block Time %	22%						
95th Bay Block Time %	41%	3%					
Queuing Penalty (veh)	221						

Intersection Summary

Area Type:	Other
Cycle Length:	84
Actuated Cycle Length:	84
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	65
Control Type:	Pretimed
Maximum v/c Ratio:	0.51
Intersection Signal Delay:	12.5
Intersection LOS:	B
Intersection Capacity Utilization	45.4%
ICU Level of Service	A

Splits and Phases: 1: Canal St & Main St

