APPENDIX

- Traffic Count Data
- Trip Generation Calculations
- Synchro Outputs

TRAFFIC COUNT DATA

National Data Surveying Services

Intersection Turning Movement Count

Location: Highland Ave/Chapel St & May St
City: Needham
Control: Signalized

Project ID: 24-430073-002
Date: 5/30/2024

Data - Total

NS/EW Streets:	Highland Ave/Chapel St					Highland Ave/Chapel St					May St					May St					NORTHBOUND2				
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND									
	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
7:00 AM	3	13	1	0	0	3	6	5	0	27	7	10	1	0	8	1	4	5	0	4	1	41	2	0	142
7:15 AM	0	16	3	0	0	2	19	22	0	32	13	23	8	0	3	2	28	7	0	7	0	36	1	2	224
7:30 AM	0	30	3	0	0	1	28	18	0	37	18	44	8	0	1	3	33	6	0	5	1	58	14	3	311
7:45 AM	3	29	5	0	0	5	28	20	0	40	27	49	9	0	2	10	41	15	0	4	1	65	11	2	370
8:00 AM	4	36	2	0	1	3	37	25	0	47	14	10	9	0	6	11	57	20	0	16	4	53	5	3	363
8:15 AM	2	61	4	0	1	5	24	18	0	47	19	19	7	0	3	4	18	7	0	10	4	67	5	0	325
8:30 AM	3	39	3	0	0	1	23	18	0	59	19	23	4	0	6	0	17	3	0	8	2	68	0	4	300
8:45 AM	2	29	2	0	0	2	20	22	0	55	15	13	6	0	9	6	14	7	0	12	6	52	9	6	287
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
TOTAL VOLUMES :	17	253	27	0	2	22	185	148	0	344	132	191	52	0	38	37	212	70	0	66	19	440	47	20	2322
APPROACH %'s :	5.69%	84.62%	9.03%	0.00%	0.67%	3.15%	26.47%	21.17%	0.00%	49.21%	31.96%	46.25%	12.59%	0.00%	9.20%	9.61%	55.06%	18.18%	0.00%	17.14%	3.61%	83.65%	8.94%	3.80%	
PEAK HR :	07:30 AM - 08:30 AM																								TOTAL
PEAK HR VOL :	9	156	16	0	2	14	117	81	0	171	78	123	33	0	17	28	149	48	0	35	16	243	35	8	1364
PEAK HR FACTOR :	0.563	0.639	0.500	0.000	0.500	0.700	0.790	0.810	0.000	0.910	0.722	0.627	0.917	0.000	0.708	0.636	0.654	0.600	0.000	0.547	0.625	0.907	0.625	0.667	0.925
			0.680					0.855					0.704					0.625							

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND									
	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
4:00 PM	3	37	8	0	2	11	55	19	0	83	23	28	22	0	9	5	32	10	0	4	6	47	9	1	414
4:15 PM	2	42	6	0	0	4	47	24	0	77	17	14	7	0	6	5	19	13	0	7	4	61	3	1	359
4:30 PM	1	48	8	0	0	4	44	28	0	72	15	15	7	0	8	3	16	3	0	8	5	42	7	3	337
4:45 PM	2	34	4	0	3	7	58	15	0	81	19	26	11	0	8	2	28	9	0	10	4	44	1	1	367
5:00 PM	3	45	9	0	1	15	60	43	0	77	13	29	3	0	4	2	30	6	0	9	2	50	5	1	407
5:15 PM	4	28	4	0	1	10	39	34	0	79	11	24	7	0	7	1	29	7	0	15	3	35	5	1	344
5:30 PM	5	33	6	0	1	6	40	34	0	84	17	22	5	0	2	4	35	4	0	7	3	45	4	2	359
5:45 PM	5	30	4	0	1	6	56	36	0	81	14	19	10	0	8	2	23	5	0	7	8	35	3	5	358
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
TOTAL VOLUMES :	25	297	49	0	9	63	399	233	0	634	129	177	72	0	52	24	212	57	0	67	35	359	37	15	2945
APPROACH %'s :	6.58%	78.16%	12.89%	0.00%	2.37%	4.74%	30.02%	17.53%	0.00%	47.71%	30.00%	41.16%	16.74%	0.00%	12.09%	6.67%	58.89%	15.83%	0.00%	18.61%	7.85%	80.49%	8.30%	3.36%	
PEAK HR :	04:45 PM - 05:45 PM																								TOTAL
PEAK HR VOL :	14	140	23	0	6	38	197	126	0	321	60	101	26	0	21	9	122	26	0	41	12	174	15	5	1477
PEAK HR FACTOR :	0.700	0.778	0.639	0.000	0.500	0.633	0.821	0.733	0.000	0.955	0.789	0.871	0.591	0.000	0.656	0.563	0.871	0.722	0.000	0.683	0.750	0.870	0.750	0.625	0.907
			0.789					0.874					0.813					0.952							

Explanation for extra leg movements

Movement entering the extra leg

ER2	Movements coming from EB on May St entering into the extra leg (Chapel St)
NU2	Movements coming from NB on Highland Ave entering into the extra leg (Chapel St)
WL2	Movements coming from WB on May St entering into the extra leg (Chapel St)
ST2	Movements coming from SB on Highland Ave entering into the extra leg (Chapel St)

Movements exiting the extra leg

N2L2	Movements exiting from extra leg (Chapel St) entering into May St WB
N2T2	Movements exiting from extra leg (Chapel St) entering into Highland Ave NB
N2R2	Movements exiting from extra leg (Chapel St) entering into May St EB
N2U2	Movements exiting from extra leg (Chapel St) entering into Highland Ave SB

National Data Surveying Services

Intersection Turning Movement Count

Location: Highland Ave/Chapel St & May St
City: Needham
Control: Signalized

Project ID: 24-430073-002
Date: 5/30/2024

Data - Cars

NS/EW Streets:	Highland Ave/Chapel St					Highland Ave/Chapel St					May St					May St									
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					NORTHBOUND2				
	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
7:00 AM	3	11	1	0	0	3	5	5	0	21	7	9	1	0	8	1	3	5	0	4	1	35	2	0	125
7:15 AM	0	14	3	0	0	2	18	21	0	30	13	23	8	0	3	2	23	7	0	7	0	32	1	2	209
7:30 AM	0	28	2	0	0	1	28	18	0	35	18	44	8	0	1	3	29	6	0	5	1	50	14	3	294
7:45 AM	3	28	9	0	0	4	27	20	0	38	27	45	9	0	2	10	40	15	0	4	1	64	10	2	358
8:00 AM	4	33	2	0	1	3	37	25	0	43	14	10	9	0	6	11	56	20	0	16	4	50	5	3	352
8:15 AM	2	61	4	0	1	5	22	18	0	44	19	19	7	0	2	4	18	7	0	10	4	61	5	0	313
8:30 AM	3	37	3	0	0	1	22	18	0	55	19	23	4	0	6	0	17	3	0	8	2	64	0	4	289
8:45 AM	2	28	2	0	0	2	18	22	0	52	15	13	6	0	9	6	14	7	0	11	6	44	9	6	272
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
TOTAL VOLUMES :	17	240	26	0	2	21	177	147	0	318	132	186	52	0	37	37	200	70	0	65	19	400	46	20	2212
APPROACH %'s :	5.96%	84.21%	9.12%	0.00%	0.70%	3.17%	26.70%	22.17%	0.00%	47.96%	32.43%	45.70%	12.78%	0.00%	9.09%	9.95%	53.76%	18.82%	0.00%	17.47%	3.92%	82.47%	9.48%	4.12%	
PEAK HR :	07:30 AM - 08:30 AM																								TOTAL
PEAK HR VOL :	9	150	17	0	2	13	114	81	0	160	78	118	33	0	11	28	143	48	0	35	10	225	34	8	1317
PEAK HR FACTOR :	0.563	0.615	0.472	0.000	0.500	0.650	0.770	0.810	0.000	0.909	0.722	0.656	0.917	0.000	0.458	0.636	0.638	0.600	0.000	0.547	0.625	0.879	0.607	0.667	0.920
			0.654					0.852					0.723					0.617							

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND									
	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
4:00 PM	3	36	8	0	2	11	55	18	0	82	23	28	21	0	9	5	30	10	0	4	6	45	7	1	404
4:15 PM	2	41	6	0	0	4	45	24	0	76	16	14	7	0	6	5	19	13	0	7	4	61	3	1	354
4:30 PM	1	46	8	0	0	4	42	28	0	71	15	14	7	0	8	3	16	3	0	7	5	41	7	3	329
4:45 PM	2	34	4	0	3	7	58	13	0	81	18	26	11	0	8	2	28	8	0	10	4	42	0	1	360
5:00 PM	3	45	9	0	1	15	60	43	0	77	13	28	3	0	4	2	30	6	0	9	2	49	5	1	405
5:15 PM	4	28	4	0	1	9	39	33	0	77	10	24	6	0	7	1	29	7	0	15	3	35	5	0	337
5:30 PM	5	33	5	0	1	6	40	34	0	83	17	22	5	0	2	4	35	4	0	7	3	44	4	2	356
5:45 PM	5	30	4	0	1	6	56	36	0	80	14	19	10	0	8	2	23	5	0	7	8	35	3	5	357
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
TOTAL VOLUMES :	25	293	48	0	9	62	395	229	0	627	126	175	70	0	52	24	210	56	0	66	35	352	34	14	2902
APPROACH %'s :	6.67%	78.13%	12.80%	0.00%	2.40%	4.72%	30.08%	17.44%	0.00%	47.75%	29.79%	41.37%	16.55%	0.00%	12.29%	6.74%	58.99%	15.73%	0.00%	18.54%	8.05%	80.92%	7.82%	3.22%	
PEAK HR :	04:45 PM - 05:45 PM																								TOTAL
PEAK HR VOL :	14	140	22	0	6	37	197	123	0	318	58	100	25	0	21	9	122	25	0	41	12	170	14	4	1458
PEAK HR FACTOR :	0.700	0.778	0.611	0.000	0.500	0.617	0.821	0.715	0.000	0.958	0.806	0.893	0.568	0.000	0.656	0.563	0.871	0.781	0.000	0.683	0.750	0.867	0.700	0.500	0.900
			0.784					0.865					0.810					0.947							

National Data Surveying Services

Intersection Turning Movement Count

Location: Highland Ave/Chapel St & May St
City: Needham
Control: Signalized

Project ID: 24-430073-002
Date: 5/30/2024

Data - HT

NS/EW Streets:	Highland Ave/Chapel St					Highland Ave/Chapel St					May St					May St									
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					NORTHBOUND2				
	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
7:00 AM	0	2	0	0	0	0	1	0	0	6	0	1	0	0	0	0	1	0	0	0	0	6	0	0	17
7:15 AM	0	2	0	0	0	0	1	1	0	2	0	0	0	0	0	0	5	0	0	0	0	4	0	0	15
7:30 AM	0	2	1	0	0	0	0	0	0	2	0	0	0	0	0	0	4	0	0	0	0	8	0	0	17
7:45 AM	0	1	0	0	0	1	1	0	0	2	0	4	0	0	0	0	1	0	0	0	0	1	1	0	12
8:00 AM	0	3	0	0	0	0	0	0	0	4	0	0	0	0	0	0	1	0	0	0	0	3	0	0	11
8:15 AM	0	0	0	0	0	0	2	0	0	3	0	0	0	0	1	0	0	0	0	0	0	6	0	0	12
8:30 AM	0	2	0	0	0	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	0	0	11
8:45 AM	0	1	0	0	0	0	2	0	0	3	0	0	0	0	0	0	0	0	0	1	0	8	0	0	15
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
TOTAL VOLUMES :	0	13	1	0	0	1	8	1	0	26	0	5	0	0	1	0	12	0	0	1	0	40	1	0	110
APPROACH %'s :	0.00%	92.86%	7.14%	0.00%	0.00%	2.78%	22.22%	2.78%	0.00%	72.22%	0.00%	83.33%	0.00%	0.00%	16.67%	0.00%	92.31%	0.00%	0.00%	7.69%	0.00%	97.56%	2.44%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																								TOTAL
PEAK HR VOL :	0	6	1	0	0	1	3	0	0	11	0	4	0	0	1	0	6	0	0	0	0	18	1	0	52
PEAK HR FACTOR :	0.000	0.500	0.250	0.000	0.000	0.250	0.375	0.000	0.000	0.688	0.000	0.250	0.000	0.000	0.250	0.000	0.375	0.000	0.000	0.000	0.000	0.563	0.250	0.000	0.765
			0.583					0.750					0.313					0.375							

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND									
	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
4:00 PM	0	1	0	0	0	0	0	1	0	1	0	0	1	0	0	0	2	0	0	0	0	2	2	0	10
4:15 PM	0	1	0	0	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
4:30 PM	0	2	0	0	0	0	2	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	0	0	8
4:45 PM	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	1	0	0	0	2	1	0	7
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
5:15 PM	0	0	0	0	0	1	0	1	0	2	1	0	1	0	0	0	0	0	0	0	0	0	0	1	7
5:30 PM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
TOTAL VOLUMES :	0	4	1	0	0	1	4	4	0	7	3	2	2	0	0	0	2	1	0	1	0	7	3	1	43
APPROACH %'s :	0.00%	80.00%	20.00%	0.00%	0.00%	6.25%	25.00%	25.00%	0.00%	43.75%	42.86%	28.57%	28.57%	0.00%	0.00%	0.00%	50.00%	25.00%	0.00%	25.00%	0.00%	63.64%	27.27%	9.09%	
PEAK HR :	04:45 PM - 05:45 PM																								TOTAL
PEAK HR VOL :	0	0	1	0	0	1	0	3	0	3	2	1	1	0	0	0	0	1	0	0	0	4	1	1	19
PEAK HR FACTOR :	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.375	0.000	0.375	0.500	0.250	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.500	0.250	0.250	0.679
			0.250					0.438					0.500					0.250							

National Data Surveying Services

Intersection Turning Movement Count

Location: Highland Ave/Chapel St & May St
City: Needham
Control: Signalized

Project ID: 24-430073-002
Date: 5/30/2024

Data - Bikes

NS/EW Streets:	Highland Ave/Chapel St					Highland Ave/Chapel St					May St					May St									
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					NORTHBOUND2				
	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :											100.00%	0.00%	0.00%	0.00%	0.00%										
PEAK HR :	07:30 AM - 08:30 AM																								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000 0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND									
	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2L2	N2T2	N2R2	N2U2	TOTAL
TOTAL VOLUMES :	0	3	0	0	0	0	1	0	0	0	0	1	0	0	0	0	2	0	0	1	0	0	0	0	8
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	66.67%	0.00%	0.00%	33.33%					
PEAK HR :	04:45 PM - 05:45 PM																								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	2	0	0	1	0	0	0	0	5
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000 0.250	0.000	0.000	0.000	0.250	0.000 0.250	0.000	0.000	0.000	0.500	0.000 0.750	0.000	0.250	0.000	0.000	0.000	0.000	0.625

National Data Surveying Services

Intersection Turning Movement Count

Location: Highland Ave/Chapel St & May St
City: Needham

Project ID: 24-430073-002
Date: 5/30/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Highland Ave/Chapel St		Highland Ave/Chapel St		May St		May St				
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		SOUTH LEG 2		
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
7:00 AM	0	0	0	2	2	0	0	1	0	2	7
7:15 AM	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	3	0	0	0	0	0	1	0	0	0	4
7:45 AM	0	0	0	0	1	1	0	0	0	0	2
8:00 AM	1	3	0	0	0	0	0	2	0	0	6
8:15 AM	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	1	0	0	0	0	1
8:45 AM	0	0	0	0	1	0	0	1	0	0	2
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
TOTAL VOLUMES :	4	3	0	2	4	2	1	4	0	2	22
APPROACH %'s :	57.14%	42.86%	0.00%	100.00%	66.67%	33.33%	20.00%	80.00%	0.00%	100.00%	
PEAK HR :	07:30 AM - 08:30 AM										TOTAL
PEAK HR VOL :	4	3	0	0	1	1	1	2	0	0	12
PEAK HR FACTOR :	0.333	0.250			0.250	0.250	0.250	0.250			0.500
	0.438				0.250		0.375				

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		SOUTH LEG 2		
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
4:00 PM	1	0	0	0	3	3	1	0	0	0	8
4:15 PM	1	0	0	0	2	2	0	0	0	0	5
4:30 PM	0	0	1	0	2	0	1	0	1	0	5
4:45 PM	2	0	0	0	3	3	0	1	0	0	9
5:00 PM	0	0	0	0	1	0	0	0	0	0	1
5:15 PM	2	0	0	0	1	0	2	3	0	0	8
5:30 PM	2	0	5	0	7	1	3	1	3	0	22
5:45 PM	0	0	0	0	2	1	3	0	0	0	6
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
TOTAL VOLUMES :	8	0	6	0	21	10	10	5	4	0	64
APPROACH %'s :	100.00%	0.00%	100.00%	0.00%	67.74%	32.26%	66.67%	33.33%	100.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM										TOTAL
PEAK HR VOL :	6	0	5	0	12	4	5	5	3	0	40
PEAK HR FACTOR :	0.750		0.250		0.429	0.333	0.417	0.417	0.250		0.455
	0.750		0.250		0.500		0.500		0.250		

Prepared by National Data & Surveying Services

Highland Ave/Chapel St & May St

Peak Hour Turning Movement Count

ID: 24-430073-002
City: Needham

Day: Thursday
Date: 5/30/2024

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	7:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	4:00 PM - 06:00 PM

SOUTHBOUND — Highland Ave/Chapel St

AM	81	117	14	0	282	AM
NOON	0	0	0	0	0	NOON
PM	126	197	38	0	226	PM

EASTBOUND — May St

AM	NOON	PM		
239	0	262	⇦	
0	0	0	↩	0
78	0	60	↱	0
122	0	101	→	1
33	0	26	↳	0
AM	NOON	PM		

WESTBOUND — May St

PM	NOON	AM		
26	0	48	↰	0
122	0	149	←	1
9	0	28	↰	0
0	0	0	↩	0
162	0	154	⇨	
PM	NOON	AM		

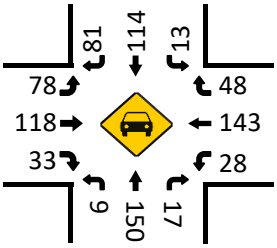
NORTHBOUND — Highland Ave/Chapel St

PM	232	0	14	140	23	PM
NOON	0	0	0	0	0	NOON
AM	178	0	9	156	18	AM

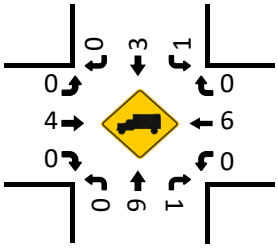
⇩	0	0	1	0
	↰	←	↑	↱

CONTROL			
Signalized			
TEV	853 AM	0 NOON	882 PM
PHF	0.93		0.91

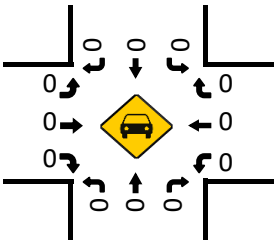
Cars (AM)



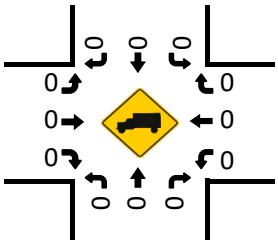
HT (AM)



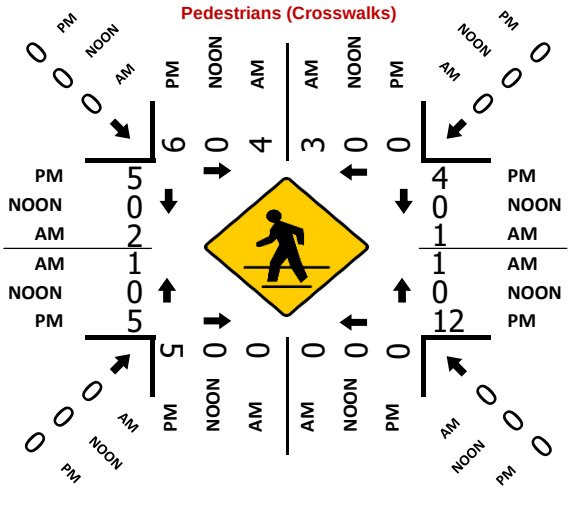
Cars (NOON)



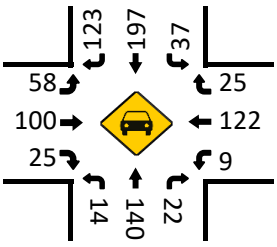
HT (NOON)



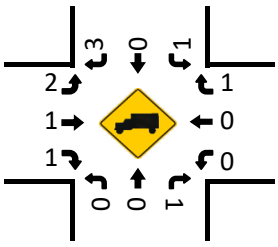
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Project ID: 24-430073-002
Location: Highland Ave/Chapel St & May St
City: Needham

Day: Thursday
Date: 5/30/2024

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Highland Ave/Chapel St Southbound						May St Westbound						Highland Ave/Chapel St Northbound						May St Eastbound						
Start Time	Rgt	Thru	Left	Uturn	Peds	App. Total	Rgt	Thru	Left	Uturn	Peds	App. Total	Rgt	Thru	Left	Uturn	Peds	App. Total	Rgt	Thru	Left	Uturn	Peds	App. Total	Int. Total
7:00 AM	5	6	3	0	0	14	5	4	1	0	2	10	1	13	3	0	2	17	1	10	7	0	1	18	59
7:15 AM	22	19	2	0	0	43	7	28	2	0	0	37	3	16	0	0	0	19	8	23	13	0	0	44	143
7:30 AM	18	28	1	0	3	47	6	33	3	0	0	42	3	30	0	0	0	33	8	44	18	0	1	70	192
7:45 AM	20	28	5	0	0	53	15	41	10	0	2	66	9	29	3	0	0	41	9	49	27	0	0	85	245
Total	65	81	11	0	3	157	33	106	16	0	4	155	16	88	6	0	2	110	26	126	65	0	2	217	639
8:00 AM	25	37	3	0	4	65	20	57	11	0	0	88	2	36	4	0	0	42	9	10	14	0	2	33	228
8:15 AM	18	24	5	0	0	47	7	18	4	0	0	29	4	61	2	0	0	67	7	19	19	0	0	45	188
8:30 AM	18	23	1	0	0	42	3	17	0	0	1	20	3	39	3	0	0	45	4	23	19	0	0	46	153
8:45 AM	22	20	2	0	0	44	7	14	6	0	1	27	2	29	2	0	0	33	6	13	15	0	1	34	138
Total	83	104	11	0	4	198	37	106	21	0	2	164	11	165	11	0	0	187	26	65	67	0	3	158	707
BREAK																									
4:00 PM	19	55	11	0	1	85	10	32	5	0	6	47	8	37	3	0	0	48	22	28	23	0	1	73	253
4:15 PM	24	47	4	0	1	75	13	19	5	0	4	37	6	42	2	0	0	50	7	14	17	0	0	38	200
4:30 PM	28	44	4	0	0	76	3	16	3	0	2	22	8	48	1	0	1	57	7	15	15	0	1	37	192
4:45 PM	15	58	7	0	2	80	9	28	2	0	6	39	4	34	2	0	0	40	11	26	19	0	1	56	215
Total	86	204	26	0	4	316	35	95	15	0	18	145	26	161	8	0	1	195	47	83	74	0	3	204	860
5:00 PM	43	60	15	0	0	118	6	30	2	0	1	38	9	45	3	0	0	57	3	29	13	0	0	45	258
5:15 PM	34	39	10	0	2	83	7	29	1	0	1	37	4	28	4	0	0	36	7	24	11	0	5	42	198
5:30 PM	34	40	6	0	2	80	4	35	4	0	8	43	6	33	5	0	5	44	5	22	17	0	4	44	211
5:45 PM	36	56	6	0	0	98	5	23	2	0	3	30	4	30	5	0	0	39	10	19	14	0	3	43	210
Total	147	195	37	0	4	379	22	117	9	0	13	148	23	136	17	0	5	176	25	94	55	0	12	174	877
Grand Total	381	584	85	0	15	1050	127	424	61	0	37	612	76	550	42	0	8	668	124	368	261	0	20	753	3083
Apprch %	36.3	55.6	8.1	0.0	1.4		20.8	69.3	10.0	0.0	6.0		11.4	82.3	6.3	0.0	1.2		16.5	48.9	34.7	0.0	2.7		
Total %	12.4	18.9	2.8	0.0	0.5	34.1	4.1	13.8	2.0	0.0	1.2	19.9	2.5	17.8	1.4	0.0	0.3	21.7	4.0	11.9	8.5	0.0	0.6	24.4	
Cars, PU, Vans	376	572	83	0		1031	126	410	61	0		597	74	533	42	0		649	122	361	258	0		741	3018
% Cars, PU, Vans	98.7	97.9	97.6	0.0		98.2	99.2	96.7	100.0	0.0		97.5	97.4	96.9	100.0	0.0		97.2	98.4	98.1	98.9	0.0		98.4	97.9
Heavy trucks	5	12	2	0		19	1	14	0	0		15	2	17	0	0		19	2	7	3	0		12	65
%Heavy trucks	1.3	2.1	2.4	0.0		1.8	0.8	3.3	0.0	0.0		2.5	2.6	3.1	0.0	0.0		2.8	1.6	1.9	1.1	0.0		1.6	2.1

Project ID: 24-430073-002
Location: Highland Ave/Chapel St & May St
City: Needham

PEAK HOURS

Day: Thursday
Date: 5/30/2024

AM

	Highland Ave/Chapel St Southbound					May St Westbound					Highland Ave/Chapel St Northbound					May St Eastbound					
Start Time	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	18	28	1	0	47	6	33	3	0	42	3	30	0	0	33	8	44	18	0	70	192
7:45 AM	20	28	5	0	53	15	41	10	0	66	9	29	3	0	41	9	49	27	0	85	245
8:00 AM	25	37	3	0	65	20	57	11	0	88	2	36	4	0	42	9	10	14	0	33	228
8:15 AM	18	24	5	0	47	7	18	4	0	29	4	61	2	0	67	7	19	19	0	45	188
Total Volume	81	117	14	0	212	48	149	28	0	225	18	156	9	0	183	33	122	78	0	233	853
% App. Total	38.2	55.2	6.6	0.0	100	21.3	66.2	12.4	0.0	100	9.8	85.2	4.9	0.0	100	14.2	52.4	33.5	0.0	100	
PHF					0.855					0.625					0.680					0.704	0.925
Cars, PU, Vans	81	114	13	0	208	48	143	28	0	219	17	150	9	0	176	33	118	78	0	229	832
% Cars, PU, Vans	100.0	97.4	92.9	0.0	98.1	100.0	96.0	100.0	0.0	97.3	94.4	96.2	100.0	0.0	96.2	100.0	96.7	100.0	0.0	98.3	97.5
Heavy trucks	0	3	1	0	4	0	6	0	0	6	1	6	0	0	7	0	4	0	0	4	21
%Heavy trucks	0.0	2.6	7.1	0.0	1.9	0.0	4.0	0.0	0.0	2.7	5.6	3.8	0.0	0.0	3.8	0.0	3.3	0.0	0.0	1.7	2.5

PM

	Highland Ave/Chapel St Southbound					May St Westbound					Highland Ave/Chapel St Northbound					May St Eastbound					
Start Time	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
4:45 PM	15	58	7	0	80	9	28	2	0	39	4	34	2	0	40	11	26	19	0	56	215
5:00 PM	43	60	15	0	118	6	30	2	0	38	9	45	3	0	57	3	29	13	0	45	258
5:15 PM	34	39	10	0	83	7	29	1	0	37	4	28	4	0	36	7	24	11	0	42	198
5:30 PM	34	40	6	0	80	4	35	4	0	43	6	33	5	0	44	5	22	17	0	44	211
Total Volume	126	197	38	0	361	26	122	9	0	157	23	140	14	0	177	26	101	60	0	187	882
% App. Total	34.9	54.6	10.5	0.0	100	16.6	77.7	5.7	0.0	100	13.0	79.1	7.9	0.0	100	13.9	54.0	32.1	0.0	100	
PHF					0.874					0.952					0.789					0.813	0.907
Cars, PU, Vans	123	197	37	0	357	25	122	9	0	156	22	140	14	0	176	25	100	58	0	183	872
% Cars, PU, Vans	97.6	100.0	97.4	0.0	98.9	96.2	100.0	100.0	0.0	99.4	95.7	100.0	100.0	0.0	99.4	96.2	99.0	96.7	0.0	97.9	98.9
Heavy trucks	3	0	1	0	4	1	0	0	0	1	1	0	0	0	1	1	1	2	0	4	10
%Heavy trucks	2.4	0.0	2.6	0.0	1.1	3.8	0.0	0.0	0.0	0.6	4.3	0.0	0.0	0.0	0.6	3.8	1.0	3.3	0.0	2.1	1.1

National Data Surveying Services

Intersection Turning Movement Count

Location: Garden St & May St
City: Needham
Control: 2-Way Stop(NB/SB)

Project ID: 24-430073-003
Date: 5/30/2024

Data - Total

NS/EW Streets:	Garden St				Garden St				May St				May St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	1	11	0	1	1	0	0	0	13	1	0	10	4	0	0	44
7:15 AM	0	2	21	0	2	0	1	0	0	25	0	0	41	8	0	0	100
7:30 AM	1	1	38	0	3	0	2	0	0	41	2	0	31	15	2	0	136
7:45 AM	1	0	38	0	2	1	0	0	0	36	2	0	36	28	1	0	145
8:00 AM	4	0	17	0	0	0	0	0	0	21	2	0	51	36	1	0	132
8:15 AM	1	1	29	0	4	0	2	0	1	18	1	0	24	16	1	0	98
8:30 AM	1	3	30	0	0	2	1	0	0	23	1	0	21	13	1	0	96
8:45 AM	0	0	20	0	0	0	0	0	1	28	1	0	28	14	1	0	93
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	10	8	204	0	12	4	6	0	2	205	10	0	242	134	7	0	844
APPROACH %'s :	4.50%	3.60%	91.89%	0.00%	54.55%	18.18%	27.27%	0.00%	0.92%	94.47%	4.61%	0.00%	63.19%	34.99%	1.83%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	6	3	114	0	7	1	3	0	0	123	6	0	159	87	4	0	513
PEAK HR FACTOR :	0.375	0.375	0.750	0.000	0.583	0.250	0.375	0.000	0.000	0.750	0.750	0.000	0.779	0.604	0.500	0.000	0.884
	0.769				0.550				0.750				0.710				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	0	34	0	0	1	0	0	0	44	0	0	32	27	1	0	144
4:15 PM	0	0	19	0	1	3	2	0	1	21	2	0	31	15	2	0	97
4:30 PM	4	0	28	0	1	0	0	0	0	20	3	0	33	16	1	0	106
4:45 PM	3	1	30	0	4	2	0	0	1	23	2	0	27	24	1	0	118
5:00 PM	6	1	25	0	1	0	2	0	0	26	3	0	59	21	2	0	146
5:15 PM	2	0	27	0	4	0	0	0	2	24	1	0	43	30	2	0	135
5:30 PM	2	3	18	0	0	0	0	0	1	26	3	0	52	26	0	0	131
5:45 PM	3	0	25	0	1	0	0	0	0	23	1	0	35	32	2	0	122
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	25	5	206	0	12	6	4	0	5	207	15	0	312	191	11	0	999
APPROACH %'s :	10.59%	2.12%	87.29%	0.00%	54.55%	27.27%	18.18%	0.00%	2.20%	91.19%	6.61%	0.00%	60.70%	37.16%	2.14%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	13	4	95	0	6	0	2	0	3	99	8	0	189	109	6	0	534
PEAK HR FACTOR :	0.542	0.333	0.880	0.000	0.375	0.000	0.250	0.000	0.375	0.952	0.667	0.000	0.801	0.852	0.750	0.000	0.914
	0.875				0.500				0.917				0.927				

National Data Surveying Services

Intersection Turning Movement Count

Location: Garden St & May St
City: Needham
Control: 2-Way Stop(NB/SB)

Project ID: 24-430073-003
Date: 5/30/2024

Data - Cars

NS/EW Streets:	Garden St				Garden St				May St				May St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	1	11	0	1	0	0	0	0	12	1	0	9	4	0	0	41
7:15 AM	0	2	21	0	2	0	1	0	0	25	0	0	35	8	0	0	94
7:30 AM	1	1	38	0	3	0	2	0	0	41	2	0	28	15	2	0	133
7:45 AM	1	0	36	0	2	1	0	0	0	35	2	0	35	28	1	0	141
8:00 AM	3	0	17	0	0	0	0	0	0	21	2	0	50	35	1	0	129
8:15 AM	1	1	29	0	4	0	2	0	1	18	1	0	24	16	1	0	98
8:30 AM	1	2	30	0	0	2	1	0	0	23	1	0	21	13	1	0	95
8:45 AM	0	0	20	0	0	0	0	0	1	28	1	0	28	14	1	0	93
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	9	7	202	0	12	3	6	0	2	203	10	0	230	133	7	0	824
APPROACH %'s :	4.13%	3.21%	92.66%	0.00%	57.14%	14.29%	28.57%	0.00%	0.93%	94.42%	4.65%	0.00%	62.16%	35.95%	1.89%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	5	3	112	0	7	1	3	0	0	122	6	0	148	86	4	0	497
PEAK HR FACTOR :	0.417	0.375	0.737	0.000	0.583	0.250	0.375	0.000	0.000	0.744	0.750	0.000	0.740	0.614	0.500	0.000	0.881
	0.750				0.550				0.744				0.692				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	0	34	0	0	1	0	0	0	42	0	0	30	26	1	0	139
4:15 PM	0	0	18	0	1	3	2	0	1	21	2	0	31	15	2	0	96
4:30 PM	4	0	28	0	1	0	0	0	0	20	3	0	33	16	1	0	106
4:45 PM	3	1	30	0	4	2	0	0	1	22	2	0	27	23	1	0	116
5:00 PM	6	1	24	0	1	0	2	0	0	25	3	0	59	21	2	0	144
5:15 PM	2	0	27	0	4	0	0	0	2	24	1	0	42	30	2	0	134
5:30 PM	2	2	18	0	0	0	0	0	1	26	3	0	52	26	0	0	130
5:45 PM	3	0	25	0	1	0	0	0	0	23	1	0	35	32	2	0	122
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	25	4	204	0	12	6	4	0	5	203	15	0	309	189	11	0	987
APPROACH %'s :	10.73%	1.72%	87.55%	0.00%	54.55%	27.27%	18.18%	0.00%	2.24%	91.03%	6.73%	0.00%	60.71%	37.13%	2.16%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	13	3	94	0	6	0	2	0	3	98	8	0	188	109	6	0	530
PEAK HR FACTOR :	0.542	0.375	0.870	0.000	0.375	0.000	0.250	0.000	0.375	0.942	0.667	0.000	0.797	0.852	0.750	0.000	0.920
	0.887				0.500				0.908				0.924				

National Data Surveying Services

Intersection Turning Movement Count

Location: Garden St & May St
City: Needham
Control: 2-Way Stop(NB/SB)

Project ID: 24-430073-003
Date: 5/30/2024

Data - HT

NS/EW Streets:	Garden St				Garden St				May St				May St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	3
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
7:45 AM	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	4
8:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	1	2	0	0	1	0	0	0	2	0	0	12	1	0	0	20
APPROACH %'s :	25.00%	25.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	92.31%	7.69%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	1	0	2	0	0	0	0	0	0	1	0	0	11	1	0	0	16
PEAK HR FACTOR :	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.458	0.250	0.000	0.000	0.667
	0.375				0.000				0.250				0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	5
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
5:00 PM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	2	0	0	0	0	0	0	4	0	0	3	2	0	0	12
APPROACH %'s :	0.00%	33.33%	66.67%	0.00%					0.00%	100.00%	0.00%	0.00%	60.00%	40.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	1	1	0	0	0	0	0	0	1	0	0	1	0	0	0	4
PEAK HR FACTOR :	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.500
	0.500								0.250				0.250				

National Data Surveying Services

Intersection Turning Movement Count

Location: Garden St & May St
City: Needham
Control: 2-Way Stop(NB/SB)

Project ID: 24-430073-003
Date: 5/30/2024

Data - Bikes

NS/EW Streets:	Garden St				Garden St				May St				May St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%													
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
	0.250																

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	3
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%									0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.500
	0.250												0.250				

National Data Surveying Services

Intersection Turning Movement Count

Location: Garden St & May St
City: Needham

Project ID: 24-430073-003
Date: 5/30/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Garden St		Garden St		May St		May St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	1	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	1	0	2	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	1	0	0	0	2
8:45 AM	0	0	0	0	1	1	0	0	2
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	1	2	1	2	2	0	0	9
APPROACH %'s :	50.00%	50.00%	66.67%	33.33%	50.00%	50.00%			
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	1	0	2	1	0	0	0	0	4
PEAK HR FACTOR :	0.250		0.250	0.250					0.333
	0.250		0.375						

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	1	0	1	0	0	0	0	1	3
4:15 PM	1	0	0	0	0	0	0	0	1
4:30 PM	0	2	1	1	0	1	2	1	8
4:45 PM	0	0	0	1	2	0	0	1	4
5:00 PM	1	1	0	0	0	0	0	0	2
5:15 PM	1	1	1	0	0	0	1	0	4
5:30 PM	0	1	0	0	0	1	1	0	3
5:45 PM	0	1	0	0	0	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	4	6	3	2	2	2	4	3	26
APPROACH %'s :	40.00%	60.00%	60.00%	40.00%	50.00%	50.00%	57.14%	42.86%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	2	4	1	0	0	1	2	0	10
PEAK HR FACTOR :	0.500	1.000	0.250			0.250	0.500		0.625
	0.750		0.250		0.250		0.500		

Prepared by National Data & Surveying Services

Garden St & May St

Peak Hour Turning Movement Count

ID: 24-430073-003
City: Needham

Day: Thursday
Date: 5/30/2024

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	4:00 PM - 06:00 PM

CONTROL: 2-Way Stop(NB/SB)

	AM	NOON	PM
TEV	513	0	534
PHF	0.88		0.91

SOUTHBOUND (Garden St)

	Left	Thru	Right	U-Turn	Total
AM	3	1	7	0	7
NOON	0	0	0	0	0
PM	2	0	6	0	13

NORTHBOUND (Garden St)

	Left	Thru	Right	U-Turn	Total
PM	197	0	13	4	95
NOON	0	0	0	0	0
AM	166	0	6	3	114

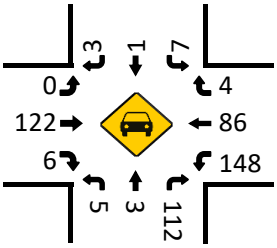
EASTBOUND (May St)

	Left	Thru	Right	U-Turn	Total
AM	96	0	124	0	0
NOON	0	0	0	1	1
PM	123	0	99	0	0
	0	0	0	0	0
	0	0	3	0	0
	6	0	8	0	0

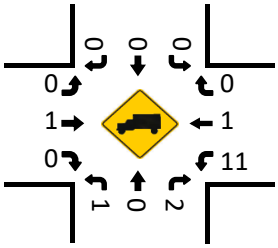
WESTBOUND (May St)

	Left	Thru	Right	U-Turn	Total
PM	6	0	4	0	0
NOON	109	0	87	1	1
AM	189	0	159	0	0
	0	0	0	0	0
	200	0	244	0	0

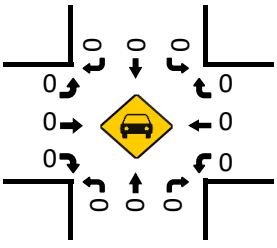
Cars (AM)



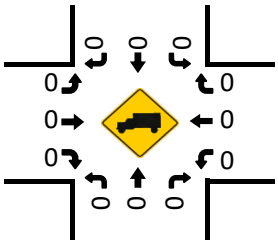
HT (AM)



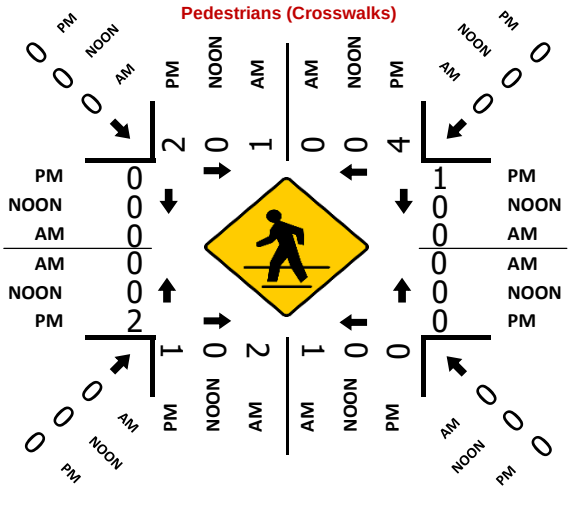
Cars (NOON)



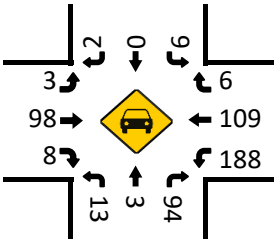
HT (NOON)



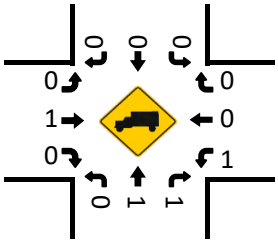
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Project ID: 24-430073-003
Location: Garden St & May St
City: Needham

Day: Thursday
Date: 5/30/2024

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Garden St Southbound						May St Westbound						Garden St Northbound						May St Eastbound						
Start Time	Rgt	Thru	Left	Uturn	Peds	App. Total	Rgt	Thru	Left	Uturn	Peds	App. Total	Rgt	Thru	Left	Uturn	Peds	App. Total	Rgt	Thru	Left	Uturn	Peds	App. Total	Int. Total
7:00 AM	0	1	1	0	0	2	0	4	10	0	1	14	11	1	2	0	0	14	1	13	0	0	0	14	44
7:15 AM	1	0	2	0	0	3	0	8	41	0	0	49	21	2	0	0	0	23	0	25	0	0	0	25	100
7:30 AM	2	0	3	0	0	5	2	15	31	0	0	48	38	1	1	0	1	40	2	41	0	0	0	43	136
7:45 AM	0	1	2	0	0	3	1	28	36	0	0	65	38	0	1	0	0	39	2	36	0	0	0	38	145
Total	3	2	8	0	0	13	3	55	118	0	1	176	108	4	4	0	1	116	5	115	0	0	0	120	425
8:00 AM	0	0	0	0	1	0	1	36	51	0	0	88	17	0	4	0	2	21	2	21	0	0	0	23	132
8:15 AM	2	0	4	0	0	6	1	16	24	0	0	41	29	1	1	0	0	31	1	18	1	0	0	20	98
8:30 AM	1	2	0	0	1	3	1	13	21	0	1	35	30	3	1	0	0	34	1	23	0	0	0	24	96
8:45 AM	0	0	0	0	0	0	1	14	28	0	2	43	20	0	0	0	0	20	1	28	1	0	0	30	93
Total	3	2	4	0	2	9	4	79	124	0	3	207	96	4	6	0	2	106	5	90	2	0	0	97	419
BREAK																									
4:00 PM	0	1	0	0	1	1	1	27	32	0	0	60	34	0	5	0	1	39	0	44	0	0	1	44	144
4:15 PM	2	3	1	0	1	6	2	15	31	0	0	48	19	0	0	0	0	19	2	21	1	0	0	24	97
4:30 PM	0	0	1	0	2	1	1	16	33	0	1	50	28	0	4	0	2	32	3	20	0	0	3	23	106
4:45 PM	0	2	4	0	0	6	1	24	27	0	2	52	30	1	3	0	1	34	2	23	1	0	1	26	118
Total	2	6	6	0	4	14	5	82	123	0	3	210	111	1	12	0	4	124	7	108	2	0	5	117	465
5:00 PM	2	0	1	0	2	3	2	21	59	0	0	82	25	1	6	0	0	32	3	26	0	0	0	29	146
5:15 PM	0	0	4	0	2	4	2	30	43	0	0	75	27	0	2	0	1	29	1	24	2	0	1	27	135
5:30 PM	0	0	0	0	1	0	0	26	52	0	1	78	18	3	2	0	0	23	3	26	1	0	1	30	131
5:45 PM	0	0	1	0	1	1	2	32	35	0	0	69	25	0	3	0	0	28	1	23	0	0	0	24	122
Total	2	0	6	0	6	8	6	109	189	0	1	304	95	4	13	0	1	112	8	99	3	0	2	110	534
Grand Total	10	10	24	0	12	44	18	325	554	0	8	897	410	13	35	0	8	458	25	412	7	0	7	444	1843
Apprch %	22.7	22.7	54.5	0.0	27.3		2.0	36.2	61.8	0.0	0.9		89.5	2.8	7.6	0.0	1.7		5.6	92.8	1.6	0.0	1.6		
Total %	0.5	0.5	1.3	0.0	0.7	2.4	1.0	17.6	30.1	0.0	0.4	48.7	22.2	0.7	1.9	0.0	0.4	24.9	1.4	22.4	0.4	0.0	0.4	24.1	
Cars, PU, Vans	10	9	24	0		43	18	322	539	0		879	406	11	34	0		451	25	406	7	0		438	1811
% Cars, PU, Vans	100.0	90.0	100.0	0.0		97.7	100.0	99.1	97.3	0.0		98.0	99.0	84.6	97.1	0.0		98.5	100.0	98.5	100.0	0.0		98.6	98.3
Heavy trucks	0	1	0	0		1	0	3	15	0		18	4	2	1	0		7	0	6	0	0		6	32
%Heavy trucks	0.0	10.0	0.0	0.0		2.3	0.0	0.9	2.7	0.0		2.0	1.0	15.4	2.9	0.0		1.5	0.0	1.5	0.0	0.0		1.4	1.7

Project ID: 24-430073-003
Location: Garden St & May St
City: Needham

PEAK HOURS

Day: Thursday
Date: 5/30/2024

AM

	Garden St Southbound					May St Westbound					Garden St Northbound					May St Eastbound					
Start Time	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
7:15 AM	1	0	2	0	3	0	8	41	0	49	21	2	0	0	23	0	25	0	0	25	100
7:30 AM	2	0	3	0	5	2	15	31	0	48	38	1	1	0	40	2	41	0	0	43	136
7:45 AM	0	1	2	0	3	1	28	36	0	65	38	0	1	0	39	2	36	0	0	38	145
8:00 AM	0	0	0	0	0	1	36	51	0	88	17	0	4	0	21	2	21	0	0	23	132
Total Volume	3	1	7	0	11	4	87	159	0	250	114	3	6	0	123	6	123	0	0	129	513
% App. Total	27.3	9.1	63.6	0.0	100	1.6	34.8	63.6	0.0	100	92.7	2.4	4.9	0.0	100	4.7	95.3	0.0	0.0	100	
PHF					0.550					0.710					0.769					0.750	0.884
Cars, PU, Vans	3	1	7	0	11	4	86	148	0	238	112	3	5	0	120	6	122	0	0	128	497
% Cars, PU, Vans	100.0	100.0	100.0	0.0	100.0	100.0	98.9	93.1	0.0	95.2	98.2	100.0	83.3	0.0	97.6	100.0	99.2	0.0	0.0	99.2	96.9
Heavy trucks	0	0	0	0	0	0	1	11	0	12	2	0	1	0	3	0	1	0	0	1	16
%Heavy trucks	0.0	0.0	0.0	0.0	0.0	0.0	1.1	6.9	0.0	4.8	1.8	0.0	16.7	0.0	2.4	0.0	0.8	0.0	0.0	0.8	3.1

PM

	Garden St Southbound					May St Westbound					Garden St Northbound					May St Eastbound					
Start Time	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
5:00 PM	2	0	1	0	3	2	21	59	0	82	25	1	6	0	32	3	26	0	0	29	146
5:15 PM	0	0	4	0	4	2	30	43	0	75	27	0	2	0	29	1	24	2	0	27	135
5:30 PM	0	0	0	0	0	0	26	52	0	78	18	3	2	0	23	3	26	1	0	30	131
5:45 PM	0	0	1	0	1	2	32	35	0	69	25	0	3	0	28	1	23	0	0	24	122
Total Volume	2	0	6	0	8	6	109	189	0	304	95	4	13	0	112	8	99	3	0	110	534
% App. Total	25.0	0.0	75.0	0.0	100	2.0	35.9	62.2	0.0	100	84.8	3.6	11.6	0.0	100	7.3	90.0	2.7	0.0	100	
PHF					0.500					0.927					0.875					0.917	0.914
Cars, PU, Vans	2	0	6	0	8	6	109	188	0	303	94	3	13	0	110	8	98	3	0	109	530
% Cars, PU, Vans	100.0	0.0	100.0	0.0	100.0	100.0	100.0	99.5	0.0	99.7	98.9	75.0	100.0	0.0	98.2	100.0	99.0	100.0	0.0	99.1	99.3
Heavy trucks	0	0	0	0	0	0	0	1	0	1	1	1	0	0	2	0	1	0	0	1	4
%Heavy trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.3	1.1	25.0	0.0	0.0	1.8	0.0	1.0	0.0	0.0	0.9	0.7

National Data Surveying Services

Intersection Turning Movement Count

Location: Hillside Ave & Rosemary St
City: Needham
Control: 1-Way Stop(SB)

Project ID: 24-430073-004
Date: 5/30/2024

Data - Total

NS/EW Streets:	Hillside Ave				Hillside Ave				Rosemary St				Rosemary St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	6	0	11	0	17	7	0	0	0	12	4	0	57
7:15 AM	0	0	0	0	11	0	22	0	15	16	0	0	0	8	8	0	80
7:30 AM	0	0	0	0	11	0	10	0	32	38	0	0	0	10	8	0	109
7:45 AM	0	0	0	0	21	0	7	0	43	60	0	0	0	16	16	0	163
8:00 AM	0	0	0	0	13	0	16	0	40	25	0	0	0	29	19	0	142
8:15 AM	0	0	0	0	17	0	15	0	44	11	0	0	0	13	16	0	116
8:30 AM	0	0	0	0	7	0	19	0	41	12	0	0	0	9	16	0	104
8:45 AM	0	0	0	0	13	0	12	0	25	27	0	0	0	14	16	0	107
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	99	0	112	0	257	196	0	0	0	111	103	0	878
APPROACH %'s :					46.92%	0.00%	53.08%	0.00%	56.73%	43.27%	0.00%	0.00%	0.00%	51.87%	48.13%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	62	0	48	0	159	134	0	0	0	68	59	0	530
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.738	0.000	0.750	0.000	0.903	0.558	0.000	0.000	0.000	0.586	0.776	0.000	0.813
					0.859				0.711				0.661				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	25	0	35	0	12	21	0	0	0	32	21	0	146
4:15 PM	0	0	0	0	19	0	26	0	10	34	0	0	0	30	20	0	139
4:30 PM	0	0	0	0	24	0	33	0	18	12	0	0	0	37	14	0	138
4:45 PM	0	0	0	0	17	0	55	0	23	16	0	0	0	30	27	0	168
5:00 PM	0	0	0	0	31	0	51	0	19	32	0	0	0	17	22	0	172
5:15 PM	0	0	0	0	12	0	45	0	20	16	0	0	0	23	14	0	130
5:30 PM	0	0	0	0	16	0	35	0	18	19	0	0	0	18	8	0	114
5:45 PM	0	0	0	0	21	0	40	0	10	17	0	0	0	27	10	0	125
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	165	0	320	0	130	167	0	0	0	214	136	0	1132
APPROACH %'s :					34.02%	0.00%	65.98%	0.00%	43.77%	56.23%	0.00%	0.00%	0.00%	61.14%	38.86%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	91	0	165	0	70	94	0	0	0	114	83	0	617
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.734	0.000	0.750	0.000	0.761	0.691	0.000	0.000	0.000	0.770	0.769	0.000	0.897
					0.780				0.804				0.864				

National Data Surveying Services

Intersection Turning Movement Count

Location: Hillside Ave & Rosemary St
City: Needham
Control: 1-Way Stop(SB)

Project ID: 24-430073-004
Date: 5/30/2024

Data - Cars

NS/EW Streets:	Hillside Ave				Hillside Ave				Rosemary St				Rosemary St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	6	0	11	0	16	7	0	0	0	11	4	0	55
7:15 AM	0	0	0	0	10	0	21	0	14	16	0	0	0	8	8	0	77
7:30 AM	0	0	0	0	10	0	10	0	31	38	0	0	0	10	8	0	107
7:45 AM	0	0	0	0	21	0	7	0	43	60	0	0	0	15	16	0	162
8:00 AM	0	0	0	0	13	0	15	0	40	25	0	0	0	29	18	0	140
8:15 AM	0	0	0	0	17	0	14	0	44	11	0	0	0	13	16	0	115
8:30 AM	0	0	0	0	6	0	19	0	40	12	0	0	0	8	15	0	100
8:45 AM	0	0	0	0	13	0	12	0	25	27	0	0	0	14	15	0	106
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	96	0	109	0	253	196	0	0	0	108	100	0	862
APPROACH %'s :					46.83%	0.00%	53.17%	0.00%	56.35%	43.65%	0.00%	0.00%	0.00%	51.92%	48.08%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	61	0	46	0	158	134	0	0	0	67	58	0	524
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.726	0.000	0.767	0.000	0.898	0.558	0.000	0.000	0.000	0.578	0.806	0.000	0.809
					0.863				0.709				0.665				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	25	0	35	0	12	21	0	0	0	31	21	0	145
4:15 PM	0	0	0	0	19	0	25	0	10	34	0	0	0	30	20	0	138
4:30 PM	0	0	0	0	23	0	32	0	18	12	0	0	0	37	14	0	136
4:45 PM	0	0	0	0	17	0	54	0	23	16	0	0	0	29	25	0	164
5:00 PM	0	0	0	0	31	0	51	0	19	32	0	0	0	17	21	0	171
5:15 PM	0	0	0	0	12	0	44	0	20	16	0	0	0	22	14	0	128
5:30 PM	0	0	0	0	16	0	35	0	18	19	0	0	0	18	8	0	114
5:45 PM	0	0	0	0	21	0	40	0	10	17	0	0	0	27	10	0	125
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	164	0	316	0	130	167	0	0	0	211	133	0	1121
APPROACH %'s :					34.17%	0.00%	65.83%	0.00%	43.77%	56.23%	0.00%	0.00%	0.00%	61.34%	38.66%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	90	0	162	0	70	94	0	0	0	113	80	0	609
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.726	0.000	0.750	0.000	0.761	0.691	0.000	0.000	0.000	0.764	0.800	0.000	0.890
					0.768				0.804				0.894				

National Data Surveying Services

Intersection Turning Movement Count

Location: Hillside Ave & Rosemary St
City: Needham
Control: 1-Way Stop(SB)

Project ID: 24-430073-004
Date: 5/30/2024

Data - HT

NS/EW Streets: Hillside Ave | Hillside Ave | Rosemary St | Rosemary St

AM

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
7:15 AM	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	3
7:30 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
8:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	0	4
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	3	0	3	0	4	0	0	0	0	3	3	0	16
APPROACH %'s :					50.00%	0.00%	50.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%	0.00%	
PEAK HR :	**07:30 AM - 08:30 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	2	0	1	0	0	0	0	1	1	0	6
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.750
					0.750				0.250				0.500				

PM

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	4	0	0	0	0	0	0	3	3	0	11
APPROACH %'s :					20.00%	0.00%	80.00%	0.00%					0.00%	50.00%	50.00%	0.00%	
PEAK HR :	**04:15 PM - 05:15 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	3	0	0	0	0	0	0	1	3	0	8
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.375	0.000	0.500
					0.500								0.333				

National Data Surveying Services

Intersection Turning Movement Count

Location: Hillside Ave & Rosemary St
City: Needham
Control: 1-Way Stop(SB)

Project ID: 24-430073-004
Date: 5/30/2024

Data - Bikes

NS/EW Streets:	Hillside Ave				Hillside Ave				Rosemary St				Rosemary St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	2	0	2	1	0	0	0	0	0	0	5
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	66.67%	33.33%	0.00%	0.00%					
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
							0.250				0.250						

National Data Surveying Services

Intersection Turning Movement Count

Location: Hillside Ave & Rosemary St
City: Needham

Project ID: 24-430073-004
Date: 5/30/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Hillside Ave		Hillside Ave		Rosemary St		Rosemary St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	1
7:30 AM	1	0	0	0	0	0	0	1	2
7:45 AM	2	0	0	0	0	0	0	0	2
8:00 AM	1	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	4	2	0	0	0	0	0	1	7
APPROACH %'s :	66.67%	33.33%					0.00%	100.00%	
PEAK HR :	**07:30 AM - 08:30 AM**								TOTAL
PEAK HR VOL :	4	0	0	0	0	0	0	1	5
PEAK HR FACTOR :	0.500							0.250	0.625
	0.500						0.250		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	4	2	0	0	0	0	0	0	6
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	2	0	0	2	0	0	0	4
4:45 PM	2	2	0	0	0	0	0	0	4
5:00 PM	1	2	0	0	0	0	0	1	4
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	7	0	0	2	0	0	0	9
5:45 PM	2	0	0	0	0	0	0	0	2
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	9	15	0	0	4	0	0	1	29
APPROACH %'s :	37.50%	62.50%			100.00%	0.00%	0.00%	100.00%	
PEAK HR :	**04:15 PM - 05:15 PM**								TOTAL
PEAK HR VOL :	3	6	0	0	2	0	0	1	12
PEAK HR FACTOR :	0.375	0.750			0.250			0.250	0.750
	0.563				0.250		0.250		

Prepared by National Data & Surveying Services

Hillside Ave & Rosemary St

Peak Hour Turning Movement Count

ID: 24-430073-004
City: Needham

Day: Thursday
Date: 5/30/2024

PEAK HOURS		COUNT PERIODS
AM	07:30 AM - 08:30 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:15 PM - 05:15 PM	4:00 PM - 06:00 PM

SOUTHBOUND (Hillside Ave)

	Right	Thru	Left	U-Turn	Exit
AM	48	0	62	0	218
NOON	0	0	0	0	0
PM	165	0	91	0	153
	0	1	0	0	

EASTBOUND (Rosemary St)

	AM	NOON	PM	
Exit	116	0	279	
U-Turn	0	0	0	0
Left	159	0	70	0
Thru	134	0	94	1
Right	0	0	0	0

WESTBOUND (Rosemary St)

		PM	NOON	AM
Left	0	83	0	59
Thru	1	114	0	68
Right	0	0	0	0
U-Turn	0	0	0	0
Exit		185	0	196

NORTHBOUND (Hillside Ave)

	Exit	U-Turn	Left	Thru	Right
		0	0	0	0
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	0	0	0	0	0

CONTROL

1-Way Stop(SB)

	AM	NOON	PM
TEV	530	0	617
PHF	0.81		0.90

Cars (AM)

Approach	Left	Thru	Right	U-Turn
Southbound	61	0	46	
Eastbound	158	134	0	
Westbound	58	67	0	
Northbound	0	0	0	0

Cars (NOON)

Approach	Left	Thru	Right	U-Turn
Southbound	0	0	0	
Eastbound	0	0	0	
Westbound	0	0	0	
Northbound	0	0	0	0

Cars (PM)

Approach	Left	Thru	Right	U-Turn
Southbound	90	0	162	
Eastbound	70	94	0	
Westbound	80	113	0	
Northbound	0	0	0	0

HT (AM)

Approach	Left	Thru	Right	U-Turn
Southbound	1	0	2	
Eastbound	1	0	0	
Westbound	1	1	0	
Northbound	0	0	0	0

HT (NOON)

Approach	Left	Thru	Right	U-Turn
Southbound	0	0	0	
Eastbound	0	0	0	
Westbound	0	0	0	
Northbound	0	0	0	0

HT (PM)

Approach	Left	Thru	Right	U-Turn
Southbound	1	0	3	
Eastbound	0	0	0	
Westbound	3	1	0	
Northbound	0	0	0	0

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North	Eastbound	4	0	3
North	Westbound	0	0	6
West	Southbound	1	0	1
West	Northbound	0	0	0
East	Southbound	0	0	0
East	Northbound	0	0	2
South	Eastbound	0	0	0
South	Westbound	0	0	0
NW diagonal		0	0	0
NE diagonal		0	0	0
SW diagonal		0	0	0
SE diagonal		0	0	0

Project ID: 24-430073-004
Location: Hillside Ave & Rosemary St
City: Needham

Day: Thursday
Date: 5/30/2024

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Hillside Ave Southbound						Rosemary St Westbound						Hillside Ave Northbound						Rosemary St Eastbound						
Start Time	Rgt	Thru	Left	Uturn	Peds	App. Total	Rgt	Thru	Left	Uturn	Peds	App. Total	Rgt	Thru	Left	Uturn	Peds	App. Total	Rgt	Thru	Left	Uturn	Peds	App. Total	Int. Total
7:00 AM	11	0	6	0	0	17	4	12	0	0	0	16	0	0	0	0	0	0	0	7	17	0	0	24	57
7:15 AM	22	0	11	0	1	33	8	8	0	0	0	16	0	0	0	0	0	0	0	16	15	0	0	31	80
7:30 AM	10	0	11	0	1	21	8	10	0	0	0	18	0	0	0	0	0	0	0	38	32	0	1	70	109
7:45 AM	7	0	21	0	2	28	16	16	0	0	0	32	0	0	0	0	0	0	0	60	43	0	0	103	163
Total	50	0	49	0	4	99	36	46	0	0	0	82	0	0	0	0	0	0	0	121	107	0	1	228	409
8:00 AM	16	0	13	0	1	29	19	29	0	0	0	48	0	0	0	0	0	0	0	25	40	0	0	65	142
8:15 AM	15	0	17	0	0	32	16	13	0	0	0	29	0	0	0	0	0	0	0	11	44	0	0	55	116
8:30 AM	19	0	7	0	0	26	16	9	0	0	0	25	0	0	0	0	0	0	0	12	41	0	0	53	104
8:45 AM	12	0	13	0	1	25	16	14	0	0	0	30	0	0	0	0	0	0	0	27	25	0	0	52	107
Total	62	0	50	0	2	112	67	65	0	0	0	132	0	0	0	0	0	0	0	75	150	0	0	225	469
BREAK																									
4:00 PM	35	0	25	0	6	60	21	32	0	0	0	53	0	0	0	0	0	0	0	21	12	0	0	33	146
4:15 PM	26	0	19	0	0	45	20	30	0	0	0	50	0	0	0	0	0	0	0	34	10	0	0	44	139
4:30 PM	33	0	24	0	2	57	14	37	0	0	2	51	0	0	0	0	0	0	0	12	18	0	0	30	138
4:45 PM	55	0	17	0	4	72	27	30	0	0	0	57	0	0	0	0	0	0	0	16	23	0	0	39	168
Total	149	0	85	0	12	234	82	129	0	0	2	211	0	0	0	0	0	0	0	83	63	0	0	146	591
5:00 PM	51	0	31	0	3	82	22	17	0	0	0	39	0	0	0	0	0	0	0	32	19	0	1	51	172
5:15 PM	45	0	12	0	0	57	14	23	0	0	0	37	0	0	0	0	0	0	0	16	20	0	0	36	130
5:30 PM	35	0	16	0	7	51	8	18	0	0	2	26	0	0	0	0	0	0	0	19	18	0	0	37	114
5:45 PM	40	0	21	0	2	61	10	27	0	0	0	37	0	0	0	0	0	0	0	17	10	0	0	27	125
Total	171	0	80	0	12	251	54	85	0	0	2	139	0	0	0	0	0	0	0	84	67	0	1	151	541
Grand Total	432	0	264	0	30	696	239	325	0	0	4	564	0	0	0	0	0	0	0	363	387	0	2	750	2010
Apprch %	62.1	0.0	37.9	0.0	4.3		42.4	57.6	0.0	0.0	0.7		0.0	0.0	0.0	0.0	0.0		0.0	48.4	51.6	0.0	0.3		
Total %	21.5	0.0	13.1	0.0	1.5	34.6	11.9	16.2	0.0	0.0	0.2	28.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.1	19.3	0.0	0.1	37.3	
Cars, PU, Vans	425	0	260	0		685	233	319	0	0		552	0	0	0	0		0	0	363	383	0		746	1983
% Cars, PU, Vans	98.4	0.0	98.5	0.0		98.4	97.5	98.2	0.0	0.0		97.9	0.0	0.0	0.0	0.0		0.0	0.0	100.0	99.0	0.0		99.5	98.7
Heavy trucks	7	0	4	0		11	6	6	0	0		12	0	0	0	0		0	0	0	4	0		4	27
%Heavy trucks	1.6	0.0	1.5	0.0		1.6	2.5	1.8	0.0	0.0		2.1	0.0	0.0	0.0	0.0		0.0	0.0	0.0	1.0	0.0		0.5	1.3

Project ID: 24-430073-004
Location: Hillside Ave & Rosemary St
City: Needham

PEAK HOURS

Day: Thursday
Date: 5/30/2024

AM

	Hillside Ave Southbound					Rosemary St Westbound					Hillside Ave Northbound					Rosemary St Eastbound					
Start Time	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	10	0	11	0	21	8	10	0	0	18	0	0	0	0	0	0	38	32	0	70	109
7:45 AM	7	0	21	0	28	16	16	0	0	32	0	0	0	0	0	0	60	43	0	103	163
8:00 AM	16	0	13	0	29	19	29	0	0	48	0	0	0	0	0	0	25	40	0	65	142
8:15 AM	15	0	17	0	32	16	13	0	0	29	0	0	0	0	0	0	11	44	0	55	116
Total Volume	48	0	62	0	110	59	68	0	0	127	0	0	0	0	0	0	134	159	0	293	530
% App. Total	43.6	0.0	56.4	0.0	100	46.5	53.5	0.0	0.0	100	0.0	0.0	0.0	0.0	0	0.0	45.7	54.3	0.0	100	
PHF					0.859					0.661										0.711	0.813
Cars, PU, Vans	46	0	61	0	107	58	67	0	0	125	0	0	0	0	0	0	134	158	0	292	524
% Cars, PU, Vans	95.8	0.0	98.4	0.0	97.3	98.3	98.5	0.0	0.0	98.4	0.0	0.0	0.0	0.0	0.0	0.0	100.0	99.4	0.0	99.7	98.9
Heavy trucks	2	0	1	0	3	1	1	0	0	2	0	0	0	0	0	0	0	1	0	1	6
%Heavy trucks	4.2	0.0	1.6	0.0	2.7	1.7	1.5	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.3	1.1

PM

	Hillside Ave Southbound					Rosemary St Westbound					Hillside Ave Northbound					Rosemary St Eastbound					
Start Time	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
4:15 PM	26	0	19	0	45	20	30	0	0	50	0	0	0	0	0	0	34	10	0	44	139
4:30 PM	33	0	24	0	57	14	37	0	0	51	0	0	0	0	0	0	12	18	0	30	138
4:45 PM	55	0	17	0	72	27	30	0	0	57	0	0	0	0	0	0	16	23	0	39	168
5:00 PM	51	0	31	0	82	22	17	0	0	39	0	0	0	0	0	0	32	19	0	51	172
Total Volume	165	0	91	0	256	83	114	0	0	197	0	0	0	0	0	0	94	70	0	164	617
% App. Total	64.5	0.0	35.5	0.0	100	42.1	57.9	0.0	0.0	100	0.0	0.0	0.0	0.0	0	0.0	57.3	42.7	0.0	100	
PHF					0.780					0.864										0.804	0.897
Cars, PU, Vans	162	0	90	0	252	80	113	0	0	193	0	0	0	0	0	0	94	70	0	164	609
% Cars, PU, Vans	98.2	0.0	98.9	0.0	98.4	96.4	99.1	0.0	0.0	98.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	100.0	98.7
Heavy trucks	3	0	1	0	4	3	1	0	0	4	0	0	0	0	0	0	0	0	0	0	8
%Heavy trucks	1.8	0.0	1.1	0.0	1.6	3.6	0.9	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3

National Data Surveying Services

Intersection Turning Movement Count

Location: Hillside Ave & Hunnewell St
City: Needham
Control: 2-Way Stop(NB/SB)

Project ID: 24-430073-005
Date: 5/30/2024

Data - Total

NS/EW Streets:	Hillside Ave				Hillside Ave				Hunnewell St				Hunnewell St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	9	6	0	3	2	0	0	3	12	3	0	5	15	1	0	63
7:15 AM	6	7	3	0	3	12	0	0	0	19	8	0	7	15	6	0	86
7:30 AM	4	16	2	0	5	9	1	0	2	37	2	0	3	37	5	0	123
7:45 AM	12	21	4	0	10	15	3	0	4	31	6	0	4	39	9	0	158
8:00 AM	13	13	7	0	6	9	4	0	6	22	10	0	6	48	11	0	155
8:15 AM	6	31	6	0	2	13	1	0	4	31	7	0	8	45	4	0	158
8:30 AM	9	7	5	0	2	8	5	0	1	21	5	0	5	32	8	0	108
8:45 AM	9	7	3	0	1	13	3	0	2	25	5	0	8	24	5	0	105
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	63	111	36	0	32	81	17	0	22	198	46	0	46	255	49	0	956
APPROACH %'s :	30.00%	52.86%	17.14%	0.00%	24.62%	62.31%	13.08%	0.00%	8.27%	74.44%	17.29%	0.00%	13.14%	72.86%	14.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	35	81	19	0	23	46	9	0	16	121	25	0	21	169	29	0	594
PEAK HR FACTOR :	0.673	0.653	0.679	0.000	0.575	0.767	0.563	0.000	0.667	0.818	0.625	0.000	0.656	0.880	0.659	0.000	0.940
	0.785				0.696				0.964				0.842				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	21	8	0	2	8	2	0	1	33	14	0	11	20	3	0	126
4:15 PM	5	13	1	0	1	10	2	0	1	30	7	0	4	21	7	0	102
4:30 PM	7	16	5	0	5	14	1	0	3	25	9	0	1	28	8	0	122
4:45 PM	6	17	1	0	3	6	3	0	2	27	16	0	10	20	7	0	118
5:00 PM	5	15	6	0	1	5	2	0	2	32	18	0	4	30	9	0	129
5:15 PM	10	10	6	0	4	7	4	0	5	32	11	0	7	40	10	0	146
5:30 PM	11	14	5	0	6	14	3	0	4	40	21	0	6	27	8	0	159
5:45 PM	5	25	4	0	6	13	2	0	1	48	9	0	10	39	8	0	170
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	52	131	36	0	28	77	19	0	19	267	105	0	53	225	60	0	1072
APPROACH %'s :	23.74%	59.82%	16.44%	0.00%	22.58%	62.10%	15.32%	0.00%	4.86%	68.29%	26.85%	0.00%	15.68%	66.57%	17.75%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	31	64	21	0	17	39	11	0	12	152	59	0	27	136	35	0	604
PEAK HR FACTOR :	0.705	0.640	0.875	0.000	0.708	0.696	0.688	0.000	0.600	0.792	0.702	0.000	0.675	0.850	0.875	0.000	0.888
	0.853				0.728				0.858				0.868				

National Data Surveying Services

Intersection Turning Movement Count

Location: Hillside Ave & Hunnewell St
City: Needham
Control: 2-Way Stop(NB/SB)

Project ID: 24-430073-005
Date: 5/30/2024

Data - Cars

NS/EW Streets:	Hillside Ave				Hillside Ave				Hunnewell St				Hunnewell St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	9	6	0	1	2	0	0	3	10	3	0	5	15	1	0	59
7:15 AM	6	7	2	0	2	12	0	0	0	19	7	0	7	15	4	0	81
7:30 AM	4	14	2	0	5	9	1	0	2	37	2	0	3	37	5	0	121
7:45 AM	12	21	3	0	10	15	2	0	4	31	6	0	4	38	8	0	154
8:00 AM	13	13	7	0	5	9	4	0	6	22	9	0	6	48	10	0	152
8:15 AM	6	31	5	0	2	12	1	0	4	31	7	0	7	45	4	0	155
8:30 AM	9	7	5	0	2	8	5	0	1	20	4	0	5	31	8	0	105
8:45 AM	9	6	3	0	0	13	3	0	2	25	5	0	8	23	5	0	102
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	63	108	33	0	27	80	16	0	22	195	43	0	45	252	45	0	929
APPROACH %'s :	30.88%	52.94%	16.18%	0.00%	21.95%	65.04%	13.01%	0.00%	8.46%	75.00%	16.54%	0.00%	13.16%	73.68%	13.16%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	35	79	17	0	22	45	8	0	16	121	24	0	20	168	27	0	582
PEAK HR FACTOR :	0.673	0.637	0.607	0.000	0.550	0.750	0.500	0.000	0.667	0.818	0.667	0.000	0.714	0.875	0.675	0.000	0.939
	0.780				0.694				0.958				0.840				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	21	8	0	2	8	2	0	1	31	14	0	11	20	2	0	123
4:15 PM	5	13	1	0	1	10	2	0	1	28	7	0	4	21	7	0	100
4:30 PM	6	16	4	0	4	14	1	0	3	24	8	0	1	28	7	0	116
4:45 PM	6	16	1	0	3	6	3	0	2	27	16	0	10	20	6	0	116
5:00 PM	5	15	6	0	1	5	2	0	2	31	18	0	4	30	9	0	128
5:15 PM	10	10	6	0	3	7	4	0	5	32	11	0	7	40	10	0	145
5:30 PM	10	14	5	0	6	14	3	0	4	40	21	0	5	27	8	0	157
5:45 PM	5	25	4	0	5	13	1	0	1	48	9	0	10	38	7	0	166
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	50	130	35	0	25	77	18	0	19	261	104	0	52	224	56	0	1051
APPROACH %'s :	23.26%	60.47%	16.28%	0.00%	20.83%	64.17%	15.00%	0.00%	4.95%	67.97%	27.08%	0.00%	15.66%	67.47%	16.87%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	30	64	21	0	15	39	10	0	12	151	59	0	26	135	34	0	596
PEAK HR FACTOR :	0.750	0.640	0.875	0.000	0.625	0.696	0.625	0.000	0.600	0.786	0.702	0.000	0.650	0.844	0.850	0.000	0.898
	0.846				0.696				0.854				0.855				

National Data Surveying Services

Intersection Turning Movement Count

Location: Hillside Ave & Hunnewell St
City: Needham
Control: 2-Way Stop(NB/SB)

Project ID: 24-430073-005
Date: 5/30/2024

Data - HT

NS/EW Streets:	Hillside Ave				Hillside Ave				Hunnewell St				Hunnewell St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	4
7:15 AM	0	0	1	0	1	0	0	0	0	0	1	0	0	0	2	0	5
7:30 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	1	1	0	4
8:00 AM	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	3
8:15 AM	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	3
8:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	3	3	0	5	1	1	0	0	3	3	0	1	3	4	0	27
APPROACH %'s :	0.00%	50.00%	50.00%	0.00%	71.43%	14.29%	14.29%	0.00%	0.00%	50.00%	50.00%	0.00%	12.50%	37.50%	50.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	2	2	0	1	1	1	0	0	0	1	0	1	1	2	0	12
PEAK HR FACTOR :	0.000	0.250	0.500	0.000	0.250	0.250	0.250	0.000	0.000	0.000	0.250	0.000	0.250	0.250	0.500	0.000	0.750
		0.500				0.750				0.250				0.500			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
4:30 PM	1	0	1	0	1	0	0	0	0	1	1	0	0	0	1	0	6
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
5:45 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	1	1	0	3	0	1	0	0	6	1	0	1	1	4	0	21
APPROACH %'s :	50.00%	25.00%	25.00%	0.00%	75.00%	0.00%	25.00%	0.00%	0.00%	85.71%	14.29%	0.00%	16.67%	16.67%	66.67%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	1	0	0	0	2	0	1	0	0	1	0	0	1	1	1	0	8
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.500	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.250	0.250	0.250	0.000	0.500
		0.250				0.375				0.250				0.375			

National Data Surveying Services

Intersection Turning Movement Count

Location: Hillside Ave & Hunnewell St
City: Needham
Control: 2-Way Stop(NB/SB)

Project ID: 24-430073-005
Date: 5/30/2024

Data - Bikes

NS/EW Streets:	Hillside Ave				Hillside Ave				Hunnewell St				Hunnewell St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	2	0	0	0	0	0	0	0	2	0	0	5
APPROACH %'s :					33.33%	66.67%	0.00%	0.00%					0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.375
					0.250								0.250				

National Data Surveying Services

Intersection Turning Movement Count

Location: Hillside Ave & Hunnewell St
City: Needham

Project ID: 24-430073-005
Date: 5/30/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Hillside Ave		Hillside Ave		Hunnewell St		Hunnewell St				
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		SCRAMBLE (NE/SW)		
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	1	0	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	3	0	0	0	0	3
APPROACH %'s :					0.00%	100.00%					
PEAK HR :	07:30 AM - 08:30 AM										TOTAL
PEAK HR VOL :	0	0	0	0	0	2	0	0	0	0	2
PEAK HR FACTOR :						0.500					0.500
					0.500						

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		SCRAMBLE (NE/SW)		
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	1	0	0	0	0	0	0	0	1
4:15 PM	0	2	0	1	0	1	0	0	0	1	5
4:30 PM	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	3	1	0	0	0	0	4
5:00 PM	0	1	2	1	0	1	0	0	0	0	5
5:15 PM	0	0	2	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	2	0	0	0	0	0	2
5:45 PM	0	0	0	1	0	0	0	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	3	5	3	5	3	0	0	0	1	20
APPROACH %'s :	0.00%	100.00%	62.50%	37.50%	62.50%	37.50%			0.00%	100.00%	
PEAK HR :	05:00 PM - 06:00 PM										TOTAL
PEAK HR VOL :	0	1	4	2	2	1	0	0	0	0	10
PEAK HR FACTOR :		0.250	0.500	0.500	0.250	0.250					0.500
	0.250		0.500		0.375						

Prepared by National Data & Surveying Services

Hillside Ave & Hunnewell St

Peak Hour Turning Movement Count

ID: 24-430073-005
City: Needham

Day: Thursday
Date: 5/30/2024

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS

AM	7:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 06:00 PM

CONTROL: 2-Way Stop(NB/SB)

	AM	NOON	PM
TEV	594	0	604
PHF	0.94		0.89

SOUTHBOUND (Hillside Ave)

	Left	Thru	Right	U-Turn	Total
AM	9	46	23	0	126
NOON	0	0	0	0	0
PM	11	39	17	0	111

EASTBOUND (Hunnewell St)

	Left	Thru	Right	U-Turn	Total
AM	213	0	178	0	391
NOON	0	0	0	0	0
PM	121	0	152	1	274

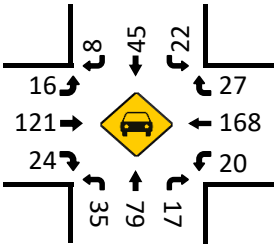
WESTBOUND (Hunnewell St)

	Left	Thru	Right	U-Turn	Total
PM	35	0	29	0	64
NOON	136	0	169	1	306
AM	27	0	21	0	48

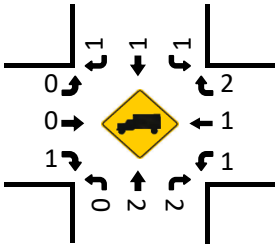
NORTHBOUND (Hillside Ave)

	Left	Thru	Right	U-Turn	Total
PM	125	0	31	64	21	0	241
NOON	0	0	0	0	0	0	0
AM	92	0	35	81	19	0	227

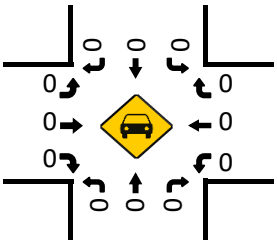
Cars (AM)



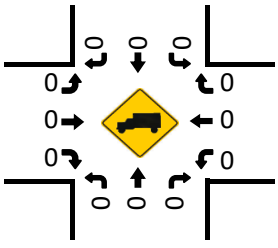
HT (AM)



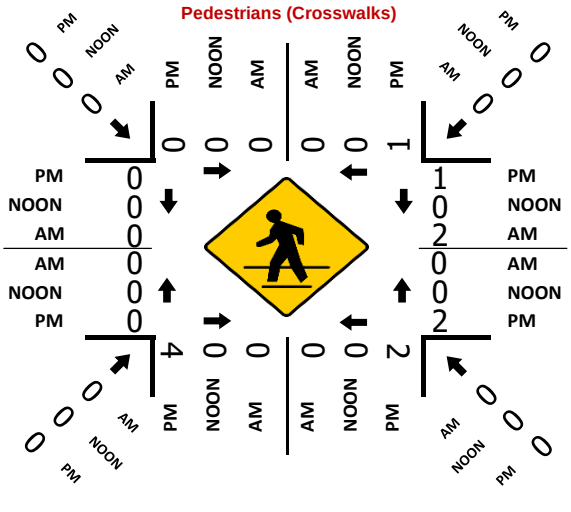
Cars (NOON)



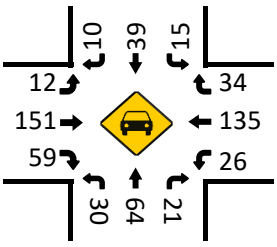
HT (NOON)



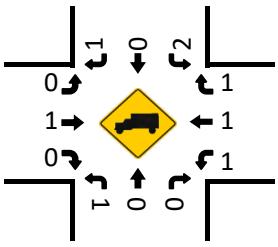
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Project ID: 24-430073-005
Location: Hillside Ave & Hunnewell St
City: Needham

Day: Thursday
Date: 5/30/2024

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Hillside Ave Northbound						Hillside Ave Southbound						Hunnewell St Eastbound						Hunnewell St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
7:00 AM	4	9	6	0	0	19	3	2	0	0	0	5	3	12	3	0	0	18	5	15	1	0	0	21	63
7:15 AM	6	7	3	0	0	16	3	12	0	0	0	15	0	19	8	0	0	27	7	15	6	0	0	28	86
7:30 AM	4	16	2	0	0	22	5	9	1	0	0	15	2	37	2	0	0	41	3	37	5	0	0	45	123
7:45 AM	12	21	4	0	0	37	10	15	3	0	0	28	4	31	6	0	0	41	4	39	9	0	1	52	158
Total	26	53	15	0	0	94	21	38	4	0	0	63	9	99	19	0	0	127	19	106	21	0	1	146	430
8:00 AM	13	13	7	0	0	33	6	9	4	0	0	19	6	22	10	0	0	38	6	48	11	0	0	65	155
8:15 AM	6	31	6	0	0	43	2	13	1	0	0	16	4	31	7	0	0	42	8	45	4	0	1	57	158
8:30 AM	9	7	5	0	0	21	2	8	5	0	0	15	1	21	5	0	0	27	5	32	8	0	0	45	108
8:45 AM	9	7	3	0	0	19	1	13	3	0	0	17	2	25	5	0	0	32	8	24	5	0	1	37	105
Total	37	58	21	0	0	116	11	43	13	0	0	67	13	99	27	0	0	139	27	149	28	0	2	204	526
BREAK																									
4:00 PM	3	21	8	0	1	32	2	8	2	0	0	12	1	33	14	0	0	48	11	20	3	0	0	34	126
4:15 PM	5	13	1	0	1	19	1	10	2	0	2	13	1	30	7	0	0	38	4	21	7	0	1	32	102
4:30 PM	7	16	5	0	0	28	5	14	1	0	0	20	3	25	9	0	0	37	1	28	8	0	0	37	122
4:45 PM	6	17	1	0	0	24	3	6	3	0	0	12	2	27	16	0	0	45	10	20	7	0	4	37	118
Total	21	67	15	0	2	103	11	38	8	0	2	57	7	115	46	0	0	168	26	89	25	0	5	140	468
5:00 PM	5	15	6	0	3	26	1	5	2	0	1	8	2	32	18	0	0	52	4	30	9	0	1	43	129
5:15 PM	10	10	6	0	2	26	4	7	4	0	0	15	5	32	11	0	0	48	7	40	10	0	0	57	146
5:30 PM	11	14	5	0	0	30	6	14	3	0	0	23	4	40	21	0	0	65	6	27	8	0	2	41	159
5:45 PM	5	25	4	0	1	34	6	13	2	0	0	21	1	48	9	0	0	58	10	39	8	0	0	57	170
Total	31	64	21	0	6	116	17	39	11	0	1	67	12	152	59	0	0	223	27	136	35	0	3	198	604
Grand Total	115	242	72	0	8	429	60	158	36	0	3	254	41	465	151	0	0	657	99	480	109	0	11	688	2028
Apprch %	26.8	56.4	16.8	0.0	1.9		23.6	62.2	14.2	0.0	1.2		6.2	70.8	23.0	0.0	0.0		14.4	69.8	15.8	0.0	1.6		
Total %	5.7	11.9	3.6	0.0	0.4	21.2	3.0	7.8	1.8	0.0	0.1	12.5	2.0	22.9	7.4	0.0	0.0	32.4	4.9	23.7	5.4	0.0	0.5	33.9	
Cars, PU, Vans	113	238	68	0		419	52	157	34	0		243	41	456	147	0		644	97	476	101	0		674	1980
% Cars, PU, Vans	98.3	98.3	94.4	0.0		97.7	86.7	99.4	94.4	0.0		95.7	100.0	98.1	97.4	0.0		98.0	98.0	99.2	92.7	0.0		98.0	97.6
Heavy trucks	2	4	4	0		10	8	1	2	0		11	0	9	4	0		13	2	4	8	0		14	48
%Heavy trucks	1.7	1.7	5.6	0.0		2.3	13.3	0.6	5.6	0.0		4.3	0.0	1.9	2.6	0.0		2.0	2.0	0.8	7.3	0.0		2.0	2.4

Project ID: 24-430073-005
Location: Hillside Ave & Hunnewell St
City: Needham

PEAK HOURS

Day: Thursday
Date: 5/30/2024

AM

	Hillside Ave Northbound					Hillside Ave Southbound					Hunnewell St Eastbound					Hunnewell St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	4	16	2	0	22	5	9	1	0	15	2	37	2	0	41	3	37	5	0	45	123
7:45 AM	12	21	4	0	37	10	15	3	0	28	4	31	6	0	41	4	39	9	0	52	158
8:00 AM	13	13	7	0	33	6	9	4	0	19	6	22	10	0	38	6	48	11	0	65	155
8:15 AM	6	31	6	0	43	2	13	1	0	16	4	31	7	0	42	8	45	4	0	57	158
Total Volume	35	81	19	0	135	23	46	9	0	78	16	121	25	0	162	21	169	29	0	219	594
% App. Total	25.9	60.0	14.1	0.0	100	29.5	59.0	11.5	0.0	100	9.9	74.7	15.4	0.0	100	9.6	77.2	13.2	0.0	100	
PHF					0.785					0.696					0.964					0.842	0.940
Cars, PU, Vans	35	79	17	0	131	22	45	8	0	75	16	121	24	0	161	20	168	27	0	215	582
% Cars, PU, Vans	100.0	97.5	89.5	0.0	97.0	95.7	97.8	88.9	0.0	96.2	100.0	100.0	96.0	0.0	99.4	95.2	99.4	93.1	0.0	98.2	98.0
Heavy trucks	0	2	2	0	4	1	1	1	0	3	0	0	1	0	1	1	1	2	0	4	12
%Heavy trucks	0.0	2.5	10.5	0.0	3.0	4.3	2.2	11.1	0.0	3.8	0.0	0.0	4.0	0.0	0.6	4.8	0.6	6.9	0.0	1.8	2.0

PM

	Hillside Ave Northbound					Hillside Ave Southbound					Hunnewell St Eastbound					Hunnewell St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
5:00 PM	5	15	6	0	26	1	5	2	0	8	2	32	18	0	52	4	30	9	0	43	129
5:15 PM	10	10	6	0	26	4	7	4	0	15	5	32	11	0	48	7	40	10	0	57	146
5:30 PM	11	14	5	0	30	6	14	3	0	23	4	40	21	0	65	6	27	8	0	41	159
5:45 PM	5	25	4	0	34	6	13	2	0	21	1	48	9	0	58	10	39	8	0	57	170
Total Volume	31	64	21	0	116	17	39	11	0	67	12	152	59	0	223	27	136	35	0	198	604
% App. Total	26.7	55.2	18.1	0.0	100	25.4	58.2	16.4	0.0	100	5.4	68.2	26.5	0.0	100	13.6	68.7	17.7	0.0	100	
PHF					0.853					0.728					0.858					0.868	0.888
Cars, PU, Vans	30	64	21	0	115	15	39	10	0	64	12	151	59	0	222	26	135	34	0	195	596
% Cars, PU, Vans	96.8	100.0	100.0	0.0	99.1	88.2	100.0	90.9	0.0	95.5	100.0	99.3	100.0	0.0	99.6	96.3	99.3	97.1	0.0	98.5	98.7
Heavy trucks	1	0	0	0	1	2	0	1	0	3	0	1	0	0	1	1	1	1	0	3	8
%Heavy trucks	3.2	0.0	0.0	0.0	0.9	11.8	0.0	9.1	0.0	4.5	0.0	0.7	0.0	0.0	0.4	3.7	0.7	2.9	0.0	1.5	1.3

National Data Surveying Services

Intersection Turning Movement Count

Location: Webster St & May St
City: Needham
Control: 1-Way Stop(WB)

Project ID: 24-430073-006
Date: 5/30/2024

Data - Total

NS/EW Streets:	Webster St				Webster St				May St				May St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	59	0	0	0	27	9	0	6	0	1	0	0	0	0	0	105
7:15 AM	7	98	0	0	0	51	31	0	7	0	9	0	0	0	0	0	203
7:30 AM	14	138	0	0	0	119	17	0	15	0	13	0	0	0	0	0	316
7:45 AM	25	133	0	0	0	60	36	0	10	0	18	0	0	0	0	0	282
8:00 AM	19	79	0	0	0	63	50	0	17	0	17	0	0	0	0	0	245
8:15 AM	5	106	0	0	0	57	17	0	16	0	5	0	0	0	0	0	206
8:30 AM	10	121	0	0	0	44	14	0	14	0	8	0	0	0	0	0	211
8:45 AM	7	140	0	0	0	52	22	0	17	0	11	0	0	0	0	0	249
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	90	874	0	0	0	473	196	0	102	0	82	0	0	0	0	0	1817
APPROACH %'s :	9.34%	90.66%	0.00%	0.00%	0.00%	70.70%	29.30%	0.00%	55.43%	0.00%	44.57%	0.00%					
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	63	456	0	0	0	299	120	0	58	0	53	0	0	0	0	0	1049
PEAK HR FACTOR :	0.630	0.826	0.000	0.000	0.000	0.628	0.600	0.000	0.853	0.000	0.736	0.000	0.000	0.000	0.000	0.000	0.830
	0.821				0.770				0.816								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	9	94	0	0	0	116	47	0	34	0	24	0	0	0	0	0	324
4:15 PM	8	55	0	0	0	156	32	0	18	0	10	0	0	0	0	0	279
4:30 PM	3	69	0	0	0	166	29	0	17	0	12	0	0	0	0	0	296
4:45 PM	5	71	0	0	0	134	41	0	24	0	12	0	0	0	0	0	287
5:00 PM	6	75	0	0	0	114	47	0	26	0	16	0	0	0	0	0	284
5:15 PM	8	77	0	0	0	143	33	0	25	0	20	0	0	0	0	0	306
5:30 PM	11	89	0	0	0	133	44	0	27	0	12	0	0	0	0	0	316
5:45 PM	9	67	0	0	0	157	39	0	15	0	18	0	0	0	0	0	305
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	59	597	0	0	0	1119	312	0	186	0	124	0	0	0	0	0	2397
APPROACH %'s :	8.99%	91.01%	0.00%	0.00%	0.00%	78.20%	21.80%	0.00%	60.00%	0.00%	40.00%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	34	308	0	0	0	547	163	0	93	0	66	0	0	0	0	0	1211
PEAK HR FACTOR :	0.773	0.865	0.000	0.000	0.000	0.871	0.867	0.000	0.861	0.000	0.825	0.000	0.000	0.000	0.000	0.000	0.958
	0.855				0.906				0.883								

National Data Surveying Services

Intersection Turning Movement Count

Location: Webster St & May St
City: Needham
Control: 1-Way Stop(WB)

Project ID: 24-430073-006
Date: 5/30/2024

Data - Cars

NS/EW Streets:	Webster St				Webster St				May St				May St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	58	0	0	0	24	7	0	6	0	1	0	0	0	0	0	99
7:15 AM	7	95	0	0	0	46	27	0	6	0	9	0	0	0	0	0	190
7:30 AM	13	130	0	0	0	117	15	0	15	0	12	0	0	0	0	0	302
7:45 AM	23	132	0	0	0	57	36	0	10	0	18	0	0	0	0	0	276
8:00 AM	19	78	0	0	0	61	50	0	17	0	17	0	0	0	0	0	242
8:15 AM	5	104	0	0	0	57	17	0	16	0	5	0	0	0	0	0	204
8:30 AM	10	118	0	0	0	44	14	0	14	0	8	0	0	0	0	0	208
8:45 AM	7	136	0	0	0	50	21	0	17	0	11	0	0	0	0	0	242
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	87	851	0	0	0	456	187	0	101	0	81	0	0	0	0	0	1763
APPROACH %'s :	9.28%	90.72%	0.00%	0.00%	0.00%	70.92%	29.08%	0.00%	55.49%	0.00%	44.51%	0.00%					
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	60	444	0	0	0	292	118	0	58	0	52	0	0	0	0	0	1024
PEAK HR FACTOR :	0.652	0.841	0.000	0.000	0.000	0.624	0.590	0.000	0.853	0.000	0.722	0.000	0.000	0.000	0.000	0.000	0.848
	0.813				0.777				0.809								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	9	93	0	0	0	113	45	0	34	0	23	0	0	0	0	0	317
4:15 PM	8	52	0	0	0	154	32	0	18	0	10	0	0	0	0	0	274
4:30 PM	3	68	0	0	0	166	29	0	16	0	11	0	0	0	0	0	293
4:45 PM	5	69	0	0	0	132	41	0	24	0	12	0	0	0	0	0	283
5:00 PM	6	74	0	0	0	112	47	0	26	0	16	0	0	0	0	0	281
5:15 PM	8	77	0	0	0	143	33	0	25	0	19	0	0	0	0	0	305
5:30 PM	11	89	0	0	0	132	44	0	27	0	11	0	0	0	0	0	314
5:45 PM	9	67	0	0	0	157	39	0	15	0	18	0	0	0	0	0	305
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	59	589	0	0	0	1109	310	0	185	0	120	0	0	0	0	0	2372
APPROACH %'s :	9.10%	90.90%	0.00%	0.00%	0.00%	78.15%	21.85%	0.00%	60.66%	0.00%	39.34%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	34	307	0	0	0	544	163	0	93	0	64	0	0	0	0	0	1205
PEAK HR FACTOR :	0.773	0.862	0.000	0.000	0.000	0.866	0.867	0.000	0.861	0.000	0.842	0.000	0.000	0.000	0.000	0.000	0.959
	0.853				0.902				0.892								

National Data Surveying Services

Intersection Turning Movement Count

Location: Webster St & May St
City: Needham
Control: 1-Way Stop(WB)

Project ID: 24-430073-006
Date: 5/30/2024

Data - HT

NS/EW Streets:	Webster St				Webster St				May St				May St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	0	0	0	3	2	0	0	0	0	0	0	0	0	0	6
7:15 AM	0	3	0	0	0	5	4	0	1	0	0	0	0	0	0	0	13
7:30 AM	1	8	0	0	0	2	2	0	0	0	1	0	0	0	0	0	14
7:45 AM	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6
8:00 AM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:30 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	4	0	0	0	2	1	0	0	0	0	0	0	0	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	23	0	0	0	17	9	0	1	0	1	0	0	0	0	0	54
APPROACH %'s :	11.54%	88.46%	0.00%	0.00%	0.00%	65.38%	34.62%	0.00%	50.00%	0.00%	50.00%	0.00%					
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	3	12	0	0	0	7	2	0	0	0	1	0	0	0	0	0	25
PEAK HR FACTOR :	0.375	0.375	0.000	0.000	0.000	0.583	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.446
	0.417				0.563				0.250								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	3	2	0	0	0	1	0	0	0	0	0	7
4:15 PM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
4:30 PM	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
4:45 PM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
5:00 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	8	0	0	0	10	2	0	1	0	4	0	0	0	0	0	25
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	83.33%	16.67%	0.00%	20.00%	0.00%	80.00%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	1	0	0	0	3	0	0	0	0	2	0	0	0	0	0	6
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.500
	0.250				0.375				0.500								

National Data Surveying Services

Intersection Turning Movement Count

Location: Webster St & May St
City: Needham
Control: 1-Way Stop(WB)

Project ID: 24-430073-006
Date: 5/30/2024

Data - Bikes

NS/EW Streets:	Webster St				Webster St				May St				May St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :					0.00%	100.00%	0.00%	0.00%									
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
						0.250											

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%													
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data Surveying Services

Intersection Turning Movement Count

Location: Webster St & May St
City: Needham

Project ID: 24-430073-006
Date: 5/30/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Webster St		Webster St		May St		May St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	1	0	0	0	0	0	1
7:30 AM	0	1	0	0	1	0	0	1	3
7:45 AM	0	1	0	0	1	0	0	0	2
8:00 AM	1	0	0	0	0	0	1	0	2
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	2	1	0	2	0	1	1	8
APPROACH %'s :	33.33%	66.67%	100.00%	0.00%	100.00%	0.00%	50.00%	50.00%	
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	1	2	0	0	2	0	1	1	7
PEAK HR FACTOR :	0.250	0.500			0.500		0.250	0.250	0.583
	0.750				0.500		0.500		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	1	1	0	0	4	0	0	0	6
4:15 PM	1	3	0	0	1	0	0	1	6
4:30 PM	2	0	0	0	2	2	2	3	11
4:45 PM	0	0	0	0	0	1	1	3	5
5:00 PM	2	1	0	0	1	1	1	0	6
5:15 PM	2	0	0	0	1	4	0	1	8
5:30 PM	1	0	0	0	1	1	0	2	5
5:45 PM	0	0	0	0	0	0	0	1	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	9	5	0	0	10	9	4	11	48
APPROACH %'s :	64.29%	35.71%			52.63%	47.37%	26.67%	73.33%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	5	1	0	0	3	6	1	4	20
PEAK HR FACTOR :	0.625	0.250			0.750	0.375	0.250	0.500	0.625
	0.500				0.450		0.625		

Prepared by National Data & Surveying Services

Webster St & May St

Peak Hour Turning Movement Count

ID: 24-430073-006
City: Needham

Day: Thursday
Date: 5/30/2024

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	05:00 PM - 06:00 PM	4:00 PM - 06:00 PM

SOUTHBOUND (Webster St)

	Right	Thru	Left	U-Turn	Exiting
AM	120	299	0	0	514
NOON	0	0	0	0	0
PM	163	547	0	0	401
HT	0	1	0	0	

EASTBOUND (May St)

	AM	NOON	PM	HT
Exiting	183	0	197	
U-Turn	0	0	0	0
Left	58	0	93	0
Thru	0	0	0	1
Right	53	0	66	0

WESTBOUND (May St)

	HT	PM	NOON	AM
Right	0	0	0	0
Thru	0	0	0	0
Left	0	0	0	0
U-Turn	0	0	0	0
Exiting		0	0	0

NORTHBOUND (Webster St)

	Exiting	U-Turn	Left	Thru	Right
HT		0	0	1	0
PM	613	0	34	308	0
NOON	0	0	0	0	0
AM	352	0	63	456	0

CONTROL

1-Way Stop(WB)

	AM	NOON	PM
TEV	1049	0	1211
PHF	0.83		0.96

Cars and Heavy Trucks (HT)

	SB Right	SB Thru	SB Left	EB Left	EB Thru	EB Right	WB Right	WB Thru	WB Left	NB Left	NB Thru	NB Right
Cars (AM)	118	292	0	58	0	52	0	0	0	60	444	0
Cars (NOON)	0	0	0	0	0	0	0	0	0	0	0	0
Cars (PM)	163	544	0	93	0	64	0	0	0	34	307	0
HT (AM)	2	7	0	0	0	1	0	0	0	3	12	0
HT (NOON)	0	0	0	0	0	0	0	0	0	0	0	0
HT (PM)	0	3	0	0	0	2	0	0	0	0	1	0

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North	Eastbound (→)	1	0	5
North	Westbound (←)	2	0	1
East	Southbound (↓)	0	0	6
East	Northbound (↑)	2	0	3
South	Eastbound (→)	0	0	0
South	Westbound (←)	0	0	0
West	Southbound (↓)	1	0	4
West	Northbound (↑)	1	0	1
NW diagonal		0	0	0
NE diagonal		0	0	0
SW diagonal		0	0	0
SE diagonal		0	0	0

Project ID: 24-430073-006
Location: Webster St & May St
City: Needham

Day: Thursday
Date: 5/30/2024

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Webster St Southbound						May St Westbound						Webster St Northbound						May St Eastbound						
Start Time	Rgt	Thru	Left	Uturn	Peds	App. Total	Rgt	Thru	Left	Uturn	Peds	App. Total	Rgt	Thru	Left	Uturn	Peds	App. Total	Rgt	Thru	Left	Uturn	Peds	App. Total	Int. Total
7:00 AM	9	27	0	0	0	36	0	0	0	0	0	0	0	59	3	0	0	62	1	0	6	0	0	7	105
7:15 AM	31	51	0	0	0	82	0	0	0	0	0	0	0	98	7	0	1	105	9	0	7	0	0	16	203
7:30 AM	17	119	0	0	1	136	0	0	0	0	1	0	0	138	14	0	0	152	13	0	15	0	1	28	316
7:45 AM	36	60	0	0	1	96	0	0	0	0	1	0	0	133	25	0	0	158	18	0	10	0	0	28	282
Total	93	257	0	0	2	350	0	0	0	0	2	0	0	428	49	0	1	477	41	0	38	0	1	79	906
8:00 AM	50	63	0	0	1	113	0	0	0	0	0	0	0	79	19	0	0	98	17	0	17	0	1	34	245
8:15 AM	17	57	0	0	0	74	0	0	0	0	0	0	0	106	5	0	0	111	5	0	16	0	0	21	206
8:30 AM	14	44	0	0	0	58	0	0	0	0	0	0	0	121	10	0	0	131	8	0	14	0	0	22	211
8:45 AM	22	52	0	0	0	74	0	0	0	0	0	0	0	140	7	0	0	147	11	0	17	0	0	28	249
Total	103	216	0	0	1	319	0	0	0	0	0	0	0	446	41	0	0	487	41	0	64	0	1	105	911
BREAK																									
4:00 PM	47	116	0	0	2	163	0	0	0	0	4	0	0	94	9	0	0	103	24	0	34	0	0	58	324
4:15 PM	32	156	0	0	4	188	0	0	0	0	1	0	0	55	8	0	0	63	10	0	18	0	1	28	279
4:30 PM	29	166	0	0	2	195	0	0	0	0	4	0	0	69	3	0	0	72	12	0	17	0	5	29	296
4:45 PM	41	134	0	0	0	175	0	0	0	0	1	0	0	71	5	0	0	76	12	0	24	0	4	36	287
Total	149	572	0	0	8	721	0	0	0	0	10	0	0	289	25	0	0	314	58	0	93	0	10	151	1186
5:00 PM	47	114	0	0	3	161	0	0	0	0	2	0	0	75	6	0	0	81	16	0	26	0	1	42	284
5:15 PM	33	143	0	0	2	176	0	0	0	0	5	0	0	77	8	0	0	85	20	0	25	0	1	45	306
5:30 PM	44	133	0	0	1	177	0	0	0	0	2	0	0	89	11	0	0	100	12	0	27	0	2	39	316
5:45 PM	39	157	0	0	0	196	0	0	0	0	0	0	0	67	9	0	0	76	18	0	15	0	1	33	305
Total	163	547	0	0	6	710	0	0	0	0	9	0	0	308	34	0	0	342	66	0	93	0	5	159	1211
Grand Total	508	1592	0	0	17	2100	0	0	0	0	21	0	0	1471	149	0	1	1620	206	0	288	0	17	494	4214
Apprch %	24.2	75.8	0.0	0.0	0.8		0.0	0.0	0.0	0.0	0.0		0.0	90.8	9.2	0.0	0.1		41.7	0.0	58.3	0.0	3.4		
Total %	12.1	37.8	0.0	0.0	0.4	49.8	0.0	0.0	0.0	0.0	0.5	0.0	0.0	34.9	3.5	0.0	0.0	38.4	4.9	0.0	6.8	0.0	0.4	11.7	
Cars, PU, Vans	497	1565	0	0		2062	0	0	0	0		0	0	1440	146	0		1586	201	0	286	0		487	4135
% Cars, PU, Vans	97.8	98.3	0.0	0.0		98.2	0.0	0.0	0.0	0.0		0.0	0.0	97.9	98.0	0.0		97.9	97.6	0.0	99.3	0.0		98.6	98.1
Heavy trucks	11	27	0	0		38	0	0	0	0		0	0	31	3	0		34	5	0	2	0		7	79
%Heavy trucks	2.2	1.7	0.0	0.0		1.8	0.0	0.0	0.0	0.0		0.0	0.0	2.1	2.0	0.0		2.1	2.4	0.0	0.7	0.0		1.4	1.9

Project ID: 24-430073-006
Location: Webster St & May St
City: Needham

PEAK HOURS

Day: Thursday
Date: 5/30/2024

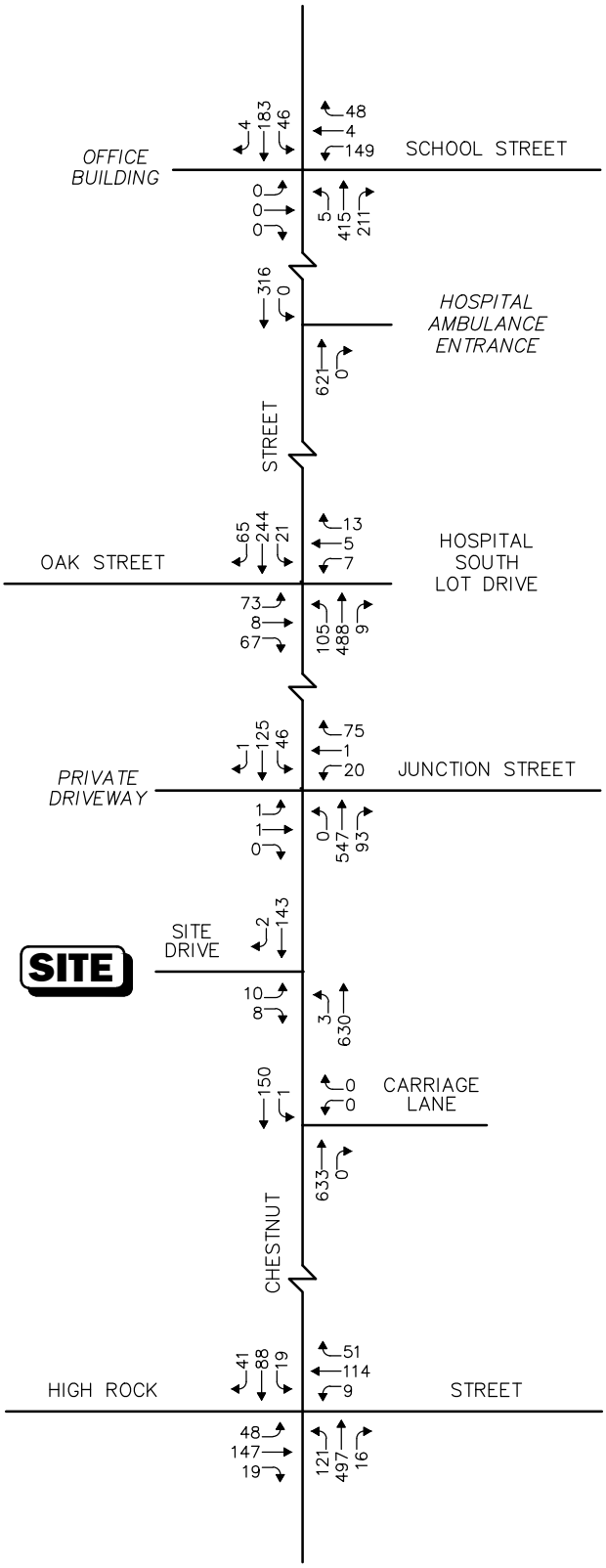
AM

	Webster St Southbound					May St Westbound					Webster St Northbound					May St Eastbound					
Start Time	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	17	119	0	0	136	0	0	0	0	0	0	138	14	0	152	13	0	15	0	28	316
7:45 AM	36	60	0	0	96	0	0	0	0	0	0	133	25	0	158	18	0	10	0	28	282
8:00 AM	50	63	0	0	113	0	0	0	0	0	0	79	19	0	98	17	0	17	0	34	245
8:15 AM	17	57	0	0	74	0	0	0	0	0	0	106	5	0	111	5	0	16	0	21	206
Total Volume	120	299	0	0	419	0	0	0	0	0	0	456	63	0	519	53	0	58	0	111	1049
% App. Total	28.6	71.4	0.0	0.0	100	0.0	0.0	0.0	0.0	0	0.0	87.9	12.1	0.0	100	47.7	0.0	52.3	0.0	100	
PHF					0.770										0.821					0.816	0.830
Cars, PU, Vans	118	292	0	0	410	0	0	0	0	0	0	444	60	0	504	52	0	58	0	110	1024
% Cars, PU, Vans	98.3	97.7	0.0	0.0	97.9	0.0	0.0	0.0	0.0	0.0	0.0	97.4	95.2	0.0	97.1	98.1	0.0	100.0	0.0	99.1	97.6
Heavy trucks	2	7	0	0	9	0	0	0	0	0	0	12	3	0	15	1	0	0	0	1	25
%Heavy trucks	1.7	2.3	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	2.6	4.8	0.0	2.9	1.9	0.0	0.0	0.0	0.9	2.4

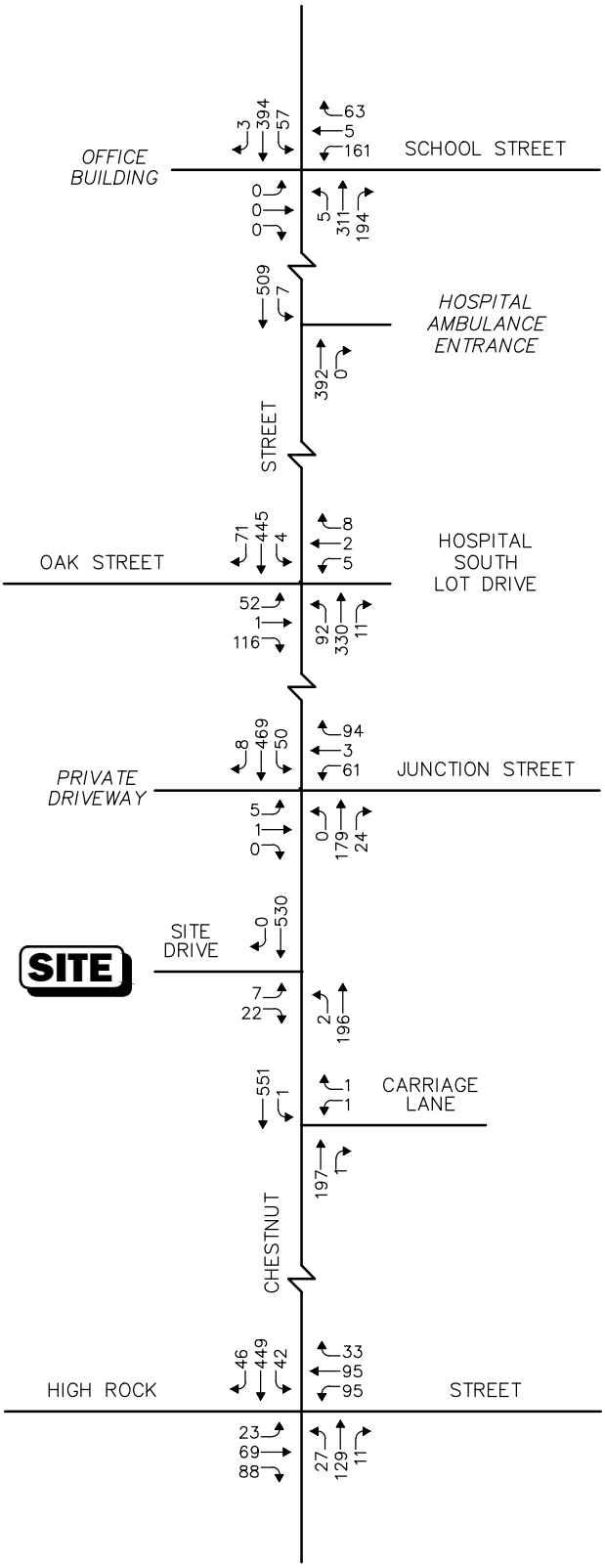
PM

	Webster St Southbound					May St Westbound					Webster St Northbound					May St Eastbound					
Start Time	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Rgt	Thru	Left	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
5:00 PM	47	114	0	0	161	0	0	0	0	0	0	75	6	0	81	16	0	26	0	42	284
5:15 PM	33	143	0	0	176	0	0	0	0	0	0	77	8	0	85	20	0	25	0	45	306
5:30 PM	44	133	0	0	177	0	0	0	0	0	0	89	11	0	100	12	0	27	0	39	316
5:45 PM	39	157	0	0	196	0	0	0	0	0	0	67	9	0	76	18	0	15	0	33	305
Total Volume	163	547	0	0	710	0	0	0	0	0	0	308	34	0	342	66	0	93	0	159	1211
% App. Total	23.0	77.0	0.0	0.0	100	0.0	0.0	0.0	0.0	0	0.0	90.1	9.9	0.0	100	41.5	0.0	58.5	0.0	100	
PHF					0.906										0.855					0.883	0.958
Cars, PU, Vans	163	544	0	0	707	0	0	0	0	0	0	307	34	0	341	64	0	93	0	157	1205
% Cars, PU, Vans	100.0	99.5	0.0	0.0	99.6	0.0	0.0	0.0	0.0	0.0	0.0	99.7	100.0	0.0	99.7	97.0	0.0	100.0	0.0	98.7	99.5
Heavy trucks	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	2	0	0	0	2	6
%Heavy trucks	0.0	0.5	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3	3.0	0.0	0.0	0.0	1.3	0.5

WEEKDAY MORNING PEAK HOUR (7:45 - 8:45 AM)



WEEKDAY EVENING PEAK HOUR (4:30 - 5:30 PM)



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Figure 3

2018 Existing Weekday Peak Hour Traffic Volumes

Vanasse & Associates, Inc.
Transportation Engineers & Planners

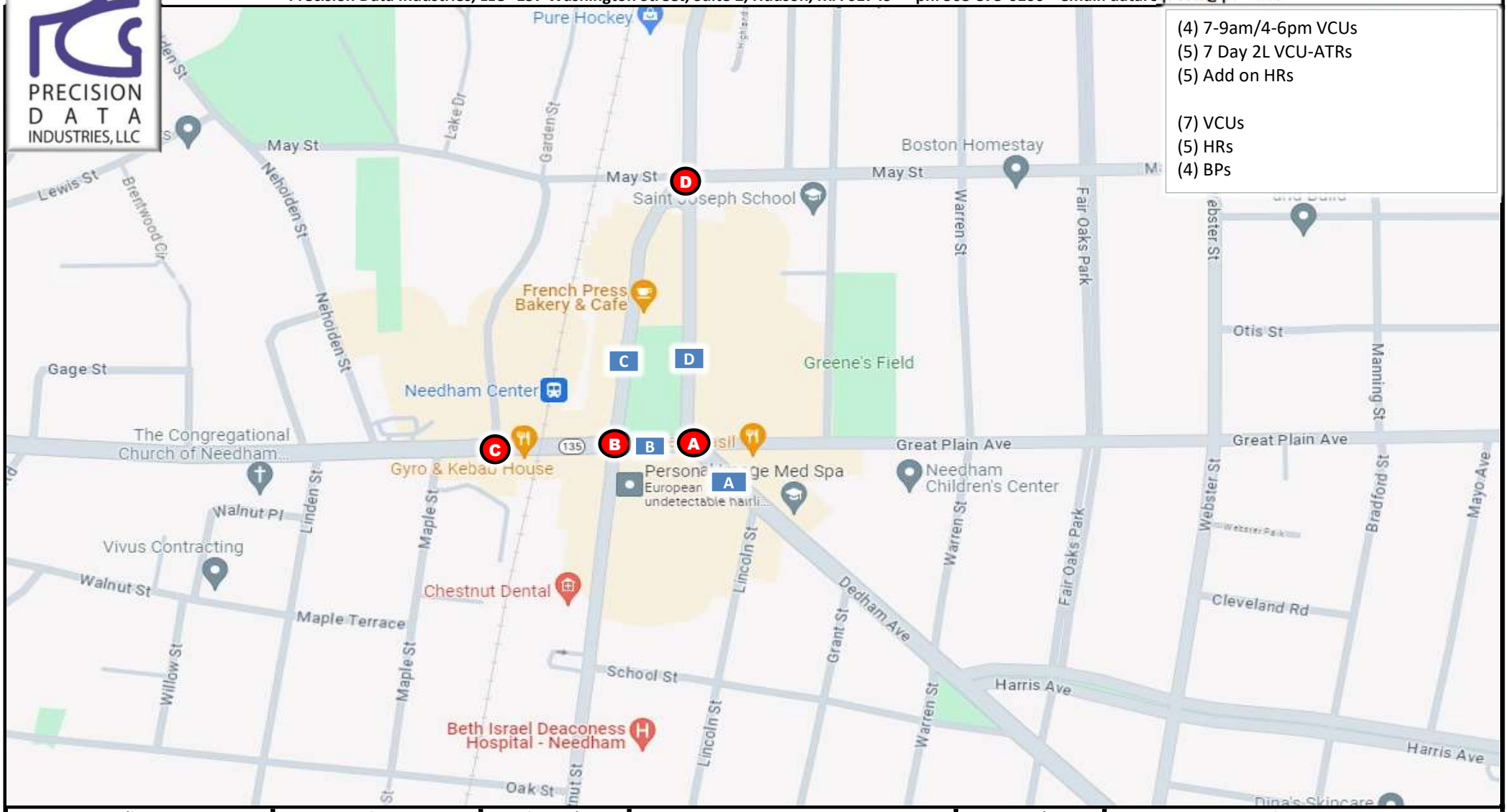
R:\8023\8023nt1.dwg, 1/14/2019 11:24:27 AM

Location Map: 239698 Needham, MA

Precision Data Industries, LLC 157 Washington Street, Suite 2, Hudson, MA 01749 ph: 508-875-0100 email: datareguests@pdillc.com

(4) 7-9am/4-6pm VCUs
(5) 7 Day 2L VCU-ATRs
(5) Add on HRs

(7) VCUs
(5) HRs
(4) BPs



Client:	Engineer:	Site Code:	Date:	PDI Job #	City, State:
Nitsch	B. Zimolka	TBD	Tues 1/23/24 - Mon 1/29/24	239698	Needham, MA

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	1	10	1	0	12	1	19	0	0	20	0	18	22	0	40	30	33	4	0	67	139
7:15 AM	2	14	7	0	23	4	48	0	0	52	5	15	32	0	52	39	39	6	0	84	211
7:30 AM	2	24	7	0	33	13	43	0	0	56	7	37	59	0	103	86	92	12	0	190	382
7:45 AM	3	22	8	0	33	22	79	0	0	101	3	59	68	0	130	46	71	19	0	136	400
Total	8	70	23	0	101	40	189	0	0	229	15	129	181	0	325	201	235	41	0	477	1132
8:00 AM	6	25	5	0	36	10	62	0	0	72	11	38	57	0	106	60	53	18	0	131	345
8:15 AM	2	17	5	0	24	12	64	0	0	76	12	22	41	0	75	50	27	6	0	83	258
8:30 AM	5	27	3	0	35	11	59	0	0	70	10	34	51	0	95	50	36	9	0	95	295
8:45 AM	6	19	7	0	32	5	50	0	0	55	10	26	65	0	101	62	43	13	0	118	306
Total	19	88	20	0	127	38	235	0	0	273	43	120	214	0	377	222	159	46	0	427	1204
Grand Total	27	158	43	0	228	78	424	0	0	502	58	249	395	0	702	423	394	87	0	904	2336
Approach %	11.8	69.3	18.9	0.0		15.5	84.5	0.0	0.0		8.3	35.5	56.3	0.0		46.8	43.6	9.6	0.0		
Total %	1.2	6.8	1.8	0.0	9.8	3.3	18.2	0.0	0.0	21.5	2.5	10.7	16.9	0.0	30.1	18.1	16.9	3.7	0.0	38.7	
Exiting Leg Total					414					495					581					846	2336
Cars	26	154	42	0	222	77	414	0	0	491	57	247	384	0	688	410	386	87	0	883	2284
% Cars	96.3	97.5	97.7	0.0	97.4	98.7	97.6	0.0	0.0	97.8	98.3	99.2	97.2	0.0	98.0	96.9	98.0	100.0	0.0	97.7	97.8
Exiting Leg Total					411					485					564					824	2284
Heavy Vehicles	1	4	1	0	6	1	10	0	0	11	1	2	11	0	14	13	8	0	0	21	52
% Heavy Vehicles	3.7	2.5	2.3	0.0	2.6	1.3	2.4	0.0	0.0	2.2	1.7	0.8	2.8	0.0	2.0	3.1	2.0	0.0	0.0	2.3	2.2
Exiting Leg Total					3					10					17					22	52

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:30 AM	2	24	7	0	33	13	43	0	0	56	7	37	59	0	103	86	92	12	0	190	382
7:45 AM	3	22	8	0	33	22	79	0	0	101	3	59	68	0	130	46	71	19	0	136	400
8:00 AM	6	25	5	0	36	10	62	0	0	72	11	38	57	0	106	60	53	18	0	131	345
8:15 AM	2	17	5	0	24	12	64	0	0	76	12	22	41	0	75	50	27	6	0	83	258
Total Volume	13	88	25	0	126	57	248	0	0	305	33	156	225	0	414	242	243	55	0	540	1385
% Approach Total	10.3	69.8	19.8	0.0		18.7	81.3	0.0	0.0		8.0	37.7	54.3	0.0		44.8	45.0	10.2	0.0		
PHF	0.542	0.880	0.781	0.000	0.875	0.648	0.785	0.000	0.000	0.755	0.688	0.661	0.827	0.000	0.796	0.703	0.660	0.724	0.000	0.711	0.866
Cars	13	86	25	0	124	56	243	0	0	299	32	155	221	0	408	233	239	55	0	527	1358
Cars %	100.0	97.7	100.0	0.0	98.4	98.2	98.0	0.0	0.0	98.0	97.0	99.4	98.2	0.0	98.6	96.3	98.4	100.0	0.0	97.6	98.1
Heavy Vehicles	0	2	0	0	2	1	5	0	0	6	1	1	4	0	6	9	4	0	0	13	27
Heavy Vehicles %	0.0	2.3	0.0	0.0	1.6	1.8	2.0	0.0	0.0	2.0	3.0	0.6	1.8	0.0	1.4	3.7	1.6	0.0	0.0	2.4	1.9
Cars Enter Leg	13	86	25	0	124	56	243	0	0	299	32	155	221	0	408	233	239	55	0	527	1358
Heavy Enter Leg	0	2	0	0	2	1	5	0	0	6	1	1	4	0	6	9	4	0	0	13	27
Total Entering Leg	13	88	25	0	126	57	248	0	0	305	33	156	225	0	414	242	243	55	0	540	1385
Cars Exiting Leg					266					296					319					477	1358
Heavy Exiting Leg					2					5					11					9	27
Total Exiting Leg					268					301					330					486	1385

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars

	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	1	9	1	0	11	1	18	0	0	19	0	18	19	0	37	30	32	4	0	66	133
7:15 AM	1	14	7	0	22	4	45	0	0	49	5	14	32	0	51	38	39	6	0	83	205
7:30 AM	2	24	7	0	33	13	43	0	0	56	7	37	59	0	103	86	92	12	0	190	382
7:45 AM	3	22	8	0	33	22	77	0	0	99	3	58	67	0	128	46	70	19	0	135	395
Total	7	69	23	0	99	40	183	0	0	223	15	127	177	0	319	200	233	41	0	474	1115
8:00 AM	6	23	5	0	34	9	60	0	0	69	11	38	56	0	105	53	50	18	0	121	329
8:15 AM	2	17	5	0	24	12	63	0	0	75	11	22	39	0	72	48	27	6	0	81	252
8:30 AM	5	27	3	0	35	11	59	0	0	70	10	34	50	0	94	48	35	9	0	92	291
8:45 AM	6	18	6	0	30	5	49	0	0	54	10	26	62	0	98	61	41	13	0	115	297
Total	19	85	19	0	123	37	231	0	0	268	42	120	207	0	369	210	153	46	0	409	1169
Grand Total	26	154	42	0	222	77	414	0	0	491	57	247	384	0	688	410	386	87	0	883	2284
Approach %	11.7	69.4	18.9	0.0		15.7	84.3	0.0	0.0		8.3	35.9	55.8	0.0		46.4	43.7	9.9	0.0		
Total %	1.1	6.7	1.8	0.0	9.7	3.4	18.1	0.0	0.0	21.5	2.5	10.8	16.8	0.0	30.1	18.0	16.9	3.8	0.0	38.7	
Exiting Leg Total					411					485					564					824	2284

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:30 AM	2	24	7	0	33	13	43	0	0	56	7	37	59	0	103	86	92	12	0	190	382
7:45 AM	3	22	8	0	33	22	77	0	0	99	3	58	67	0	128	46	70	19	0	135	395
8:00 AM	6	23	5	0	34	9	60	0	0	69	11	38	56	0	105	53	50	18	0	121	329
8:15 AM	2	17	5	0	24	12	63	0	0	75	11	22	39	0	72	48	27	6	0	81	252
Total Volume	13	86	25	0	124	56	243	0	0	299	32	155	221	0	408	233	239	55	0	527	1358
% Approach Total	10.5	69.4	20.2	0.0		18.7	81.3	0.0	0.0		7.8	38.0	54.2	0.0		44.2	45.4	10.4	0.0		
PHF	0.542	0.896	0.781	0.000	0.912	0.636	0.789	0.000	0.000	0.755	0.727	0.668	0.825	0.000	0.797	0.677	0.649	0.724	0.000	0.693	0.859
Entering Leg	13	86	25	0	124	56	243	0	0	299	32	155	221	0	408	233	239	55	0	527	1358
Exiting Leg					266					296					319					477	1358
Total					390					595					727					1004	2716

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	1	0	0	1	0	1	0	0	1	0	0	3	0	3	0	1	0	0	1	6
7:15 AM	1	0	0	0	1	0	3	0	0	3	0	1	0	0	1	1	0	0	0	1	6
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	2	0	0	2	0	1	1	0	2	0	1	0	0	1	5
Total	1	1	0	0	2	0	6	0	0	6	0	2	4	0	6	1	2	0	0	3	17
8:00 AM	0	2	0	0	2	1	2	0	0	3	0	0	1	0	1	7	3	0	0	10	16
8:15 AM	0	0	0	0	0	0	1	0	0	1	1	0	2	0	3	2	0	0	0	2	6
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	1	0	0	3	4
8:45 AM	0	1	1	0	2	0	1	0	0	1	0	0	3	0	3	1	2	0	0	3	9
Total	0	3	1	0	4	1	4	0	0	5	1	0	7	0	8	12	6	0	0	18	35
Grand Total	1	4	1	0	6	1	10	0	0	11	1	2	11	0	14	13	8	0	0	21	52
Approach %	16.7	66.7	16.7	0.0		9.1	90.9	0.0	0.0		7.1	14.3	78.6	0.0		61.9	38.1	0.0	0.0		
Total %	1.9	7.7	1.9	0.0	11.5	1.9	19.2	0.0	0.0	21.2	1.9	3.8	21.2	0.0	26.9	25.0	15.4	0.0	0.0	40.4	
Exiting Leg Total					3					10					17					22	52
Buses	0	1	0	0	1	1	7	0	0	8	0	2	0	0	2	7	2	0	0	9	20
% Buses	0.0	25.0	0.0	0.0	16.7	100.0	70.0	0.0	0.0	72.7	0.0	100.0	0.0	0.0	14.3	53.8	25.0	0.0	0.0	42.9	38.5
Exiting Leg Total					3					2					8					7	20
Single-Unit Trucks	1	2	1	0	4	0	2	0	0	2	1	0	8	0	9	6	4	0	0	10	25
% Single-Unit	100.0	50.0	100.0	0.0	66.7	0.0	20.0	0.0	0.0	18.2	100.0	0.0	72.7	0.0	64.3	46.2	50.0	0.0	0.0	47.6	48.1
Exiting Leg Total					0					6					8					11	25
Articulated Trucks	0	1	0	0	1	0	1	0	0	1	0	0	3	0	3	0	2	0	0	2	7
% Articulated	0.0	25.0	0.0	0.0	16.7	0.0	10.0	0.0	0.0	9.1	0.0	0.0	27.3	0.0	21.4	0.0	25.0	0.0	0.0	9.5	13.5
Exiting Leg Total					0					2					1					4	7

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
8:00 AM	0	2	0	0	2	1	2	0	0	3	0	0	1	0	1	7	3	0	0	10	16
8:15 AM	0	0	0	0	0	0	1	0	0	1	1	0	2	0	3	2	0	0	0	2	6
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	1	0	0	3	4
8:45 AM	0	1	1	0	2	0	1	0	0	1	0	0	3	0	3	1	2	0	0	3	9
Total Volume	0	3	1	0	4	1	4	0	0	5	1	0	7	0	8	12	6	0	0	18	35
% Approach Total	0.0	75.0	25.0	0.0		20.0	80.0	0.0	0.0		12.5	0.0	87.5	0.0		66.7	33.3	0.0	0.0		
PHF	0.000	0.375	0.250	0.000	0.500	0.250	0.500	0.000	0.000	0.417	0.250	0.000	0.583	0.000	0.667	0.429	0.500	0.000	0.000	0.450	0.547
Buses	0	1	0	0	1	1	3	0	0	4	0	0	0	0	0	7	1	0	0	8	13
Buses %	0.0	33.3	0.0	0.0	25.0	100.0	75.0	0.0	0.0	80.0	0.0	0.0	0.0	0.0	0.0	58.3	16.7	0.0	0.0	44.4	37.1
Single-Unit Trucks	0	1	1	0	2	0	1	0	0	1	1	0	5	0	6	5	3	0	0	8	17
Single-Unit %	0.0	33.3	100.0	0.0	50.0	0.0	25.0	0.0	0.0	20.0	100.0	0.0	71.4	0.0	75.0	41.7	50.0	0.0	0.0	44.4	48.6
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	2	0	0	2	5
Articulated %	0.0	33.3	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.6	0.0	25.0	0.0	33.3	0.0	0.0	11.1	14.3
Buses	0	1	0	0	1	1	3	0	0	4	0	0	0	0	0	7	1	0	0	8	13
Single-Unit Trucks	0	1	1	0	2	0	1	0	0	1	1	0	5	0	6	5	3	0	0	8	17
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	2	0	0	2	5
Total Entering Leg	0	3	1	0	4	1	4	0	0	5	1	0	7	0	8	12	6	0	0	18	35
Buses					1					1					8					3	13
Single-Unit Trucks					0					5					6					6	17
Articulated Trucks					0					2					1					2	5
Total Exiting Leg					1					8					15					11	35

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Buses

	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	4
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	3
Total	0	0	0	0	0	0	4	0	0	4	0	2	0	0	2	0	1	0	0	1	7
8:00 AM	0	1	0	0	1	1	2	0	0	3	0	0	0	0	0	4	1	0	0	5	9
8:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	1	3	0	0	4	0	0	0	0	0	7	1	0	0	8	13
Grand Total	0	1	0	0	1	1	7	0	0	8	0	2	0	0	2	7	2	0	0	9	20
Approach %	0.0	100.0	0.0	0.0		12.5	87.5	0.0	0.0		0.0	100.0	0.0	0.0		77.8	22.2	0.0	0.0		
Total %	0.0	5.0	0.0	0.0	5.0	5.0	35.0	0.0	0.0	40.0	0.0	10.0	0.0	0.0	10.0	35.0	10.0	0.0	0.0	45.0	
Exiting Leg Total					3					2					8					7	20

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	4
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	3
8:00 AM	0	1	0	0	1	1	2	0	0	3	0	0	0	0	0	4	1	0	0	5	9
Total Volume	0	1	0	0	1	1	6	0	0	7	0	2	0	0	2	4	2	0	0	6	16
% Approach Total	0.0	100.0	0.0	0.0		14.3	85.7	0.0	0.0		0.0	100.0	0.0	0.0		66.7	33.3	0.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.250	0.250	0.500	0.000	0.000	0.583	0.000	0.500	0.000	0.000	0.500	0.250	0.500	0.000	0.000	0.300	0.444
Entering Leg	0	1	0	0	1	1	6	0	0	7	0	2	0	0	2	4	2	0	0	6	16
Exiting Leg					3					2					5					6	16
Total					4					9					7					12	32

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Single-Unit Trucks**

	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	1	0	0	1	0	1	0	0	1	0	0	2	0	2	0	1	0	0	1	5
7:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Total	1	1	0	0	2	0	1	0	0	1	0	0	3	0	3	1	1	0	0	2	8
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	1	0	0	4	5
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	1	0	0	0	1	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
8:45 AM	0	1	1	0	2	0	1	0	0	1	0	0	2	0	2	1	2	0	0	3	8
Total	0	1	1	0	2	0	1	0	0	1	1	0	5	0	6	5	3	0	0	8	17
Grand Total	1	2	1	0	4	0	2	0	0	2	1	0	8	0	9	6	4	0	0	10	25
Approach %	25.0	50.0	25.0	0.0		0.0	100.0	0.0	0.0		11.1	0.0	88.9	0.0		60.0	40.0	0.0	0.0		
Total %	4.0	8.0	4.0	0.0	16.0	0.0	8.0	0.0	0.0	8.0	4.0	0.0	32.0	0.0	36.0	24.0	16.0	0.0	0.0	40.0	
Exiting Leg Total					0					6					8					11	25

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	1	0	0	4	5
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	1	0	0	0	1	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
8:45 AM	0	1	1	0	2	0	1	0	0	1	0	0	2	0	2	1	2	0	0	3	8
Total Volume	0	1	1	0	2	0	1	0	0	1	1	0	5	0	6	5	3	0	0	8	17
% Approach Total	0.0	50.0	50.0	0.0		0.0	100.0	0.0	0.0		16.7	0.0	83.3	0.0		62.5	37.5	0.0	0.0		
PHF	0.000	0.250	0.250	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.250	0.000	0.625	0.000	0.750	0.417	0.375	0.000	0.000	0.500	0.531
Entering Leg	0	1	1	0	2	0	1	0	0	1	1	0	5	0	6	5	3	0	0	8	17
Exiting Leg					0					5					6					6	17
Total					2					6					12					14	34

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class: **Articulated Trucks**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	2
8:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Total	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	2	0	0	2	5
Grand Total	0	1	0	0	1	0	1	0	0	1	0	0	3	0	3	0	2	0	0	2	7
Approach %	0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	14.3	0.0	0.0	14.3	0.0	14.3	0.0	0.0	14.3	0.0	0.0	42.9	0.0	42.9	0.0	28.6	0.0	0.0	28.6	
Exiting Leg Total					0					2					1					4	7

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:45 AM	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
8:30 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	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	2	0	0	2	5
% Approach Total	0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.250	0.000	0.500	0.000	0.000	0.500	0.625
Entering Leg	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	2	0	0	2	5
Exiting Leg					0					2					1					2	5
Total					1					3					2					4	10

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Highland Avenue							Great Plain Avenue (Route 135)							Dedham Avenue							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	2	0	0	0	0	0	2	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
Grand Total	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	2	4
Approach %	0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	25.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	25.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	
Exiting Leg Total							0							1							3							0	4

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Highland Avenue							Great Plain Avenue (Route 135)							Dedham Avenue							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
Total Volume	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	2	4
% Approach Total	0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.500
Entering Leg	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	2	4
Exiting Leg							0							1							3							0	4
Total							1							1							4							2	8

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Highland Avenue							Great Plain Avenue (Route 135)							Dedham Avenue							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	3
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	2	1	3	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	0	0	0	2	2	4	0	0	0	0	5	0	5	0	0	0	0	1	0	1	0	0	0	0	0	0	0	10
8:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	3	1	4	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	6
8:45 AM	0	0	0	0	1	2	3	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	1	1	6
Total	0	0	0	0	5	3	8	0	0	0	0	2	0	2	0	0	0	0	1	1	2	0	0	0	0	1	2	3	15
Grand Total	0	0	0	0	7	5	12	0	0	0	0	7	0	7	0	0	0	0	2	1	3	0	0	0	0	1	2	3	25
Approach %	0	0	0	0	58.3	41.7		0	0	0	0	100	0		0	0	0	0	66.7	33.3		0	0	0	0	33.3	66.7		
Total %	0	0	0	0	28	20	48	0	0	0	0	28	0	28	0	0	0	0	8	4	12	0	0	0	0	4	8	12	
Exiting Leg Total							12							7							3							3	25

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Highland Avenue							Great Plain Avenue (Route 135)							Dedham Avenue							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
8:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	3	1	4	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	6
8:45 AM	0	0	0	0	1	2	3	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	1	1	6
Total Volume	0	0	0	0	5	3	8	0	0	0	0	2	0	2	0	0	0	0	1	1	2	0	0	0	0	1	2	3	15
% Approach Total	0.0	0.0	0.0	0.0	62.5	37.5		0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	0.0	33.3	66.7		
PHF	0.000	0.000	0.000	0.000	0.417	0.375	0.500	0.000	0.000	0.000	0.000	0.500	0.000	0.500	0.000	0.000	0.000	0.000	0.250	0.250	0.500	0.000	0.000	0.000	0.000	0.250	0.500	0.750	0.625
Entering Leg	0	0	0	0	5	3	8	0	0	0	0	2	0	2	0	0	0	0	1	1	2	0	0	0	0	1	2	3	15
Exiting Leg							8							2							2							3	15
Total							16							4							4							6	30

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	17	44	22	0	83	18	49	0	0	67	12	21	23	0	56	62	36	12	0	110	316
4:15 PM	5	46	9	0	60	13	30	1	0	44	12	27	27	0	66	33	31	6	0	70	240
4:30 PM	25	45	5	0	75	23	52	0	0	75	14	22	31	0	67	65	40	8	0	113	330
4:45 PM	10	39	9	0	58	7	46	0	0	53	9	20	32	1	62	43	41	8	0	92	265
Total	57	174	45	0	276	61	177	1	0	239	47	90	113	1	251	203	148	34	0	385	1151
5:00 PM	10	47	10	0	67	11	50	0	0	61	6	29	51	0	86	56	36	10	0	102	316
5:15 PM	9	45	13	0	67	22	64	0	0	86	13	26	47	0	86	47	40	9	0	96	335
5:30 PM	25	44	9	0	78	18	44	0	0	62	13	13	38	0	64	66	43	5	0	114	318
5:45 PM	11	39	12	0	62	19	78	0	0	97	11	12	55	0	78	60	45	9	0	114	351
Total	55	175	44	0	274	70	236	0	0	306	43	80	191	0	314	229	164	33	0	426	1320
Grand Total	112	349	89	0	550	131	413	1	0	545	90	170	304	1	565	432	312	67	0	811	2471
Approach %	20.4	63.5	16.2	0.0		24.0	75.8	0.2	0.0		15.9	30.1	53.8	0.2		53.3	38.5	8.3	0.0		
Total %	4.5	14.1	3.6	0.0	22.3	5.3	16.7	0.0	0.0	22.1	3.6	6.9	12.3	0.0	22.9	17.5	12.6	2.7	0.0	32.8	
Exiting Leg Total					368					491					783					829	2471
Cars	108	345	86	0	539	131	411	1	0	543	90	169	301	1	561	426	307	66	0	799	2442
% Cars	96.4	98.9	96.6	0.0	98.0	100.0	99.5	100.0	0.0	99.6	100.0	99.4	99.0	100.0	99.3	98.6	98.4	98.5	0.0	98.5	98.8
Exiting Leg Total					366					483					773					820	2442
Heavy Vehicles	4	4	3	0	11	0	2	0	0	2	0	1	3	0	4	6	5	1	0	12	29
% Heavy Vehicles	3.6	1.1	3.4	0.0	2.0	0.0	0.5	0.0	0.0	0.4	0.0	0.6	1.0	0.0	0.7	1.4	1.6	1.5	0.0	1.5	1.2
Exiting Leg Total					2					8					10					9	29

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
5:00 PM	10	47	10	0	67	11	50	0	0	61	6	29	51	0	86	56	36	10	0	102	316
5:15 PM	9	45	13	0	67	22	64	0	0	86	13	26	47	0	86	47	40	9	0	96	335
5:30 PM	25	44	9	0	78	18	44	0	0	62	13	13	38	0	64	66	43	5	0	114	318
5:45 PM	11	39	12	0	62	19	78	0	0	97	11	12	55	0	78	60	45	9	0	114	351
Total Volume	55	175	44	0	274	70	236	0	0	306	43	80	191	0	314	229	164	33	0	426	1320
% Approach Total	20.1	63.9	16.1	0.0		22.9	77.1	0.0	0.0		13.7	25.5	60.8	0.0		53.8	38.5	7.7	0.0		
PHF	0.550	0.931	0.846	0.000	0.878	0.795	0.756	0.000	0.000	0.789	0.827	0.690	0.868	0.000	0.913	0.867	0.911	0.825	0.000	0.934	0.940
Cars	51	174	42	0	267	70	234	0	0	304	43	79	190	0	312	226	162	32	0	420	1303
Cars %	92.7	99.4	95.5	0.0	97.4	100.0	99.2	0.0	0.0	99.3	100.0	98.8	99.5	0.0	99.4	98.7	98.8	97.0	0.0	98.6	98.7
Heavy Vehicles	4	1	2	0	7	0	2	0	0	2	0	1	1	0	2	3	2	1	0	6	17
Heavy Vehicles %	7.3	0.6	4.5	0.0	2.6	0.0	0.8	0.0	0.0	0.7	0.0	1.3	0.5	0.0	0.6	1.3	1.2	3.0	0.0	1.4	1.3
Cars Enter Leg	51	174	42	0	267	70	234	0	0	304	43	79	190	0	312	226	162	32	0	420	1303
Heavy Enter Leg	4	1	2	0	7	0	2	0	0	2	0	1	1	0	2	3	2	1	0	6	17
Total Entering Leg	55	175	44	0	274	70	236	0	0	306	43	80	191	0	314	229	164	33	0	426	1320
Cars Exiting Leg					181					247					400					475	1303
Heavy Exiting Leg					2					4					4					7	17
Total Exiting Leg					183					251					404					482	1320

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Cars**

	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	17	43	21	0	81	18	49	0	0	67	12	21	22	0	55	62	35	12	0	109	312
4:15 PM	5	46	9	0	60	13	30	1	0	44	12	27	26	0	65	33	29	6	0	68	237
4:30 PM	25	44	5	0	74	23	52	0	0	75	14	22	31	0	67	64	40	8	0	112	328
4:45 PM	10	38	9	0	57	7	46	0	0	53	9	20	32	1	62	41	41	8	0	90	262
Total	57	171	44	0	272	61	177	1	0	239	47	90	111	1	249	200	145	34	0	379	1139
5:00 PM	9	46	10	0	65	11	50	0	0	61	6	29	50	0	85	56	36	10	0	102	313
5:15 PM	9	45	12	0	66	22	62	0	0	84	13	25	47	0	85	46	39	9	0	94	329
5:30 PM	22	44	8	0	74	18	44	0	0	62	13	13	38	0	64	66	42	4	0	112	312
5:45 PM	11	39	12	0	62	19	78	0	0	97	11	12	55	0	78	58	45	9	0	112	349
Total	51	174	42	0	267	70	234	0	0	304	43	79	190	0	312	226	162	32	0	420	1303
Grand Total	108	345	86	0	539	131	411	1	0	543	90	169	301	1	561	426	307	66	0	799	2442
Approach %	20.0	64.0	16.0	0.0		24.1	75.7	0.2	0.0		16.0	30.1	53.7	0.2		53.3	38.4	8.3	0.0		
Total %	4.4	14.1	3.5	0.0	22.1	5.4	16.8	0.0	0.0	22.2	3.7	6.9	12.3	0.0	23.0	17.4	12.6	2.7	0.0	32.7	
Exiting Leg Total					366					483					773					820	2442

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
5:00 PM	9	46	10	0	65	11	50	0	0	61	6	29	50	0	85	56	36	10	0	102	313
5:15 PM	9	45	12	0	66	22	62	0	0	84	13	25	47	0	85	46	39	9	0	94	329
5:30 PM	22	44	8	0	74	18	44	0	0	62	13	13	38	0	64	66	42	4	0	112	312
5:45 PM	11	39	12	0	62	19	78	0	0	97	11	12	55	0	78	58	45	9	0	112	349
Total Volume	51	174	42	0	267	70	234	0	0	304	43	79	190	0	312	226	162	32	0	420	1303
% Approach Total	19.1	65.2	15.7	0.0		23.0	77.0	0.0	0.0		13.8	25.3	60.9	0.0		53.8	38.6	7.6	0.0		
PHF	0.580	0.946	0.875	0.000	0.902	0.795	0.750	0.000	0.000	0.784	0.827	0.681	0.864	0.000	0.918	0.856	0.900	0.800	0.000	0.938	0.933
Entering Leg	51	174	42	0	267	70	234	0	0	304	43	79	190	0	312	226	162	32	0	420	1303
Exiting Leg					181					247					400					475	1303
Total					448					551					712					895	2606

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	1	1	0	2	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	4
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	0	2	3
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3
Total	0	3	1	0	4	0	0	0	0	0	0	0	2	0	2	3	3	0	0	6	12
5:00 PM	1	1	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
5:15 PM	0	0	1	0	1	0	2	0	0	2	0	1	0	0	1	1	1	0	0	2	6
5:30 PM	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	6
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
Total	4	1	2	0	7	0	2	0	0	2	0	1	1	0	2	3	2	1	0	6	17
Grand Total	4	4	3	0	11	0	2	0	0	2	0	1	3	0	4	6	5	1	0	12	29
Approach %	36.4	36.4	27.3	0.0		0.0	100.0	0.0	0.0		0.0	25.0	75.0	0.0		50.0	41.7	8.3	0.0		
Total %	13.8	13.8	10.3	0.0	37.9	0.0	6.9	0.0	0.0	6.9	0.0	3.4	10.3	0.0	13.8	20.7	17.2	3.4	0.0	41.4	
Exiting Leg Total					2					8					10					9	29
Buses	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3
% Buses	25.0	0.0	0.0	0.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	100.0	0.0	16.7	10.3
Exiting Leg Total					1					0					1					1	3
Single-Unit Trucks	1	4	3	0	8	0	2	0	0	2	0	1	3	0	4	3	4	0	0	7	21
% Single-Unit	25.0	100.0	100.0	0.0	72.7	0.0	100.0	0.0	0.0	100.0	0.0	100.0	100.0	0.0	100.0	50.0	80.0	0.0	0.0	58.3	72.4
Exiting Leg Total					1					7					7					6	21
Articulated Trucks	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	5
% Articulated	50.0	0.0	0.0	0.0	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	20.0	0.0	0.0	25.0	17.2
Exiting Leg Total					0					1					2					2	5

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:45 PM	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3
5:00 PM	1	1	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
5:15 PM	0	0	1	0	1	0	2	0	0	2	0	1	0	0	1	1	1	0	0	2	6
5:30 PM	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	6
Total Volume	4	2	2	0	8	0	2	0	0	2	0	1	1	0	2	3	2	1	0	6	18
% Approach Total	50.0	25.0	25.0	0.0		0.0	100.0	0.0	0.0		0.0	50.0	50.0	0.0		50.0	33.3	16.7	0.0		
PHF	0.333	0.500	0.500	0.000	0.500	0.000	0.250	0.000	0.000	0.250	0.000	0.250	0.250	0.000	0.500	0.375	0.500	0.250	0.000	0.750	0.750
Buses	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Buses %	25.0	0.0	0.0	0.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	16.7	11.1
Single-Unit Trucks	1	2	2	0	5	0	2	0	0	2	0	1	1	0	2	1	2	0	0	3	12
Single-Unit %	25.0	100.0	100.0	0.0	62.5	0.0	100.0	0.0	0.0	100.0	0.0	100.0	100.0	0.0	100.0	33.3	100.0	0.0	0.0	50.0	66.7
Articulated Trucks	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	4
Articulated %	50.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7	0.0	0.0	0.0	33.3	22.2
Buses	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Single-Unit Trucks	1	2	2	0	5	0	2	0	0	2	0	1	1	0	2	1	2	0	0	3	12
Articulated Trucks	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	4
Total Entering Leg	4	2	2	0	8	0	2	0	0	2	0	1	1	0	2	3	2	1	0	6	18
Buses					1					0					0					1	2
Single-Unit Trucks					1					4					3					4	12
Articulated Trucks					0					0					2					2	4
Total Exiting Leg					2					4					5					7	18

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Buses

	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	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	0	0	0	0
5:00 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3
Grand Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3
Approach %	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		50.0	0.0	50.0	0.0		
Total %	33.3	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	33.3	0.0	66.7	
Exiting Leg Total					1					0					1					1	3

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
5:00 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total Volume	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3
% Approach Total	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		50.0	0.0	50.0	0.0		
PHF	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.500	0.750
Entering Leg	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3
Exiting Leg					1					0					1					1	3
Total					2					0					1					3	6

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Single-Unit Trucks**

	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	1	1	0	2	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	4
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	2
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	3	1	0	4	0	0	0	0	0	0	0	2	0	2	1	2	0	0	3	9
5:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
5:15 PM	0	0	1	0	1	0	2	0	0	2	0	1	0	0	1	1	1	0	0	2	6
5:30 PM	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	1	1	2	0	4	0	2	0	0	2	0	1	1	0	2	2	2	0	0	4	12
Grand Total	1	4	3	0	8	0	2	0	0	2	0	1	3	0	4	3	4	0	0	7	21
Approach %	12.5	50.0	37.5	0.0		0.0	100.0	0.0	0.0		0.0	25.0	75.0	0.0		42.9	57.1	0.0	0.0		
Total %	4.8	19.0	14.3	0.0	38.1	0.0	9.5	0.0	0.0	9.5	0.0	4.8	14.3	0.0	19.0	14.3	19.0	0.0	0.0	33.3	
Exiting Leg Total					1					7					7					6	21

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:45 PM	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
5:15 PM	0	0	1	0	1	0	2	0	0	2	0	1	0	0	1	1	1	0	0	2	6
5:30 PM	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
Total Volume	1	2	2	0	5	0	2	0	0	2	0	1	1	0	2	1	2	0	0	3	12
% Approach Total	20.0	40.0	40.0	0.0		0.0	100.0	0.0	0.0		0.0	50.0	50.0	0.0		33.3	66.7	0.0	0.0		
PHF	0.250	0.500	0.500	0.000	0.625	0.000	0.250	0.000	0.000	0.250	0.000	0.250	0.250	0.000	0.500	0.250	0.500	0.000	0.000	0.375	0.500
Entering Leg	1	2	2	0	5	0	2	0	0	2	0	1	1	0	2	1	2	0	0	3	12
Exiting Leg					1					4					3					4	12
Total					6					6					5					7	24

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Articulated Trucks

	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	5
Approach %	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		66.7	33.3	0.0	0.0		
Total %	40.0	0.0	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	20.0	0.0	0.0	60.0	
Exiting Leg Total					0					1					2					2	5

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:45 PM	Highland Avenue					Great Plain Avenue (Route 135)					Dedham Avenue					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	4
% Approach Total	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.500
Entering Leg	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	4
Exiting Leg					0					0					2					2	4
Total					2					0					2					4	8

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Highland Avenue							Great Plain Avenue (Route 135)							Dedham Avenue							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
Grand Total	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
Approach %	0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	50.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total							0							1							1							0	2

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:45 PM	Highland Avenue							Great Plain Avenue (Route 135)							Dedham Avenue							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total Volume	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
% Approach Total	0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
Exiting Leg							0							1							1							0	2
Total							1							1							2							0	4

PDI File #: **239698 A**
Location: **N: Highland Avenue S: Dedham Avenue**
Location: **E: Great Plain Avenue (Route 135) W: Great Plain Avenue (Route 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Highland Avenue							Great Plain Avenue (Route 135)							Dedham Avenue							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	0	3	5	8	0	0	0	0	4	8	12	0	0	0	0	4	6	10	0	0	0	0	1	3	4	34
4:15 PM	0	0	0	0	2	0	2	0	0	0	0	3	1	4	0	0	0	0	0	3	3	0	0	0	0	0	0	0	9
4:30 PM	0	0	0	0	5	3	8	0	0	0	0	6	0	6	0	0	0	0	8	7	15	0	0	0	0	1	0	1	30
4:45 PM	0	0	0	0	2	2	4	0	0	0	0	4	9	13	0	0	0	0	3	11	14	0	0	0	0	1	1	2	33
Total	0	0	0	0	12	10	22	0	0	0	0	17	18	35	0	0	0	0	15	27	42	0	0	0	0	3	4	7	106
5:00 PM	0	0	0	0	1	1	2	0	0	0	0	4	1	5	0	0	0	0	4	5	9	0	0	0	0	2	4	6	22
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	4	5	9	0	0	0	0	2	1	3	13
5:30 PM	0	0	0	0	2	7	9	0	0	0	0	0	0	0	0	0	0	0	5	2	7	0	0	0	0	1	6	7	23
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	6	7	0	0	0	0	3	3	6	0	0	0	0	0	7	7	20
Total	0	0	0	0	3	8	11	0	0	0	0	5	8	13	0	0	0	0	16	15	31	0	0	0	0	5	18	23	78
Grand Total	0	0	0	0	15	18	33	0	0	0	0	22	26	48	0	0	0	0	31	42	73	0	0	0	0	8	22	30	184
Approach %	0	0	0	0	45.5	54.5		0	0	0	0	45.8	54.2		0	0	0	0	42.5	57.5		0	0	0	0	26.7	73.3		
Total %	0	0	0	0	8.15	9.78	17.9	0	0	0	0	12	14.1	26.1	0	0	0	0	16.8	22.8	39.7	0	0	0	0	4.35	12	16.3	
Exiting Leg Total							33							48							73							30	184

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Highland Avenue							Great Plain Avenue (Route 135)							Dedham Avenue							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	0	3	5	8	0	0	0	0	4	8	12	0	0	0	0	4	6	10	0	0	0	0	1	3	4	34
4:15 PM	0	0	0	0	2	0	2	0	0	0	0	3	1	4	0	0	0	0	0	3	3	0	0	0	0	0	0	0	9
4:30 PM	0	0	0	0	5	3	8	0	0	0	0	6	0	6	0	0	0	0	8	7	15	0	0	0	0	1	0	1	30
4:45 PM	0	0	0	0	2	2	4	0	0	0	0	4	9	13	0	0	0	0	3	11	14	0	0	0	0	1	1	2	33
Total Volume	0	0	0	0	12	10	22	0	0	0	0	17	18	35	0	0	0	0	15	27	42	0	0	0	0	3	4	7	106
% Approach Total	0.0	0.0	0.0	0.0	54.5	45.5		0.0	0.0	0.0	0.0	48.6	51.4		0.0	0.0	0.0	0.0	35.7	64.3		0.0	0.0	0.0	0.0	42.9	57.1		
PHF	0.000	0.000	0.000	0.000	0.600	0.500	0.688	0.000	0.000	0.000	0.000	0.708	0.500	0.673	0.000	0.000	0.000	0.000	0.469	0.614	0.700	0.000	0.000	0.000	0.000	0.750	0.333	0.438	0.779
Entering Leg	0	0	0	0	12	10	22	0	0	0	0	17	18	35	0	0	0	0	15	27	42	0	0	0	0	3	4	7	106
Exiting Leg							22							35							42							7	106
Total							44							70							84							14	212

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	5	16	1	0	22	3	38	4	0	45	4	33	9	0	46	7	62	5	0	74	187
7:15 AM	10	31	3	0	44	2	70	7	0	79	7	38	8	0	53	7	77	7	0	91	267
7:30 AM	11	28	5	0	44	6	89	5	0	100	8	57	10	0	75	10	174	11	0	195	414
7:45 AM	5	40	4	0	49	4	138	4	0	146	10	66	16	0	92	13	123	10	0	146	433
Total	31	115	13	0	159	15	335	20	0	370	29	194	43	0	266	37	436	33	0	506	1301
8:00 AM	18	35	6	0	59	4	112	11	0	127	12	51	25	0	88	15	113	15	0	143	417
8:15 AM	7	34	3	0	44	5	88	16	0	109	14	46	16	0	76	19	70	7	0	96	325
8:30 AM	13	34	12	0	59	7	98	11	0	116	17	59	18	0	94	18	70	15	0	103	372
8:45 AM	10	38	9	0	57	12	101	12	0	125	12	52	22	0	86	24	93	18	0	135	403
Total	48	141	30	0	219	28	399	50	0	477	55	208	81	0	344	76	346	55	0	477	1517
Grand Total	79	256	43	0	378	43	734	70	0	847	84	402	124	0	610	113	782	88	0	983	2818
Approach %	20.9	67.7	11.4	0.0		5.1	86.7	8.3	0.0		13.8	65.9	20.3	0.0		11.5	79.6	9.0	0.0		
Total %	2.8	9.1	1.5	0.0	13.4	1.5	26.0	2.5	0.0	30.1	3.0	14.3	4.4	0.0	21.6	4.0	27.8	3.1	0.0	34.9	
Exiting Leg Total					533					909					439					937	2818
Cars	74	239	43	0	356	41	715	69	0	825	83	372	120	0	575	109	766	83	0	958	2714
% Cars	93.7	93.4	100.0	0.0	94.2	95.3	97.4	98.6	0.0	97.4	98.8	92.5	96.8	0.0	94.3	96.5	98.0	94.3	0.0	97.5	96.3
Exiting Leg Total					496					892					417					909	2714
Heavy Vehicles	5	17	0	0	22	2	19	1	0	22	1	30	4	0	35	4	16	5	0	25	104
% Heavy Vehicles	6.3	6.6	0.0	0.0	5.8	4.7	2.6	1.4	0.0	2.6	1.2	7.5	3.2	0.0	5.7	3.5	2.0	5.7	0.0	2.5	3.7
Exiting Leg Total					37					17					22					28	104

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:30 AM	11	28	5	0	44	6	89	5	0	100	8	57	10	0	75	10	174	11	0	195	414
7:45 AM	5	40	4	0	49	4	138	4	0	146	10	66	16	0	92	13	123	10	0	146	433
8:00 AM	18	35	6	0	59	4	112	11	0	127	12	51	25	0	88	15	113	15	0	143	417
8:15 AM	7	34	3	0	44	5	88	16	0	109	14	46	16	0	76	19	70	7	0	96	325
Total Volume	41	137	18	0	196	19	427	36	0	482	44	220	67	0	331	57	480	43	0	580	1589
% Approach Total	20.9	69.9	9.2	0.0		3.9	88.6	7.5	0.0		13.3	66.5	20.2	0.0		9.8	82.8	7.4	0.0		
PHF	0.569	0.856	0.750	0.000	0.831	0.792	0.774	0.563	0.000	0.825	0.786	0.833	0.670	0.000	0.899	0.750	0.690	0.717	0.000	0.744	0.917
Cars	38	127	18	0	183	19	418	36	0	473	43	198	64	0	305	57	471	41	0	569	1530
Cars %	92.7	92.7	100.0	0.0	93.4	100.0	97.9	100.0	0.0	98.1	97.7	90.0	95.5	0.0	92.1	100.0	98.1	95.3	0.0	98.1	96.3
Heavy Vehicles	3	10	0	0	13	0	9	0	0	9	1	22	3	0	26	0	9	2	0	11	59
Heavy Vehicles %	7.3	7.3	0.0	0.0	6.6	0.0	2.1	0.0	0.0	1.9	2.3	10.0	4.5	0.0	7.9	0.0	1.9	4.7	0.0	1.9	3.7
Cars Enter Leg	38	127	18	0	183	19	418	36	0	473	43	198	64	0	305	57	471	41	0	569	1530
Heavy Enter Leg	3	10	0	0	13	0	9	0	0	9	1	22	3	0	26	0	9	2	0	11	59
Total Entering Leg	41	137	18	0	196	19	427	36	0	482	44	220	67	0	331	57	480	43	0	580	1589
Cars Exiting Leg					258					532					220					520	1530
Heavy Exiting Leg					24					10					10					15	59
Total Exiting Leg					282					542					230					535	1589

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Cars**

	Chapel Street from North					Great Plain Avenue (Route 135) from East					Chestnut Street from South					Great Plain Avenue (Route 135) from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	5	14	1	0	20	3	34	4	0	41	4	32	9	0	45	6	61	4	0	71	177
7:15 AM	8	30	3	0	41	2	67	7	0	76	7	36	8	0	51	6	76	7	0	89	257
7:30 AM	8	26	5	0	39	6	89	5	0	100	8	54	9	0	71	10	174	10	0	194	404
7:45 AM	5	40	4	0	49	4	135	4	0	143	10	54	16	0	80	13	120	10	0	143	415
Total	26	110	13	0	149	15	325	20	0	360	29	176	42	0	247	35	431	31	0	497	1253
8:00 AM	18	29	6	0	53	4	109	11	0	124	11	47	24	0	82	15	109	14	0	138	397
8:15 AM	7	32	3	0	42	5	85	16	0	106	14	43	15	0	72	19	68	7	0	94	314
8:30 AM	13	33	12	0	58	7	98	10	0	115	17	57	18	0	92	16	67	13	0	96	361
8:45 AM	10	35	9	0	54	10	98	12	0	120	12	49	21	0	82	24	91	18	0	133	389
Total	48	129	30	0	207	26	390	49	0	465	54	196	78	0	328	74	335	52	0	461	1461
Grand Total	74	239	43	0	356	41	715	69	0	825	83	372	120	0	575	109	766	83	0	958	2714
Approach %	20.8	67.1	12.1	0.0		5.0	86.7	8.4	0.0		14.4	64.7	20.9	0.0		11.4	80.0	8.7	0.0		
Total %	2.7	8.8	1.6	0.0	13.1	1.5	26.3	2.5	0.0	30.4	3.1	13.7	4.4	0.0	21.2	4.0	28.2	3.1	0.0	35.3	
Exiting Leg Total					496					892					417					909	2714

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Chapel Street from North					Great Plain Avenue (Route 135) from East					Chestnut Street from South					Great Plain Avenue (Route 135) from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:30 AM	8	26	5	0	39	6	89	5	0	100	8	54	9	0	71	10	174	10	0	194	404
7:45 AM	5	40	4	0	49	4	135	4	0	143	10	54	16	0	80	13	120	10	0	143	415
8:00 AM	18	29	6	0	53	4	109	11	0	124	11	47	24	0	82	15	109	14	0	138	397
8:15 AM	7	32	3	0	42	5	85	16	0	106	14	43	15	0	72	19	68	7	0	94	314
Total Volume	38	127	18	0	183	19	418	36	0	473	43	198	64	0	305	57	471	41	0	569	1530
% Approach Total	20.8	69.4	9.8	0.0		4.0	88.4	7.6	0.0		14.1	64.9	21.0	0.0		10.0	82.8	7.2	0.0		
PHF	0.528	0.794	0.750	0.000	0.863	0.792	0.774	0.563	0.000	0.827	0.768	0.917	0.667	0.000	0.930	0.750	0.677	0.732	0.000	0.733	0.922
Entering Leg	38	127	18	0	183	19	418	36	0	473	43	198	64	0	305	57	471	41	0	569	1530
Exiting Leg					258					532					220					520	1530
Total					441					1005					525					1089	3060

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Chapel Street from North					Great Plain Avenue (Route 135) from East					Chestnut Street from South					Great Plain Avenue (Route 135) from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	2	0	0	2	0	4	0	0	4	0	1	0	0	1	1	1	1	0	3	10
7:15 AM	2	1	0	0	3	0	3	0	0	3	0	2	0	0	2	1	1	0	0	2	10
7:30 AM	3	2	0	0	5	0	0	0	0	0	0	3	1	0	4	0	0	1	0	1	10
7:45 AM	0	0	0	0	0	0	3	0	0	3	0	12	0	0	12	0	3	0	0	3	18
Total	5	5	0	0	10	0	10	0	0	10	0	18	1	0	19	2	5	2	0	9	48
8:00 AM	0	6	0	0	6	0	3	0	0	3	1	4	1	0	6	0	4	1	0	5	20
8:15 AM	0	2	0	0	2	0	3	0	0	3	0	3	1	0	4	0	2	0	0	2	11
8:30 AM	0	1	0	0	1	0	0	1	0	1	0	2	0	0	2	2	3	2	0	7	11
8:45 AM	0	3	0	0	3	2	3	0	0	5	0	3	1	0	4	0	2	0	0	2	14
Total	0	12	0	0	12	2	9	1	0	12	1	12	3	0	16	2	11	3	0	16	56
Grand Total	5	17	0	0	22	2	19	1	0	22	1	30	4	0	35	4	16	5	0	25	104
Approach %	22.7	77.3	0.0	0.0		9.1	86.4	4.5	0.0		2.9	85.7	11.4	0.0		16.0	64.0	20.0	0.0		
Total %	4.8	16.3	0.0	0.0	21.2	1.9	18.3	1.0	0.0	21.2	1.0	28.8	3.8	0.0	33.7	3.8	15.4	4.8	0.0	24.0	
Exiting Leg Total					37					17					22					28	104
Buses	0	5	0	0	5	0	8	0	0	8	0	4	1	0	5	0	5	0	0	5	23
% Buses	0.0	29.4	0.0	0.0	22.7	0.0	42.1	0.0	0.0	36.4	0.0	13.3	25.0	0.0	14.3	0.0	31.3	0.0	0.0	20.0	22.1
Exiting Leg Total					4					5					5					9	23
Single-Unit Trucks	3	10	0	0	13	2	7	1	0	10	1	16	3	0	20	3	10	4	0	17	60
% Single-Unit	60.0	58.8	0.0	0.0	59.1	100.0	36.8	100.0	0.0	45.5	100.0	53.3	75.0	0.0	57.1	75.0	62.5	80.0	0.0	68.0	57.7
Exiting Leg Total					22					11					14					13	60
Articulated Trucks	2	2	0	0	4	0	4	0	0	4	0	10	0	0	10	1	1	1	0	3	21
% Articulated	40.0	11.8	0.0	0.0	18.2	0.0	21.1	0.0	0.0	18.2	0.0	33.3	0.0	0.0	28.6	25.0	6.3	20.0	0.0	12.0	20.2
Exiting Leg Total					11					1					3					6	21

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:45 AM	Chapel Street from North					Great Plain Avenue (Route 135) from East					Chestnut Street from South					Great Plain Avenue (Route 135) from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:45 AM	0	0	0	0	0	0	3	0	0	3	0	12	0	0	12	0	3	0	0	3	18
8:00 AM	0	6	0	0	6	0	3	0	0	3	1	4	1	0	6	0	4	1	0	5	20
8:15 AM	0	2	0	0	2	0	3	0	0	3	0	3	1	0	4	0	2	0	0	2	11
8:30 AM	0	1	0	0	1	0	0	1	0	1	0	2	0	0	2	2	3	2	0	7	11
Total Volume	0	9	0	0	9	0	9	1	0	10	1	21	2	0	24	2	12	3	0	17	60
% Approach Total	0.0	100.0	0.0	0.0		0.0	90.0	10.0	0.0		4.2	87.5	8.3	0.0		11.8	70.6	17.6	0.0		
PHF	0.000	0.375	0.000	0.000	0.375	0.000	0.750	0.250	0.000	0.833	0.250	0.438	0.500	0.000	0.500	0.250	0.750	0.375	0.000	0.607	0.750
Buses	0	2	0	0	2	0	5	0	0	5	0	3	0	0	3	0	5	0	0	5	15
Buses %	0.0	22.2	0.0	0.0	22.2	0.0	55.6	0.0	0.0	50.0	0.0	14.3	0.0	0.0	12.5	0.0	41.7	0.0	0.0	29.4	25.0
Single-Unit Trucks	0	7	0	0	7	0	2	1	0	3	1	10	2	0	13	1	6	3	0	10	33
Single-Unit %	0.0	77.8	0.0	0.0	77.8	0.0	22.2	100.0	0.0	30.0	100.0	47.6	100.0	0.0	54.2	50.0	50.0	100.0	0.0	58.8	55.0
Articulated Trucks	0	0	0	0	0	0	2	0	0	2	0	8	0	0	8	1	1	0	0	2	12
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	0.0	20.0	0.0	38.1	0.0	0.0	33.3	50.0	8.3	0.0	0.0	11.8	20.0
Buses	0	2	0	0	2	0	5	0	0	5	0	3	0	0	3	0	5	0	0	5	15
Single-Unit Trucks	0	7	0	0	7	0	2	1	0	3	1	10	2	0	13	1	6	3	0	10	33
Articulated Trucks	0	0	0	0	0	0	2	0	0	2	0	8	0	0	8	1	1	0	0	2	12
Total Entering Leg	0	9	0	0	9	0	9	1	0	10	1	21	2	0	24	2	12	3	0	17	60
Buses					3					5					2					5	15
Single-Unit Trucks					13					7					9					4	33
Articulated Trucks					8					1					1					2	12
Total Exiting Leg					24					13					12					11	60

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Buses**

	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	4
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	3
Total	0	2	0	0	2	0	4	0	0	4	0	2	1	0	3	0	1	0	0	1	10
8:00 AM	0	2	0	0	2	0	3	0	0	3	0	1	0	0	1	0	1	0	0	1	7
8:15 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
8:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	3	0	0	3	0	4	0	0	4	0	2	0	0	2	0	4	0	0	4	13
Grand Total	0	5	0	0	5	0	8	0	0	8	0	4	1	0	5	0	5	0	0	5	23
Approach %	0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	80.0	20.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	21.7	0.0	0.0	21.7	0.0	34.8	0.0	0.0	34.8	0.0	17.4	4.3	0.0	21.7	0.0	21.7	0.0	0.0	21.7	
Exiting Leg Total					4					5					5					9	23

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	4
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	3
8:00 AM	0	2	0	0	2	0	3	0	0	3	0	1	0	0	1	0	1	0	0	1	7
Total Volume	0	3	0	0	3	0	7	0	0	7	0	3	1	0	4	0	2	0	0	2	16
% Approach Total	0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	75.0	25.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.375	0.000	0.000	0.375	0.000	0.583	0.000	0.000	0.583	0.000	0.750	0.250	0.000	1.000	0.000	0.500	0.000	0.000	0.500	0.571
Entering Leg	0	3	0	0	3	0	7	0	0	7	0	3	1	0	4	0	2	0	0	2	16
Exiting Leg					3					2					3					8	16
Total					6					9					7					10	32

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Single-Unit Trucks

	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	1	1	1	0	3	7
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	2	4
7:30 AM	3	0	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	5	0	0	5	0	2	0	0	2	8
Total	3	1	0	0	4	0	4	0	0	4	0	9	0	0	9	2	4	1	0	7	24
8:00 AM	0	4	0	0	4	0	0	0	0	0	1	2	1	0	4	0	3	1	0	4	12
8:15 AM	0	2	0	0	2	0	1	0	0	1	0	1	1	0	2	0	1	0	0	1	6
8:30 AM	0	1	0	0	1	0	0	1	0	1	0	2	0	0	2	1	0	2	0	3	7
8:45 AM	0	2	0	0	2	2	2	0	0	4	0	2	1	0	3	0	2	0	0	2	11
Total	0	9	0	0	9	2	3	1	0	6	1	7	3	0	11	1	6	3	0	10	36
Grand Total	3	10	0	0	13	2	7	1	0	10	1	16	3	0	20	3	10	4	0	17	60
Approach %	23.1	76.9	0.0	0.0		20.0	70.0	10.0	0.0		5.0	80.0	15.0	0.0		17.6	58.8	23.5	0.0		
Total %	5.0	16.7	0.0	0.0	21.7	3.3	11.7	1.7	0.0	16.7	1.7	26.7	5.0	0.0	33.3	5.0	16.7	6.7	0.0	28.3	
Exiting Leg Total					22					11					14					13	60

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
8:00 AM	0	4	0	0	4	0	0	0	0	0	1	2	1	0	4	0	3	1	0	4	12
8:15 AM	0	2	0	0	2	0	1	0	0	1	0	1	1	0	2	0	1	0	0	1	6
8:30 AM	0	1	0	0	1	0	0	1	0	1	0	2	0	0	2	1	0	2	0	3	7
8:45 AM	0	2	0	0	2	2	2	0	0	4	0	2	1	0	3	0	2	0	0	2	11
Total Volume	0	9	0	0	9	2	3	1	0	6	1	7	3	0	11	1	6	3	0	10	36
% Approach Total	0.0	100.0	0.0	0.0		33.3	50.0	16.7	0.0		9.1	63.6	27.3	0.0		10.0	60.0	30.0	0.0		
PHF	0.000	0.563	0.000	0.000	0.563	0.250	0.375	0.250	0.000	0.375	0.250	0.875	0.750	0.000	0.688	0.250	0.500	0.375	0.000	0.625	0.750
Entering Leg	0	9	0	0	9	2	3	1	0	6	1	7	3	0	11	1	6	3	0	10	36
Exiting Leg					12					7					11					6	36
Total					21					13					22					16	72

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Articulated Trucks

	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	3
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	6	0	0	6	0	0	0	0	0	7
Total	2	2	0	0	4	0	2	0	0	2	0	7	0	0	7	0	0	1	0	1	14
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
8:45 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	2
Total	0	0	0	0	0	0	2	0	0	2	0	3	0	0	3	1	1	0	0	2	7
Grand Total	2	2	0	0	4	0	4	0	0	4	0	10	0	0	10	1	1	1	0	3	21
Approach %	50.0	50.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		33.3	33.3	33.3	0.0		
Total %	9.5	9.5	0.0	0.0	19.0	0.0	19.0	0.0	0.0	19.0	0.0	47.6	0.0	0.0	47.6	4.8	4.8	4.8	0.0	14.3	
Exiting Leg Total					11					1					3					6	21

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	3
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	6	0	0	6	0	0	0	0	0	7
Total Volume	2	2	0	0	4	0	2	0	0	2	0	7	0	0	7	0	0	1	0	1	14
% Approach Total	50.0	50.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		
PHF	0.250	0.500	0.000	0.000	0.500	0.000	0.500	0.000	0.000	0.500	0.000	0.292	0.000	0.000	0.292	0.000	0.000	0.250	0.000	0.250	0.500
Entering Leg	2	2	0	0	4	0	2	0	0	2	0	7	0	0	7	0	0	1	0	1	14
Exiting Leg					8					0					2					4	14
Total					12					2					9					5	28

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Chapel Street							Great Plain Avenue (Route 135)							Chestnut Street							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Approach %	0.0	0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total							0							2							0							0	2

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Chapel Street							Great Plain Avenue (Route 135)							Chestnut Street							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	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	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Approach Total	0.0	0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Exiting Leg							0							2							0							0	2
Total							2							2							0							0	4

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Chapel Street							Great Plain Avenue (Route 135)							Chestnut Street							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	2	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	0	0	0	0	0	3	3	7
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	1	1	2	4
7:45 AM	0	0	0	0	1	1	2	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	1	1	5
Total	0	0	0	0	1	3	4	0	0	0	0	1	1	2	0	0	0	0	2	5	7	0	0	0	0	1	5	6	19
8:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	3
8:15 AM	0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	1	1	4
8:30 AM	0	0	0	0	2	0	2	0	0	0	0	1	1	2	0	0	0	0	0	1	1	0	0	0	0	4	1	5	10
8:45 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Total	0	0	0	0	4	1	5	0	0	0	0	1	2	3	0	0	0	0	1	2	3	0	0	0	0	6	2	8	19
Grand Total	0	0	0	0	5	4	9	0	0	0	0	2	3	5	0	0	0	0	3	7	10	0	0	0	0	7	7	14	38
Approach %	0	0	0	0	55.6	44.4		0	0	0	0	40	60		0	0	0	0	30	70		0	0	0	0	50	50		
Total %	0	0	0	0	13.2	10.5	23.7	0	0	0	0	5.26	7.89	13.2	0	0	0	0	7.89	18.4	26.3	0	0	0	0	18.4	18.4	36.8	
Exiting Leg Total							9							5							10							14	38

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:45 AM	Chapel Street							Great Plain Avenue (Route 135)							Chestnut Street							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:45 AM	0	0	0	0	1	1	2	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	1	1	5
8:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	3
8:15 AM	0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	1	1	4
8:30 AM	0	0	0	0	2	0	2	0	0	0	0	1	1	2	0	0	0	0	0	1	1	0	0	0	0	4	1	5	10
Total Volume	0	0	0	0	5	1	6	0	0	0	0	2	2	4	0	0	0	0	2	2	4	0	0	0	0	5	3	8	22
% Approach Total	0.0	0.0	0.0	0.0	83.3	16.7		0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	0.0	62.5	37.5		
PHF	0.000	0.000	0.000	0.000	0.625	0.250	0.750	0.000	0.000	0.000	0.000	0.500	0.500	0.500	0.000	0.000	0.000	0.000	0.500	0.500	1.000	0.000	0.000	0.000	0.000	0.313	0.750	0.400	0.550
Entering Leg	0	0	0	0	5	1	6	0	0	0	0	2	2	4	0	0	0	0	2	2	4	0	0	0	0	5	3	8	22
Exiting Leg							6							4							4							8	22
Total							12							8							8							16	44

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	22	47	13	0	82	7	61	13	0	81	19	46	34	0	99	9	77	4	0	90	352
4:15 PM	21	42	5	0	68	7	43	8	0	58	7	43	21	0	71	7	58	5	0	70	267
4:30 PM	17	40	7	0	64	4	95	14	0	113	19	45	26	0	90	18	82	7	0	107	374
4:45 PM	20	45	8	0	73	4	70	21	0	95	14	29	20	0	63	14	71	12	0	97	328
Total	80	174	33	0	287	22	269	56	0	347	59	163	101	0	323	48	288	28	0	364	1321
5:00 PM	20	37	3	0	60	9	87	13	0	109	13	32	27	0	72	14	88	7	0	109	350
5:15 PM	12	49	2	0	63	4	96	21	0	121	17	45	21	0	83	18	76	8	0	102	369
5:30 PM	19	39	4	0	62	8	84	19	0	111	19	38	29	0	86	11	94	11	0	116	375
5:45 PM	21	26	6	0	53	10	114	24	0	148	12	26	17	0	55	15	93	6	0	114	370
Total	72	151	15	0	238	31	381	77	0	489	61	141	94	0	296	58	351	32	0	441	1464
Grand Total	152	325	48	0	525	53	650	133	0	836	120	304	195	0	619	106	639	60	0	805	2785
Approach %	29.0	61.9	9.1	0.0		6.3	77.8	15.9	0.0		19.4	49.1	31.5	0.0		13.2	79.4	7.5	0.0		
Total %	5.5	11.7	1.7	0.0	18.9	1.9	23.3	4.8	0.0	30.0	4.3	10.9	7.0	0.0	22.2	3.8	22.9	2.2	0.0	28.9	
Exiting Leg Total					417					807					564					997	2785
Cars	149	318	48	0	515	51	643	130	0	824	119	296	195	0	610	106	630	60	0	796	2745
% Cars	98.0	97.8	100.0	0.0	98.1	96.2	98.9	97.7	0.0	98.6	99.2	97.4	100.0	0.0	98.5	100.0	98.6	100.0	0.0	98.9	98.6
Exiting Leg Total					407					797					554					987	2745
Heavy Vehicles	3	7	0	0	10	2	7	3	0	12	1	8	0	0	9	0	9	0	0	9	40
% Heavy Vehicles	2.0	2.2	0.0	0.0	1.9	3.8	1.1	2.3	0.0	1.4	0.8	2.6	0.0	0.0	1.5	0.0	1.4	0.0	0.0	1.1	1.4
Exiting Leg Total					10					10					10					10	40

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
5:00 PM	20	37	3	0	60	9	87	13	0	109	13	32	27	0	72	14	88	7	0	109	350
5:15 PM	12	49	2	0	63	4	96	21	0	121	17	45	21	0	83	18	76	8	0	102	369
5:30 PM	19	39	4	0	62	8	84	19	0	111	19	38	29	0	86	11	94	11	0	116	375
5:45 PM	21	26	6	0	53	10	114	24	0	148	12	26	17	0	55	15	93	6	0	114	370
Total Volume	72	151	15	0	238	31	381	77	0	489	61	141	94	0	296	58	351	32	0	441	1464
% Approach Total	30.3	63.4	6.3	0.0		6.3	77.9	15.7	0.0		20.6	47.6	31.8	0.0		13.2	79.6	7.3	0.0		
PHF	0.857	0.770	0.625	0.000	0.944	0.775	0.836	0.802	0.000	0.826	0.803	0.783	0.810	0.000	0.860	0.806	0.934	0.727	0.000	0.950	0.976
Cars	70	148	15	0	233	29	376	75	0	480	61	139	94	0	294	58	345	32	0	435	1442
Cars %	97.2	98.0	100.0	0.0	97.9	93.5	98.7	97.4	0.0	98.2	100.0	98.6	100.0	0.0	99.3	100.0	98.3	100.0	0.0	98.6	98.5
Heavy Vehicles	2	3	0	0	5	2	5	2	0	9	0	2	0	0	2	0	6	0	0	6	22
Heavy Vehicles %	2.8	2.0	0.0	0.0	2.1	6.5	1.3	2.6	0.0	1.8	0.0	1.4	0.0	0.0	0.7	0.0	1.7	0.0	0.0	1.4	1.5
Cars Enter Leg	70	148	15	0	233	29	376	75	0	480	61	139	94	0	294	58	345	32	0	435	1442
Heavy Enter Leg	2	3	0	0	5	2	5	2	0	9	0	2	0	0	2	0	6	0	0	6	22
Total Entering Leg	72	151	15	0	238	31	381	77	0	489	61	141	94	0	296	58	351	32	0	441	1464
Cars Exiting Leg					200					421					281					540	1442
Heavy Exiting Leg					4					6					5					7	22
Total Exiting Leg					204					427					286					547	1464

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Cars**

	Chapel Street from North					Great Plain Avenue (Route 135) from East					Chestnut Street from South					Great Plain Avenue (Route 135) from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	21	47	13	0	81	7	60	12	0	79	18	44	34	0	96	9	77	4	0	90	346
4:15 PM	21	40	5	0	66	7	42	8	0	57	7	41	21	0	69	7	58	5	0	70	262
4:30 PM	17	38	7	0	62	4	95	14	0	113	19	44	26	0	89	18	81	7	0	106	370
4:45 PM	20	45	8	0	73	4	70	21	0	95	14	28	20	0	62	14	69	12	0	95	325
Total	79	170	33	0	282	22	267	55	0	344	58	157	101	0	316	48	285	28	0	361	1303
5:00 PM	20	37	3	0	60	9	86	12	0	107	13	32	27	0	72	14	88	7	0	109	348
5:15 PM	12	48	2	0	62	3	95	21	0	119	17	45	21	0	83	18	74	8	0	100	364
5:30 PM	18	39	4	0	61	7	82	18	0	107	19	36	29	0	84	11	92	11	0	114	366
5:45 PM	20	24	6	0	50	10	113	24	0	147	12	26	17	0	55	15	91	6	0	112	364
Total	70	148	15	0	233	29	376	75	0	480	61	139	94	0	294	58	345	32	0	435	1442
Grand Total	149	318	48	0	515	51	643	130	0	824	119	296	195	0	610	106	630	60	0	796	2745
Approach %	28.9	61.7	9.3	0.0		6.2	78.0	15.8	0.0		19.5	48.5	32.0	0.0		13.3	79.1	7.5	0.0		
Total %	5.4	11.6	1.7	0.0	18.8	1.9	23.4	4.7	0.0	30.0	4.3	10.8	7.1	0.0	22.2	3.9	23.0	2.2	0.0	29.0	
Exiting Leg Total					407					797					554					987	2745

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Chapel Street from North					Great Plain Avenue (Route 135) from East					Chestnut Street from South					Great Plain Avenue (Route 135) from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
5:00 PM	20	37	3	0	60	9	86	12	0	107	13	32	27	0	72	14	88	7	0	109	348
5:15 PM	12	48	2	0	62	3	95	21	0	119	17	45	21	0	83	18	74	8	0	100	364
5:30 PM	18	39	4	0	61	7	82	18	0	107	19	36	29	0	84	11	92	11	0	114	366
5:45 PM	20	24	6	0	50	10	113	24	0	147	12	26	17	0	55	15	91	6	0	112	364
Total Volume	70	148	15	0	233	29	376	75	0	480	61	139	94	0	294	58	345	32	0	435	1442
% Approach Total	30.0	63.5	6.4	0.0		6.0	78.3	15.6	0.0		20.7	47.3	32.0	0.0		13.3	79.3	7.4	0.0		
PHF	0.875	0.771	0.625	0.000	0.940	0.725	0.832	0.781	0.000	0.816	0.803	0.772	0.810	0.000	0.875	0.806	0.938	0.727	0.000	0.954	0.985
Entering Leg	70	148	15	0	233	29	376	75	0	480	61	139	94	0	294	58	345	32	0	435	1442
Exiting Leg					200					421					281					540	1442
Total					433					901					575					975	2884

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Chapel Street from North					Great Plain Avenue (Route 135) from East					Chestnut Street from South					Great Plain Avenue (Route 135) from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	1	0	0	0	1	0	1	1	0	2	1	2	0	0	3	0	0	0	0	0	6
4:15 PM	0	2	0	0	2	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	5
4:30 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	4
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	3
Total	1	4	0	0	5	0	2	1	0	3	1	6	0	0	7	0	3	0	0	3	18
5:00 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	5
5:30 PM	1	0	0	0	1	1	2	1	0	4	0	2	0	0	2	0	2	0	0	2	9
5:45 PM	1	2	0	0	3	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	6
Total	2	3	0	0	5	2	5	2	0	9	0	2	0	0	2	0	6	0	0	6	22
Grand Total	3	7	0	0	10	2	7	3	0	12	1	8	0	0	9	0	9	0	0	9	40
Approach %	30.0	70.0	0.0	0.0		16.7	58.3	25.0	0.0		11.1	88.9	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	7.5	17.5	0.0	0.0	25.0	5.0	17.5	7.5	0.0	30.0	2.5	20.0	0.0	0.0	22.5	0.0	22.5	0.0	0.0	22.5	
Exiting Leg Total					10					10					10					10	40
Buses	2	5	0	0	7	0	1	1	0	2	0	5	0	0	5	0	1	0	0	1	15
% Buses	66.7	71.4	0.0	0.0	70.0	0.0	14.3	33.3	0.0	16.7	0.0	62.5	0.0	0.0	55.6	0.0	11.1	0.0	0.0	11.1	37.5
Exiting Leg Total					5					1					6					3	15
Single-Unit Trucks	1	2	0	0	3	1	6	1	0	8	1	3	0	0	4	0	6	0	0	6	21
% Single-Unit	33.3	28.6	0.0	0.0	30.0	50.0	85.7	33.3	0.0	66.7	100.0	37.5	0.0	0.0	44.4	0.0	66.7	0.0	0.0	66.7	52.5
Exiting Leg Total					4					7					3					7	21
Articulated Trucks	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	2	0	0	2	4
% Articulated	0.0	0.0	0.0	0.0	0.0	50.0	0.0	33.3	0.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	0.0	22.2	10.0
Exiting Leg Total					1					2					1					0	4

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Chapel Street from North					Great Plain Avenue (Route 135) from East					Chestnut Street from South					Great Plain Avenue (Route 135) from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
5:00 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	5
5:30 PM	1	0	0	0	1	1	2	1	0	4	0	2	0	0	2	0	2	0	0	2	9
5:45 PM	1	2	0	0	3	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	6
Total Volume	2	3	0	0	5	2	5	2	0	9	0	2	0	0	2	0	6	0	0	6	22
% Approach Total	40.0	60.0	0.0	0.0		22.2	55.6	22.2	0.0		0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.500	0.375	0.000	0.000	0.417	0.500	0.625	0.500	0.000	0.563	0.000	0.250	0.000	0.000	0.250	0.000	0.750	0.000	0.000	0.750	0.611
Buses	1	2	0	0	3	0	1	1	0	2	0	2	0	0	2	0	1	0	0	1	8
Buses %	50.0	66.7	0.0	0.0	60.0	0.0	20.0	50.0	0.0	22.2	0.0	100.0	0.0	0.0	100.0	0.0	16.7	0.0	0.0	16.7	36.4
Single-Unit Trucks	1	1	0	0	2	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	12
Single-Unit %	50.0	33.3	0.0	0.0	40.0	50.0	80.0	0.0	0.0	55.6	0.0	0.0	0.0	0.0	0.0	0.0	83.3	0.0	0.0	83.3	54.5
Articulated Trucks	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	2
Articulated %	0.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0	0.0	22.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1
Buses	1	2	0	0	3	0	1	1	0	2	0	2	0	0	2	0	1	0	0	1	8
Single-Unit Trucks	1	1	0	0	2	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	12
Articulated Trucks	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	2
Total Entering Leg	2	3	0	0	5	2	5	2	0	9	0	2	0	0	2	0	6	0	0	6	22
Buses					2					1					3					2	8
Single-Unit Trucks					1					5					1					5	12
Articulated Trucks					1					0					1					0	2
Total Exiting Leg					4					6					5					7	22

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Buses**

	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
4:15 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	1	3	0	0	4	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	7
5:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	3
5:45 PM	1	1	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
Total	1	2	0	0	3	0	1	1	0	2	0	2	0	0	2	0	1	0	0	1	8
Grand Total	2	5	0	0	7	0	1	1	0	2	0	5	0	0	5	0	1	0	0	1	15
Approach %	28.6	71.4	0.0	0.0		0.0	50.0	50.0	0.0		0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	13.3	33.3	0.0	0.0	46.7	0.0	6.7	6.7	0.0	13.3	0.0	33.3	0.0	0.0	33.3	0.0	6.7	0.0	0.0	6.7	
Exiting Leg Total					5					1					6					3	15

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
5:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	3
5:45 PM	1	1	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
Total Volume	1	2	0	0	3	0	1	1	0	2	0	2	0	0	2	0	1	0	0	1	8
% Approach Total	33.3	66.7	0.0	0.0		0.0	50.0	50.0	0.0		0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.250	0.500	0.000	0.000	0.375	0.000	0.250	0.250	0.000	0.500	0.000	0.250	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.667
Entering Leg	1	2	0	0	3	0	1	1	0	2	0	2	0	0	2	0	1	0	0	1	8
Exiting Leg					2					1					3					2	8
Total					5					3					5					3	16

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Single-Unit Trucks**

	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	0	1	1	0	2	1	1	0	0	2	0	0	0	0	0	4
4:15 PM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	2
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	3
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	2	1	0	3	1	3	0	0	4	0	1	0	0	1	9
5:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	4
5:30 PM	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	4
5:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	3
Total	1	1	0	0	2	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	12
Grand Total	1	2	0	0	3	1	6	1	0	8	1	3	0	0	4	0	6	0	0	6	21
Approach %	33.3	66.7	0.0	0.0		12.5	75.0	12.5	0.0		25.0	75.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	4.8	9.5	0.0	0.0	14.3	4.8	28.6	4.8	0.0	38.1	4.8	14.3	0.0	0.0	19.0	0.0	28.6	0.0	0.0	28.6	
Exiting Leg Total					4					7					3					7	21

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
5:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	4
5:30 PM	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	4
5:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	3
Total Volume	1	1	0	0	2	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	12
% Approach Total	50.0	50.0	0.0	0.0		20.0	80.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.250	0.250	0.000	0.000	0.500	0.250	0.500	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.000	0.625	0.750
Entering Leg	1	1	0	0	2	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	12
Exiting Leg					1					5					1					5	12
Total					3					10					1					10	24

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Articulated Trucks

	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	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	1	0	2	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	2	0	0	2	4
Approach %	0.0	0.0	0.0	0.0		50.0	0.0	50.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	25.0	0.0	25.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	
Exiting Leg Total					1					2					1					0	4

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:45 PM	Chapel Street					Great Plain Avenue (Route 135)					Chestnut Street					Great Plain Avenue (Route 135)					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	2	0	0	2	4
% Approach Total	0.0	0.0	0.0	0.0		50.0	0.0	50.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.500
Entering Leg	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	2	0	0	2	4
Exiting Leg					1					2					1					0	4
Total					1					4					1					2	8

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Chapel Street							Great Plain Avenue (Route 135)							Chestnut Street							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	1	1	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	1	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	1	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Grand Total	0	0	0	0	0	1	1	0	0	0	0	2	0	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	4
Approach %	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total							1							2							1							0	4

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:45 PM	Chapel Street							Great Plain Avenue (Route 135)							Chestnut Street							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	1	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total Volume	0	0	0	0	0	1	1	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
% Approach Total	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	1	1	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Exiting Leg							1							2							0							0	3
Total							2							4							0							0	6

PDI File #: **239698 B**
Location: **N: Chapel Street S: Chestnut Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Chapel Street							Great Plain Avenue (Route 135)							Chestnut Street							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	0	3	0	3	0	0	0	0	2	1	3	0	0	0	0	1	11	12	0	0	0	0	4	6	10	28
4:15 PM	0	0	0	0	3	1	4	0	0	0	0	1	1	2	0	0	0	0	2	4	6	0	0	0	0	3	3	6	18
4:30 PM	0	0	0	0	2	2	4	0	0	0	0	0	5	5	0	0	0	0	6	14	20	0	0	0	0	7	3	10	39
4:45 PM	0	0	0	0	0	2	2	0	0	0	0	1	2	3	0	0	0	0	1	7	8	0	0	0	0	2	7	9	22
Total	0	0	0	0	8	5	13	0	0	0	0	4	9	13	0	0	0	0	10	36	46	0	0	0	0	16	19	35	107
5:00 PM	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	5	2	7	12
5:15 PM	0	0	0	0	0	2	2	0	0	0	0	1	2	3	0	0	0	0	5	2	7	0	0	0	0	6	2	8	20
5:30 PM	0	0	0	0	1	0	1	0	0	0	0	2	4	6	0	0	0	0	2	3	5	0	0	0	0	5	5	10	22
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	5	0	5	0	0	0	0	3	4	7	0	0	0	0	7	5	12	24
Total	0	0	0	0	2	3	5	0	0	0	0	8	6	14	0	0	0	0	12	10	22	0	0	0	0	23	14	37	78
Grand Total	0	0	0	0	10	8	18	0	0	0	0	12	15	27	0	0	0	0	22	46	68	0	0	0	0	39	33	72	185
Approach %	0	0	0	0	55.6	44.4		0	0	0	0	44.4	55.6		0	0	0	0	32.4	67.6		0	0	0	0	54.2	45.8		
Total %	0	0	0	0	5.41	4.32	9.73	0	0	0	0	6.49	8.11	14.6	0	0	0	0	11.9	24.9	36.8	0	0	0	0	21.1	17.8	38.9	
Exiting Leg Total							18							27							68							72	185

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Chapel Street							Great Plain Avenue (Route 135)							Chestnut Street							Great Plain Avenue (Route 135)							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	0	3	0	3	0	0	0	0	2	1	3	0	0	0	0	1	11	12	0	0	0	0	4	6	10	28
4:15 PM	0	0	0	0	3	1	4	0	0	0	0	1	1	2	0	0	0	0	2	4	6	0	0	0	0	3	3	6	18
4:30 PM	0	0	0	0	2	2	4	0	0	0	0	0	5	5	0	0	0	0	6	14	20	0	0	0	0	7	3	10	39
4:45 PM	0	0	0	0	0	2	2	0	0	0	0	1	2	3	0	0	0	0	1	7	8	0	0	0	0	2	7	9	22
Total Volume	0	0	0	0	8	5	13	0	0	0	0	4	9	13	0	0	0	0	10	36	46	0	0	0	0	16	19	35	107
% Approach Total	0.0	0.0	0.0	0.0	61.5	38.5		0.0	0.0	0.0	0.0	30.8	69.2		0.0	0.0	0.0	0.0	21.7	78.3		0.0	0.0	0.0	0.0	45.7	54.3		
PHF	0.000	0.000	0.000	0.000	0.667	0.625	0.813	0.000	0.000	0.000	0.000	0.500	0.450	0.650	0.000	0.000	0.000	0.000	0.417	0.643	0.575	0.000	0.000	0.000	0.000	0.571	0.679	0.875	0.686
Entering Leg	0	0	0	0	8	5	13	0	0	0	0	4	9	13	0	0	0	0	10	36	46	0	0	0	0	16	19	35	107
Exiting Leg							13							13							46							35	107
Total							26							26							92							70	214

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Cars and Heavy Vehicles (Combined)

	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	12	0	0	12	0	49	0	49	72	10	0	82	143
7:15 AM	29	0	0	29	4	79	0	83	103	16	0	119	231
7:30 AM	29	0	0	29	8	116	0	124	183	43	0	226	379
7:45 AM	37	1	0	38	8	156	0	164	146	45	0	191	393
Total	107	1	0	108	20	400	0	420	504	114	0	618	1146
8:00 AM	40	2	0	42	8	145	0	153	135	28	0	163	358
8:15 AM	19	1	0	20	2	109	0	111	96	19	0	115	246
8:30 AM	17	0	0	17	12	115	0	127	102	25	1	128	272
8:45 AM	21	0	0	21	10	125	0	135	145	26	0	171	327
Total	97	3	0	100	32	494	0	526	478	98	1	577	1203
Grand Total	204	4	0	208	52	894	0	946	982	212	1	1195	2349
Approach %	98.1	1.9	0.0		5.5	94.5	0.0		82.2	17.7	0.1		
Total %	8.7	0.2	0.0	8.9	2.2	38.1	0.0	40.3	41.8	9.0	0.0	50.9	
Exiting Leg Total				264				986				1099	2349
Cars	192	4	0	196	50	868	0	918	955	207	1	1163	2277
% Cars	94.1	100.0	0.0	94.2	96.2	97.1	0.0	97.0	97.3	97.6	100.0	97.3	96.9
Exiting Leg Total				257				959				1061	2277
Heavy Vehicles	12	0	0	12	2	26	0	28	27	5	0	32	72
% Heavy Vehicles	5.9	0.0	0.0	5.8	3.8	2.9	0.0	3.0	2.7	2.4	0.0	2.7	3.1
Exiting Leg Total				7				27				38	72

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:30 AM	29	0	0	29	8	116	0	124	183	43	0	226	379
7:45 AM	37	1	0	38	8	156	0	164	146	45	0	191	393
8:00 AM	40	2	0	42	8	145	0	153	135	28	0	163	358
8:15 AM	19	1	0	20	2	109	0	111	96	19	0	115	246
Total Volume	125	4	0	129	26	526	0	552	560	135	0	695	1376
% Approach Total	96.9	3.1	0.0		4.7	95.3	0.0		80.6	19.4	0.0		
PHF	0.781	0.500	0.000	0.768	0.813	0.843	0.000	0.841	0.765	0.750	0.000	0.769	0.875
Cars	119	4	0	123	24	513	0	537	547	130	0	677	1337
Cars %	95.2	100.0	0.0	95.3	92.3	97.5	0.0	97.3	97.7	96.3	0.0	97.4	97.2
Heavy Vehicles	6	0	0	6	2	13	0	15	13	5	0	18	39
Heavy Vehicles %	4.8	0.0	0.0	4.7	7.7	2.5	0.0	2.7	2.3	3.7	0.0	2.6	2.8
Cars Enter Leg	119	4	0	123	24	513	0	537	547	130	0	677	1337
Heavy Enter Leg	6	0	0	6	2	13	0	15	13	5	0	18	39
Total Entering Leg	125	4	0	129	26	526	0	552	560	135	0	695	1376
Cars Exiting Leg				154				551				632	1337
Heavy Exiting Leg				7				13				19	39
Total Exiting Leg				161				564				651	1376

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Cars**

	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	11	0	0	11	0	45	0	45	69	10	0	79	135
7:15 AM	25	0	0	25	4	74	0	78	101	16	0	117	220
7:30 AM	24	0	0	24	8	112	0	120	182	43	0	225	369
7:45 AM	37	1	0	38	8	153	0	161	141	40	0	181	380
Total	97	1	0	98	20	384	0	404	493	109	0	602	1104
8:00 AM	39	2	0	41	7	142	0	149	131	28	0	159	349
8:15 AM	19	1	0	20	1	106	0	107	93	19	0	112	239
8:30 AM	16	0	0	16	12	115	0	127	96	25	1	122	265
8:45 AM	21	0	0	21	10	121	0	131	142	26	0	168	320
Total	95	3	0	98	30	484	0	514	462	98	1	561	1173
Grand Total	192	4	0	196	50	868	0	918	955	207	1	1163	2277
Approach %	98.0	2.0	0.0		5.4	94.6	0.0		82.1	17.8	0.1		
Total %	8.4	0.2	0.0	8.6	2.2	38.1	0.0	40.3	41.9	9.1	0.0	51.1	
Exiting Leg Total				257				959				1061	2277

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:30 AM	24	0	0	24	8	112	0	120	182	43	0	225	369
7:45 AM	37	1	0	38	8	153	0	161	141	40	0	181	380
8:00 AM	39	2	0	41	7	142	0	149	131	28	0	159	349
8:15 AM	19	1	0	20	1	106	0	107	93	19	0	112	239
Total Volume	119	4	0	123	24	513	0	537	547	130	0	677	1337
% Approach Total	96.7	3.3	0.0		4.5	95.5	0.0		80.8	19.2	0.0		
PHF	0.763	0.500	0.000	0.750	0.750	0.838	0.000	0.834	0.751	0.756	0.000	0.752	0.880
Entering Leg	119	4	0	123	24	513	0	537	547	130	0	677	1337
Exiting Leg				154				551				632	1337
Total				277				1088				1309	2674

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	1	0	0	1	0	4	0	4	3	0	0	3	8
7:15 AM	4	0	0	4	0	5	0	5	2	0	0	2	11
7:30 AM	5	0	0	5	0	4	0	4	1	0	0	1	10
7:45 AM	0	0	0	0	0	3	0	3	5	5	0	10	13
Total	10	0	0	10	0	16	0	16	11	5	0	16	42
8:00 AM	1	0	0	1	1	3	0	4	4	0	0	4	9
8:15 AM	0	0	0	0	1	3	0	4	3	0	0	3	7
8:30 AM	1	0	0	1	0	0	0	0	6	0	0	6	7
8:45 AM	0	0	0	0	0	4	0	4	3	0	0	3	7
Total	2	0	0	2	2	10	0	12	16	0	0	16	30
Grand Total	12	0	0	12	2	26	0	28	27	5	0	32	72
Approach %	100.0	0.0	0.0		7.1	92.9	0.0		84.4	15.6	0.0		
Total %	16.7	0.0	0.0	16.7	2.8	36.1	0.0	38.9	37.5	6.9	0.0	44.4	
Exiting Leg Total				7				27				38	72
Buses	11	0	0	11	0	7	0	7	5	3	0	8	26
% Buses	91.7	0.0	0.0	91.7	0.0	26.9	0.0	25.0	18.5	60.0	0.0	25.0	36.1
Exiting Leg Total				3				5				18	26
Single-Unit Trucks	1	0	0	1	2	13	0	15	20	2	0	22	38
% Single-Unit	8.3	0.0	0.0	8.3	100.0	50.0	0.0	53.6	74.1	40.0	0.0	68.8	52.8
Exiting Leg Total				4				20				14	38
Articulated Trucks	0	0	0	0	0	6	0	6	2	0	0	2	8
% Articulated	0.0	0.0	0.0	0.0	0.0	23.1	0.0	21.4	7.4	0.0	0.0	6.3	11.1
Exiting Leg Total				0				2				6	8

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:15 AM	4	0	0	4	0	5	0	5	2	0	0	2	11
7:30 AM	5	0	0	5	0	4	0	4	1	0	0	1	10
7:45 AM	0	0	0	0	0	3	0	3	5	5	0	10	13
8:00 AM	1	0	0	1	1	3	0	4	4	0	0	4	9
Total Volume	10	0	0	10	1	15	0	16	12	5	0	17	43
% Approach Total	100.0	0.0	0.0		6.3	93.8	0.0		70.6	29.4	0.0		
PHF	0.500	0.000	0.000	0.500	0.250	0.750	0.000	0.800	0.600	0.250	0.000	0.425	0.827
Buses	10	0	0	10	0	6	0	6	2	3	0	5	21
Buses %	100.0	0.0	0.0	100.0	0.0	40.0	0.0	37.5	16.7	60.0	0.0	29.4	48.8
Single-Unit Trucks	0	0	0	0	1	6	0	7	9	2	0	11	18
Single-Unit %	0.0	0.0	0.0	0.0	100.0	40.0	0.0	43.8	75.0	40.0	0.0	64.7	41.9
Articulated Trucks	0	0	0	0	0	3	0	3	1	0	0	1	4
Articulated %	0.0	0.0	0.0	0.0	0.0	20.0	0.0	18.8	8.3	0.0	0.0	5.9	9.3
Buses	10	0	0	10	0	6	0	6	2	3	0	5	21
Single-Unit Trucks	0	0	0	0	1	6	0	7	9	2	0	11	18
Articulated Trucks	0	0	0	0	0	3	0	3	1	0	0	1	4
Total Entering Leg	10	0	0	10	1	15	0	16	12	5	0	17	43
Buses				3				2				16	21
Single-Unit Trucks				3				9				6	18
Articulated Trucks				0				1				3	4
Total Exiting Leg				6				12				25	43

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Buses**

	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:15 AM	4	0	0	4	0	3	0	3	0	0	0	0	7
7:30 AM	5	0	0	5	0	0	0	0	0	0	0	0	5
7:45 AM	0	0	0	0	0	1	0	1	1	3	0	4	5
Total	10	0	0	10	0	4	0	4	1	3	0	4	18
8:00 AM	1	0	0	1	0	2	0	2	1	0	0	1	4
8:15 AM	0	0	0	0	0	1	0	1	1	0	0	1	2
8:30 AM	0	0	0	0	0	0	0	0	2	0	0	2	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	3	0	3	4	0	0	4	8
Grand Total	11	0	0	11	0	7	0	7	5	3	0	8	26
Approach %	100.0	0.0	0.0		0.0	100.0	0.0		62.5	37.5	0.0		
Total %	42.3	0.0	0.0	42.3	0.0	26.9	0.0	26.9	19.2	11.5	0.0	30.8	
Exiting Leg Total				3				5				18	26

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:15 AM	4	0	0	4	0	3	0	3	0	0	0	0	7
7:30 AM	5	0	0	5	0	0	0	0	0	0	0	0	5
7:45 AM	0	0	0	0	0	1	0	1	1	3	0	4	5
8:00 AM	1	0	0	1	0	2	0	2	1	0	0	1	4
Total Volume	10	0	0	10	0	6	0	6	2	3	0	5	21
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		40.0	60.0	0.0		
PHF	0.500	0.000	0.000	0.500	0.000	0.500	0.000	0.500	0.500	0.250	0.000	0.313	0.750
Entering Leg	10	0	0	10	0	6	0	6	2	3	0	5	21
Exiting Leg				3				2				16	21
Total				13				8				21	42

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Single-Unit Trucks**

	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	3	0	3	3	0	0	3	6
7:15 AM	0	0	0	0	0	0	0	0	2	0	0	2	2
7:30 AM	0	0	0	0	0	4	0	4	0	0	0	0	4
7:45 AM	0	0	0	0	0	1	0	1	4	2	0	6	7
Total	0	0	0	0	0	8	0	8	9	2	0	11	19
8:00 AM	0	0	0	0	1	1	0	2	3	0	0	3	5
8:15 AM	0	0	0	0	1	1	0	2	2	0	0	2	4
8:30 AM	1	0	0	1	0	0	0	0	3	0	0	3	4
8:45 AM	0	0	0	0	0	3	0	3	3	0	0	3	6
Total	1	0	0	1	2	5	0	7	11	0	0	11	19
Grand Total	1	0	0	1	2	13	0	15	20	2	0	22	38
Approach %	100.0	0.0	0.0		13.3	86.7	0.0		90.9	9.1	0.0		
Total %	2.6	0.0	0.0	2.6	5.3	34.2	0.0	39.5	52.6	5.3	0.0	57.9	
Exiting Leg Total				4				20				14	38

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:30 AM	0	0	0	0	0	4	0	4	0	0	0	0	4
7:45 AM	0	0	0	0	0	1	0	1	4	2	0	6	7
8:00 AM	0	0	0	0	1	1	0	2	3	0	0	3	5
8:15 AM	0	0	0	0	1	1	0	2	2	0	0	2	4
Total Volume	0	0	0	0	2	7	0	9	9	2	0	11	20
% Approach Total	0.0	0.0	0.0		22.2	77.8	0.0		81.8	18.2	0.0		
PHF	0.000	0.000	0.000	0.000	0.500	0.438	0.000	0.563	0.563	0.250	0.000	0.458	0.714
Entering Leg	0	0	0	0	2	7	0	9	9	2	0	11	20
Exiting Leg				4				9				7	20
Total				4				18				18	40

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Articulated Trucks

	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
7:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	4	0	4	1	0	0	1	5
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
8:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	2	0	2	1	0	0	1	3
Grand Total	0	0	0	0	0	6	0	6	2	0	0	2	8
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	75.0	0.0	75.0	25.0	0.0	0.0	25.0	
Exiting Leg Total				0				2				6	8

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
7:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	0	0	0	0	4	0	4	1	0	0	1	5
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.500	0.250	0.000	0.000	0.250	0.625
Entering Leg	0	0	0	0	0	4	0	4	1	0	0	1	5
Exiting Leg				0				1				4	5
Total				0				5				5	10

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Garden Street						Great Plain Avenue (Route 135)						Great Plain Avenue (Route 135)						
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	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	0	0
Grand Total	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Approach %	0.0	0.0	0.0	0.0	100.0		0.0	0.0	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	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						1						0						0	1

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Garden Street						Great Plain Avenue (Route 135)						Great Plain Avenue (Route 135)						
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	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	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% Approach Total	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Exiting Leg						1						0						0	1
Total						2						0						0	2

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Garden Street						Great Plain Avenue (Route 135)						Great Plain Avenue (Route 135)						
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	9	1	10	0	0	0	0	0	0	0	0	0	0	0	0	10
7:15 AM	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
7:30 AM	0	0	0	3	1	4	0	0	0	0	0	0	0	0	0	0	0	0	4
7:45 AM	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	17	3	20	0	0	0	0	0	0	0	0	0	0	0	0	20
8:00 AM	0	0	0	8	1	9	0	0	0	0	0	0	0	0	0	0	0	0	9
8:15 AM	0	0	0	3	3	6	0	0	0	0	0	0	0	0	0	0	0	0	6
8:30 AM	0	0	0	3	0	3	0	0	0	1	0	1	0	0	0	0	0	0	4
8:45 AM	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	14	6	20	0	0	0	1	0	1	0	0	0	0	0	0	21
Grand Total	0	0	0	31	9	40	0	0	0	1	0	1	0	0	0	0	0	0	41
Approach %	0	0	0	77.5	22.5		0	0	0	100	0		0	0	0	0	0		
Total %	0	0	0	75.61	21.951	97.561	0	0	0	2.439	0	2.439	0	0	0	0	0	0	
Exiting Leg Total						40						1						0	41

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Garden Street						Great Plain Avenue (Route 135)						Great Plain Avenue (Route 135)						
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:30 AM	0	0	0	3	1	4	0	0	0	0	0	0	0	0	0	0	0	0	4
7:45 AM	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	3
8:00 AM	0	0	0	8	1	9	0	0	0	0	0	0	0	0	0	0	0	0	9
8:15 AM	0	0	0	3	3	6	0	0	0	0	0	0	0	0	0	0	0	0	6
Total Volume	0	0	0	16	6	22	0	0	0	0	0	0	0	0	0	0	0	0	22
% Approach Total	0.0	0.0	0.0	72.7	27.3		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.500	0.500	0.611	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.611
Entering Leg	0	0	0	16	6	22	0	0	0	0	0	0	0	0	0	0	0	0	22
Exiting Leg						22						0						0	22
Total						44						0						0	44

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Cars and Heavy Vehicles (Combined)

	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:00 PM	42	2	0	44	5	119	1	125	97	28	0	125	294
4:15 PM	53	1	0	54	8	79	0	87	71	18	0	89	230
4:30 PM	38	1	0	39	6	131	0	137	99	33	0	132	308
4:45 PM	37	1	0	38	2	110	0	112	97	19	0	116	266
Total	170	5	0	175	21	439	1	461	364	98	0	462	1098
5:00 PM	49	6	0	55	4	125	0	129	107	18	1	126	310
5:15 PM	53	1	0	54	5	128	0	133	106	20	0	126	313
5:30 PM	40	2	0	42	3	124	0	127	108	25	0	133	302
5:45 PM	48	4	0	52	11	140	0	151	110	16	0	126	329
Total	190	13	0	203	23	517	0	540	431	79	1	511	1254
Grand Total	360	18	0	378	44	956	1	1001	795	177	1	973	2352
Approach %	95.2	4.8	0.0		4.4	95.5	0.1		81.7	18.2	0.1		
Total %	15.3	0.8	0.0	16.1	1.9	40.6	0.0	42.6	33.8	7.5	0.0	41.4	
Exiting Leg Total				221				814				1317	2352
Cars	355	17	0	372	44	948	1	993	785	175	1	961	2326
% Cars	98.6	94.4	0.0	98.4	100.0	99.2	100.0	99.2	98.7	98.9	100.0	98.8	98.9
Exiting Leg Total				219				803				1304	2326
Heavy Vehicles	5	1	0	6	0	8	0	8	10	2	0	12	26
% Heavy Vehicles	1.4	5.6	0.0	1.6	0.0	0.8	0.0	0.8	1.3	1.1	0.0	1.2	1.1
Exiting Leg Total				2				11				13	26

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
5:00 PM	49	6	0	55	4	125	0	129	107	18	1	126	310
5:15 PM	53	1	0	54	5	128	0	133	106	20	0	126	313
5:30 PM	40	2	0	42	3	124	0	127	108	25	0	133	302
5:45 PM	48	4	0	52	11	140	0	151	110	16	0	126	329
Total Volume	190	13	0	203	23	517	0	540	431	79	1	511	1254
% Approach Total	93.6	6.4	0.0		4.3	95.7	0.0		84.3	15.5	0.2		
PHF	0.896	0.542	0.000	0.923	0.523	0.923	0.000	0.894	0.980	0.790	0.250	0.961	0.953
Cars	190	12	0	202	23	512	0	535	425	78	1	504	1241
Cars %	100.0	92.3	0.0	99.5	100.0	99.0	0.0	99.1	98.6	98.7	100.0	98.6	99.0
Heavy Vehicles	0	1	0	1	0	5	0	5	6	1	0	7	13
Heavy Vehicles %	0.0	7.7	0.0	0.5	0.0	1.0	0.0	0.9	1.4	1.3	0.0	1.4	1.0
Cars Enter Leg	190	12	0	202	23	512	0	535	425	78	1	504	1241
Heavy Enter Leg	0	1	0	1	0	5	0	5	6	1	0	7	13
Total Entering Leg	190	13	0	203	23	517	0	540	431	79	1	511	1254
Cars Exiting Leg				101				437				703	1241
Heavy Exiting Leg				1				7				5	13
Total Exiting Leg				102				444				708	1254

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Cars**

	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:00 PM	42	2	0	44	5	117	1	123	97	28	0	125	292
4:15 PM	51	1	0	52	8	78	0	86	70	18	0	88	226
4:30 PM	37	1	0	38	6	131	0	137	98	32	0	130	305
4:45 PM	35	1	0	36	2	110	0	112	95	19	0	114	262
Total	165	5	0	170	21	436	1	458	360	97	0	457	1085
5:00 PM	49	6	0	55	4	124	0	128	105	18	1	124	307
5:15 PM	53	1	0	54	5	127	0	132	105	20	0	125	311
5:30 PM	40	2	0	42	3	122	0	125	106	24	0	130	297
5:45 PM	48	3	0	51	11	139	0	150	109	16	0	125	326
Total	190	12	0	202	23	512	0	535	425	78	1	504	1241
Grand Total	355	17	0	372	44	948	1	993	785	175	1	961	2326
Approach %	95.4	4.6	0.0		4.4	95.5	0.1		81.7	18.2	0.1		
Total %	15.3	0.7	0.0	16.0	1.9	40.8	0.0	42.7	33.7	7.5	0.0	41.3	
Exiting Leg Total				219				803				1304	2326

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
5:00 PM	49	6	0	55	4	124	0	128	105	18	1	124	307
5:15 PM	53	1	0	54	5	127	0	132	105	20	0	125	311
5:30 PM	40	2	0	42	3	122	0	125	106	24	0	130	297
5:45 PM	48	3	0	51	11	139	0	150	109	16	0	125	326
Total Volume	190	12	0	202	23	512	0	535	425	78	1	504	1241
% Approach Total	94.1	5.9	0.0		4.3	95.7	0.0		84.3	15.5	0.2		
PHF	0.896	0.500	0.000	0.918	0.523	0.921	0.000	0.892	0.975	0.813	0.250	0.969	0.952
Entering Leg	190	12	0	202	23	512	0	535	425	78	1	504	1241
Exiting Leg				101				437				703	1241
Total				303				972				1207	2482

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	2
4:15 PM	2	0	0	2	0	1	0	1	1	0	0	1	4
4:30 PM	1	0	0	1	0	0	0	0	1	1	0	2	3
4:45 PM	2	0	0	2	0	0	0	0	2	0	0	2	4
Total	5	0	0	5	0	3	0	3	4	1	0	5	13
5:00 PM	0	0	0	0	0	1	0	1	2	0	0	2	3
5:15 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
5:30 PM	0	0	0	0	0	2	0	2	2	1	0	3	5
5:45 PM	0	1	0	1	0	1	0	1	1	0	0	1	3
Total	0	1	0	1	0	5	0	5	6	1	0	7	13
Grand Total	5	1	0	6	0	8	0	8	10	2	0	12	26
Approach %	83.3	16.7	0.0		0.0	100.0	0.0		83.3	16.7	0.0		
Total %	19.2	3.8	0.0	23.1	0.0	30.8	0.0	30.8	38.5	7.7	0.0	46.2	
Exiting Leg Total				2				11				13	26
Buses	1	0	0	1	0	2	0	2	2	0	0	2	5
% Buses	20.0	0.0	0.0	16.7	0.0	25.0	0.0	25.0	20.0	0.0	0.0	16.7	19.2
Exiting Leg Total				0				2				3	5
Single-Unit Trucks	4	1	0	5	0	6	0	6	6	2	0	8	19
% Single-Unit	80.0	100.0	0.0	83.3	0.0	75.0	0.0	75.0	60.0	100.0	0.0	66.7	73.1
Exiting Leg Total				2				7				10	19
Articulated Trucks	0	0	0	0	0	0	0	0	2	0	0	2	2
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	16.7	7.7
Exiting Leg Total				0				2				0	2

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:15 PM	2	0	0	2	0	1	0	1	1	0	0	1	4
4:30 PM	1	0	0	1	0	0	0	0	1	1	0	2	3
4:45 PM	2	0	0	2	0	0	0	0	2	0	0	2	4
5:00 PM	0	0	0	0	0	1	0	1	2	0	0	2	3
Total Volume	5	0	0	5	0	2	0	2	6	1	0	7	14
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		85.7	14.3	0.0		
PHF	0.625	0.000	0.000	0.625	0.000	0.500	0.000	0.500	0.750	0.250	0.000	0.875	0.875
Buses	1	0	0	1	0	0	0	0	0	0	0	0	1
Buses %	20.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1
Single-Unit Trucks	4	0	0	4	0	2	0	2	4	1	0	5	11
Single-Unit %	80.0	0.0	0.0	80.0	0.0	100.0	0.0	100.0	66.7	100.0	0.0	71.4	78.6
Articulated Trucks	0	0	0	0	0	0	0	0	2	0	0	2	2
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	28.6	14.3
Buses	1	0	0	1	0	0	0	0	0	0	0	0	1
Single-Unit Trucks	4	0	0	4	0	2	0	2	4	1	0	5	11
Articulated Trucks	0	0	0	0	0	0	0	0	2	0	0	2	2
Total Entering Leg	5	0	0	5	0	2	0	2	6	1	0	7	14
Buses				0				0				1	1
Single-Unit Trucks				1				4				6	11
Articulated Trucks				0				2				0	2
Total Exiting Leg				1				6				7	14

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Buses**

	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	1	0	0	1	0	1	0	1	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	2
5:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	1	0	1	2	0	0	2	3
Grand Total	1	0	0	1	0	2	0	2	2	0	0	2	5
Approach %	100.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	20.0	0.0	0.0	20.0	0.0	40.0	0.0	40.0	40.0	0.0	0.0	40.0	
Exiting Leg Total				0				2				3	5

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:45 PM	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	2
Total Volume	1	0	0	1	0	0	0	0	2	0	0	2	3
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		100.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.375
Entering Leg	1	0	0	1	0	0	0	0	2	0	0	2	3
Exiting Leg				0				2				1	3
Total				1				2				3	6

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Single-Unit Trucks**

	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
4:15 PM	2	0	0	2	0	1	0	1	1	0	0	1	4
4:30 PM	1	0	0	1	0	0	0	0	1	1	0	2	3
4:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	4	0	0	4	0	2	0	2	2	1	0	3	9
5:00 PM	0	0	0	0	0	1	0	1	2	0	0	2	3
5:15 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
5:30 PM	0	0	0	0	0	2	0	2	0	1	0	1	3
5:45 PM	0	1	0	1	0	0	0	0	1	0	0	1	2
Total	0	1	0	1	0	4	0	4	4	1	0	5	10
Grand Total	4	1	0	5	0	6	0	6	6	2	0	8	19
Approach %	80.0	20.0	0.0		0.0	100.0	0.0		75.0	25.0	0.0		
Total %	21.1	5.3	0.0	26.3	0.0	31.6	0.0	31.6	31.6	10.5	0.0	42.1	
Exiting Leg Total				2				7				10	19

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:15 PM	2	0	0	2	0	1	0	1	1	0	0	1	4
4:30 PM	1	0	0	1	0	0	0	0	1	1	0	2	3
4:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	1	0	1	2	0	0	2	3
Total Volume	4	0	0	4	0	2	0	2	4	1	0	5	11
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		80.0	20.0	0.0		
PHF	0.500	0.000	0.000	0.500	0.000	0.500	0.000	0.500	0.500	0.250	0.000	0.625	0.688
Entering Leg	4	0	0	4	0	2	0	2	4	1	0	5	11
Exiting Leg				1				4				6	11
Total				5				6				11	22

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Articulated Trucks

	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	2	0	0	2	2
Total	0	0	0	0	0	0	0	0	2	0	0	2	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	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
Grand Total	0	0	0	0	0	0	0	0	2	0	0	2	2
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	
Exiting Leg Total				0				2				0	2

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Garden Street				Great Plain Avenue (Route 135)				Great Plain Avenue (Route 135)				
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	2	0	0	2	2
Total Volume	0	0	0	0	0	0	0	0	2	0	0	2	2
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.250
Entering Leg	0	0	0	0	0	0	0	0	2	0	0	2	2
Exiting Leg				0				2				0	2
Total				0				2				2	4

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Garden Street						Great Plain Avenue (Route 135)						Great Plain Avenue (Route 135)						
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	2
Grand Total	0	0	0	0	2	2	0	1	0	0	0	1	0	0	0	0	0	0	3
Approach %	0.0	0.0	0.0	0.0	100.0		0.0	100.0	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	66.7	66.7	0.0	33.3	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						2						0						1	3

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:45 PM	Garden Street						Great Plain Avenue (Route 135)						Great Plain Avenue (Route 135)						
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:45 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	2
Total Volume	0	0	0	0	2	2	0	1	0	0	0	1	0	0	0	0	0	0	3
% Approach Total	0.0	0.0	0.0	0.0	100.0		0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.500	0.500	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.375
Entering Leg	0	0	0	0	2	2	0	1	0	0	0	1	0	0	0	0	0	0	3
Exiting Leg						2						0						1	3
Total						4						1						1	6

PDI File #: **239698 C**
Location: **N: Garden Street**
Location: **E: Great Plain Ave (Rte 135) W: Great Plain Ave (Rte 135)**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Garden Street						Great Plain Avenue (Route 135)						Great Plain Avenue (Route 135)						
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	4	3	7	0	0	0	1	1	2	0	0	0	2	0	2	11
4:15 PM	0	0	0	5	0	5	0	0	0	3	3	6	0	0	0	0	0	0	11
4:30 PM	0	0	0	0	6	6	0	0	0	0	1	1	0	0	0	1	0	1	8
4:45 PM	0	0	0	1	6	7	0	0	0	1	0	1	0	0	0	0	0	0	8
Total	0	0	0	10	15	25	0	0	0	5	5	10	0	0	0	3	0	3	38
5:00 PM	0	0	0	1	6	7	0	0	0	1	0	1	0	0	0	0	0	0	8
5:15 PM	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	4
5:30 PM	0	0	0	1	3	4	0	0	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	0	0	3	4	7	0	0	0	0	0	0	0	0	0	0	0	0	7
Total	0	0	0	5	17	22	0	0	0	1	0	1	0	0	0	0	0	0	23
Grand Total	0	0	0	15	32	47	0	0	0	6	5	11	0	0	0	3	0	3	61
Approach %	0	0	0	31.915	68.085		0	0	0	54.545	45.455		0	0	0	100	0		
Total %	0	0	0	24.59	52.459	77.049	0	0	0	9.8361	8.1967	18.033	0	0	0	4.918	0	4.918	
Exiting Leg Total						47						11						3	61

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Garden Street						Great Plain Avenue (Route 135)						Great Plain Avenue (Route 135)						
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	4	3	7	0	0	0	1	1	2	0	0	0	2	0	2	11
4:15 PM	0	0	0	5	0	5	0	0	0	3	3	6	0	0	0	0	0	0	11
4:30 PM	0	0	0	0	6	6	0	0	0	0	1	1	0	0	0	1	0	1	8
4:45 PM	0	0	0	1	6	7	0	0	0	1	0	1	0	0	0	0	0	0	8
Total Volume	0	0	0	10	15	25	0	0	0	5	5	10	0	0	0	3	0	3	38
% Approach Total	0.0	0.0	0.0	40.0	60.0		0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	100.0	0.0		
PHF	0.000	0.000	0.000	0.500	0.625	0.893	0.000	0.000	0.000	0.417	0.417	0.417	0.000	0.000	0.000	0.375	0.000	0.375	0.864
Entering Leg	0	0	0	10	15	25	0	0	0	5	5	10	0	0	0	3	0	3	38
Exiting Leg						25						10						3	38
Total						50						20						6	76

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Highland Avenue						May Street						Highland Avenue						Chapel Street						May Street						
	from North						from East						from South						from Southwest						from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	8	19	9	4	0	40	1	6	5	0	0	12	2	13	2	0	0	17	0	3	29	4	0	36	3	4	8	6	0	21	126
7:15 AM	16	34	12	2	1	65	5	24	4	2	0	35	2	20	0	0	0	22	1	4	31	1	0	37	1	9	20	12	0	42	201
7:30 AM	16	41	19	2	0	78	3	32	4	4	0	43	9	34	2	0	0	45	0	7	54	0	0	61	0	8	42	21	0	71	298
7:45 AM	14	48	36	3	0	101	8	45	6	9	0	68	5	57	0	0	0	62	2	8	59	3	0	72	2	6	33	34	0	75	378
Total	54	142	76	11	1	284	17	107	19	15	0	158	18	124	4	0	0	146	3	22	173	8	0	206	6	27	103	73	0	209	1003
8:00 AM	25	50	33	3	0	111	14	40	7	11	0	72	4	43	1	0	0	48	0	9	49	3	0	61	3	11	18	16	0	48	340
8:15 AM	16	39	22	3	0	80	7	14	12	3	0	36	5	29	0	2	0	36	1	4	37	1	0	43	3	2	16	11	0	32	227
8:30 AM	14	34	30	4	0	82	6	19	4	5	0	34	6	29	6	0	0	41	2	4	57	1	0	64	7	6	13	13	0	39	260
8:45 AM	18	50	22	3	0	93	3	16	6	6	0	31	5	33	2	1	0	41	4	3	59	2	0	68	2	3	11	17	0	33	266
Total	73	173	107	13	0	366	30	89	29	25	0	173	20	134	9	3	0	166	7	20	202	7	0	236	15	22	58	57	0	152	1093
Grand Total	127	315	183	24	1	650	47	196	48	40	0	331	38	258	13	3	0	312	10	42	375	15	0	442	21	49	161	130	0	361	2096
Approach %	19.5	48.5	28.2	3.7	0.2		14.2	59.2	14.5	12.1	0.0		12.2	82.7	4.2	1.0	0.0		2.3	9.5	84.8	3.4	0.0		5.8	13.6	44.6	36.0	0.0		
Total %	6.1	15.0	8.7	1.1	0.0	31.0	2.2	9.4	2.3	1.9	0.0	15.8	1.8	12.3	0.6	0.1	0.0	14.9	0.5	2.0	17.9	0.7	0.0	21.1	1.0	2.3	7.7	6.2	0.0	17.2	
Exiting Leg Total						811						265						282						387						351	2096
Cars	122	293	181	22	1	619	45	181	47	40	0	313	37	255	13	3	0	308	8	40	344	14	0	406	21	49	157	126	0	353	1999
% Cars	96.1	93.0	98.9	91.7	100.0	95.2	95.7	92.3	97.9	100.0	0.0	94.6	97.4	98.8	100.0	100.0	0.0	98.7	80.0	95.2	91.7	93.3	0.0	91.9	100.0	100.0	97.5	96.9	0.0	97.8	95.4
Exiting Leg Total						771						256						278						364						330	1999
Heavy Vehicles	5	22	2	2	0	31	2	15	1	0	0	18	1	3	0	0	0	4	2	2	31	1	0	36	0	0	4	4	0	8	97
% Heavy Vehicles	3.9	7.0	1.1	8.3	0.0	4.8	4.3	7.7	2.1	0.0	0.0	5.4	2.6	1.2	0.0	0.0	0.0	1.3	20.0	4.8	8.3	6.7	0.0	8.1	0.0	0.0	2.5	3.1	0.0	2.2	4.6
Exiting Leg Total						40						9						4						23						21	97

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Highland Avenue						May Street						Highland Avenue						Chapel Street						May Street						
	from North						from East						from South						from Southwest						from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
7:30 AM	16	41	19	2	0	78	3	32	4	4	0	43	9	34	2	0	0	45	0	7	54	0	0	61	0	8	42	21	0	71	298
7:45 AM	14	48	36	3	0	101	8	45	6	9	0	68	5	57	0	0	0	62	2	8	59	3	0	72	2	6	33	34	0	75	378
8:00 AM	25	50	33	3	0	111	14	40	7	11	0	72	4	43	1	0	0	48	0	9	49	3	0	61	3	11	18	16	0	48	340
8:15 AM	16	39	22	3	0	80	7	14	12	3	0	36	5	29	0	2	0	36	1	4	37	1	0	43	3	2	16	11	0	32	227
Total Volume	71	178	110	11	0	370	32	131	29	27	0	219	23	163	3	2	0	191	3	28	199	7	0	237	8	27	109	82	0	226	1243
% Approach Total	19.2	48.1	29.7	3.0	0.0		14.6	59.8	13.2	12.3	0.0		12.0	85.3	1.6	1.0	0.0		1.3	11.8	84.0	3.0	0.0		3.5	11.9	48.2	36.3	0.0		
PHF	0.710	0.890	0.764	0.917	0.000	0.833	0.571	0.728	0.604	0.614	0.000	0.760	0.639	0.715	0.375	0.250	0.000	0.770	0.375	0.778	0.843	0.583	0.000	0.823	0.667	0.614	0.649	0.603	0.000	0.753	0.822
Cars	68	164	108	10	0	350	31	122	29	27	0	209	22	161	3	2	0	188	3	26	178	6	0	213	8	27	106	78	0	219	1179
Cars %	95.8	92.1	98.2	90.9	0.0	94.6	96.9	93.1	100.0	100.0	0.0	95.4	95.7	98.8	100.0	100.0	0.0	98.4	100.0	92.9	89.4	85.7	0.0	89.9	100.0	100.0	97.2	95.1	0.0	96.9	94.9
Heavy Vehicles	3	14	2	1	0	20	1	9	0	0	0	10	1	2	0	0	0	3	0	2	21	1	0	24	0	0	3	4	0	7	64
Heavy Vehicles %	4.2	7.9	1.8	9.1	0.0	5.4	3.1	6.9	0.0	0.0	0.0	4.6	4.3	1.2	0.0	0.0	0.0	1.6	0.0	7.1	10.6	14.3	0.0	10.1	0.0	0.0	2.8	4.9	0.0	3.1	5.1
Cars Enter Leg	68	164	108	10	0	350	31	122	29	27	0	209	22	161	3	2	0	188	3	26	178	6	0	213	8	27	106	78	0	219	1179
Heavy Enter Leg	3	14	2	1	0	20	1	9	0	0	0	10	1	2	0	0	0	3	0	2	21	1	0	24	0	0	3	4	0	7	64
Total Entering Leg	71	178	110	11	0	370	32	131	29	27	0	219	23	163	3	2	0	191	3	28	199	7	0	237	8	27	109	82	0	226	1243
Cars Exiting Leg						448						164						165						203						199	1179
Heavy Exiting Leg						28						7						2						14						13	64
Total Exiting Leg						476						171						167						217						212	1243

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars

	Highland Avenue from North						May Street from East						Highland Avenue from South						Chapel Street from Southwest						May Street from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	8	17	9	3	0	37	1	5	5	0	0	11	2	13	2	0	0	17	0	3	27	4	0	34	3	4	7	6	0	20	119
7:15 AM	15	32	12	2	1	62	5	20	4	2	0	31	2	20	0	0	0	22	1	4	29	1	0	35	1	9	20	12	0	42	192
7:30 AM	15	35	19	2	0	71	3	26	4	4	0	37	9	34	2	0	0	45	0	7	53	0	0	60	0	8	42	21	0	71	284
7:45 AM	14	48	36	2	0	100	8	45	6	9	0	68	4	56	0	0	0	60	2	7	46	2	0	57	2	6	31	32	0	71	356
Total	52	132	76	9	1	270	17	96	19	15	0	147	17	123	4	0	0	144	3	21	155	7	0	186	6	27	100	71	0	204	951
8:00 AM	24	44	32	3	0	103	14	37	7	11	0	69	4	42	1	0	0	47	0	8	45	3	0	56	3	11	17	15	0	46	321
8:15 AM	15	37	21	3	0	76	6	14	12	3	0	35	5	29	0	2	0	36	1	4	34	1	0	40	3	2	16	10	0	31	218
8:30 AM	13	34	30	4	0	81	5	18	4	5	0	32	6	29	6	0	0	41	2	4	55	1	0	62	7	6	13	13	0	39	255
8:45 AM	18	46	22	3	0	89	3	16	5	6	0	30	5	32	2	1	0	40	2	3	55	2	0	62	2	3	11	17	0	33	254
Total	70	161	105	13	0	349	28	85	28	25	0	166	20	132	9	3	0	164	5	19	189	7	0	220	15	22	57	55	0	149	1048
Grand Total	122	293	181	22	1	619	45	181	47	40	0	313	37	255	13	3	0	308	8	40	344	14	0	406	21	49	157	126	0	353	1999
Approach %	19.7	47.3	29.2	3.6	0.2		14.4	57.8	15.0	12.8	0.0		12.0	82.8	4.2	1.0	0.0		2.0	9.9	84.7	3.4	0.0		5.9	13.9	44.5	35.7	0.0		
Total %	6.1	14.7	9.1	1.1	0.1	31.0	2.3	9.1	2.4	2.0	0.0	15.7	1.9	12.8	0.7	0.2	0.0	15.4	0.4	2.0	17.2	0.7	0.0	20.3	1.1	2.5	7.9	6.3	0.0	17.7	
Exiting Leg Total						771						256						278						364						330	1999

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Highland Avenue from North						May Street from East						Highland Avenue from South						Chapel Street from Southwest						May Street from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
7:30 AM	15	35	19	2	0	71	3	26	4	4	0	37	9	34	2	0	0	45	0	7	53	0	0	60	0	8	42	21	0	71	284
7:45 AM	14	48	36	2	0	100	8	45	6	9	0	68	4	56	0	0	0	60	2	7	46	2	0	57	2	6	31	32	0	71	356
8:00 AM	24	44	32	3	0	103	14	37	7	11	0	69	4	42	1	0	0	47	0	8	45	3	0	56	3	11	17	15	0	46	321
8:15 AM	15	37	21	3	0	76	6	14	12	3	0	35	5	29	0	2	0	36	1	4	34	1	0	40	3	2	16	10	0	31	218
Total Volume	68	164	108	10	0	350	31	122	29	27	0	209	22	161	3	2	0	188	3	26	178	6	0	213	8	27	106	78	0	219	1179
% Approach Total	19.4	46.9	30.9	2.9	0.0		14.8	58.4	13.9	12.9	0.0		11.7	85.6	1.6	1.1	0.0		1.4	12.2	83.6	2.8	0.0		3.7	12.3	48.4	35.6	0.0		
PHF	0.708	0.854	0.750	0.833	0.000	0.850	0.554	0.678	0.604	0.614	0.000	0.757	0.611	0.719	0.375	0.250	0.000	0.783	0.375	0.813	0.840	0.500	0.000	0.888	0.667	0.614	0.631	0.609	0.000	0.771	0.828
Entering Leg	68	164	108	10	0	350	31	122	29	27	0	209	22	161	3	2	0	188	3	26	178	6	0	213	8	27	106	78	0	219	1179
Exiting Leg						448						164						165						203						199	1179
Total						798						373						353						416						418	2358

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Highland Avenue						May Street						Highland Avenue						Chapel Street						May Street						
	from North						from East						from South						from Southwest						from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	2	0	1	0	3	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	0	0	1	7
7:15 AM	1	2	0	0	0	3	0	4	0	0	0	4	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	9
7:30 AM	1	6	0	0	0	7	0	6	0	0	0	6	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	14
7:45 AM	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	2	0	1	13	1	0	15	0	0	2	2	0	4	22
Total	2	10	0	2	0	14	0	11	0	0	0	11	1	1	0	0	0	2	0	1	18	1	0	20	0	0	3	2	0	5	52
8:00 AM	1	6	1	0	0	8	0	3	0	0	0	3	0	1	0	0	0	1	0	1	4	0	0	5	0	0	1	1	0	2	19
8:15 AM	1	2	1	0	0	4	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	1	0	1	9
8:30 AM	1	0	0	0	0	1	1	1	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	5
8:45 AM	0	4	0	0	0	4	0	0	1	0	0	1	0	1	0	0	0	1	2	0	4	0	0	6	0	0	0	0	0	0	12
Total	3	12	2	0	0	17	2	4	1	0	0	7	0	2	0	0	0	2	2	1	13	0	0	16	0	0	1	2	0	3	45
Grand Total	5	22	2	2	0	31	2	15	1	0	0	18	1	3	0	0	0	4	2	2	31	1	0	36	0	0	4	4	0	8	97
Approach %	16.1	71.0	6.5	6.5	0.0		11.1	83.3	5.6	0.0	0.0		25.0	75.0	0.0	0.0	0.0		5.6	5.6	86.1	2.8	0.0		0.0	0.0	50.0	50.0	0.0		
Total %	5.2	22.7	2.1	2.1	0.0	32.0	2.1	15.5	1.0	0.0	0.0	18.6	1.0	3.1	0.0	0.0	0.0	4.1	2.1	2.1	32.0	1.0	0.0	37.1	0.0	0.0	4.1	4.1	0.0	8.2	
Exiting Leg Total						40						9						4						23						21	97
Buses	1	5	0	1	0	7	0	12	0	0	0	12	1	2	0	0	0	3	0	1	2	0	0	3	0	0	4	0	0	4	29
% Buses	20.0	22.7	0.0	50.0	0.0	22.6	0.0	80.0	0.0	0.0	0.0	66.7	100.0	66.7	0.0	0.0	0.0	75.0	0.0	50.0	6.5	0.0	0.0	8.3	0.0	0.0	100.0	0.0	0.0	50.0	29.9
Exiting Leg Total						4						7						0						5						13	29
Single-Unit Trucks	4	13	1	1	0	19	2	3	1	0	0	6	0	1	0	0	0	1	2	1	21	0	0	24	0	0	0	4	0	4	54
% Single-Unit	80.0	59.1	50.0	50.0	0.0	61.3	100.0	20.0	100.0	0.0	0.0	33.3	0.0	33.3	0.0	0.0	0.0	25.0	100.0	50.0	67.7	0.0	0.0	66.7	0.0	0.0	0.0	100.0	0.0	50.0	55.7
Exiting Leg Total						28						2						3						14						7	54
Articulated Trucks	0	4	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	9	0	0	0	0	0	0	14
% Articulated	0.0	18.2	50.0	0.0	0.0	16.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.8	100.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	14.4
Exiting Leg Total						8						0						1						4						1	14

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Highland Avenue						May Street						Highland Avenue						Chapel Street						May Street						
	from North						from East						from South						from Southwest						from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	1	2	0	0	0	3	0	4	0	0	0	4	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	9
7:30 AM	1	6	0	0	0	7	0	6	0	0	0	6	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	14
7:45 AM	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	2	0	1	13	1	0	15	0	0	2	2	0	4	22
8:00 AM	1	6	1	0	0	8	0	3	0	0	0	3	0	1	0	0	0	1	0	1	4	0	0	5	0	0	1	1	0	2	19
Total Volume	3	14	1	1	0	19	0	13	0	0	0	13	1	2	0	0	0	3	0	2	20	1	0	23	0	0	3	3	0	6	64
% Approach Total	15.8	73.7	5.3	5.3	0.0		0.0	100.0	0.0	0.0	0.0		33.3	66.7	0.0	0.0	0.0		0.0	8.7	87.0	4.3	0.0		0.0	0.0	50.0	50.0	0.0		
PHF	0.750	0.583	0.250	0.250	0.000	0.594	0.000	0.542	0.000	0.000	0.000	0.542	0.250	0.500	0.000	0.000	0.000	0.375	0.000	0.500	0.385	0.250	0.000	0.383	0.000	0.000	0.375	0.375	0.000	0.375	0.727
Buses	1	3	0	1	0	5	0	11	0	0	0	11	1	2	0	0	0	3	0	1	2	0	0	3	0	0	3	0	0	3	25
Buses %	33.3	21.4	0.0	100.0	0.0	26.3	0.0	84.6	0.0	0.0	0.0	84.6	100.0	100.0	0.0	0.0	0.0	100.0	0.0	50.0	10.0	0.0	0.0	13.0	0.0	0.0	100.0	0.0	0.0	50.0	39.1
Single-Unit Trucks	2	8	1	0	0	11	0	2	0	0	0	2	0	0	0	0	0	0	0	1	11	0	0	12	0	0	0	3	0	3	28
Single-Unit %	66.7	57.1	100.0	0.0	0.0	57.9	0.0	15.4	0.0	0.0	0.0	15.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	55.0	0.0	0.0	52.2	0.0	0.0	0.0	100.0	0.0	50.0	43.8
Articulated Trucks	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	11
Articulated %	0.0	21.4	0.0	0.0	0.0	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	100.0	0.0	34.8	0.0	0.0	0.0	0.0	0.0	0.0	17.2
Buses	1	3	0	1	0	5	0	11	0	0	0	11	1	2	0	0	0	3	0	1	2	0	0	3	0	0	3	0	0	3	25
Single-Unit Trucks	2	8	1	0	0	11	0	2	0	0	0	2	0	0	0	0	0	0	0	1	11	0	0	12	0	0	0	3	0	3	28
Articulated Trucks	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	11
Total Entering Leg	3	14	1	1	0	19	0	13	0	0	0	13	1	2	0	0	0	3	0	2	20	1	0	23	0	0	3	3	0	6	64
Buses						4						6						0						3						12	25
Single-Unit Trucks						14						1						1						8						4	28
Articulated Trucks						7						0						0						3						1	11
Total Exiting Leg						25						7						1						14						17	64

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Buses

	Highland Avenue from North						May Street from East						Highland Avenue from South						Chapel Street from Southwest						May Street from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	1	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
7:15 AM	1	0	0	0	0	1	0	4	0	0	0	4	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6
7:30 AM	0	1	0	0	0	1	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
7:45 AM	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	2	0	1	0	0	0	1	0	0	2	0	0	2	6
Total	1	2	0	1	0	4	0	10	0	0	0	10	1	1	0	0	0	2	0	1	1	0	0	2	0	0	3	0	0	3	21
8:00 AM	0	2	0	0	0	2	0	2	0	0	0	2	0	1	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	7
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	3	0	0	0	3	0	2	0	0	0	2	0	1	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	8
Grand Total	1	5	0	1	0	7	0	12	0	0	0	12	1	2	0	0	0	3	0	1	2	0	0	3	0	0	4	0	0	4	29
Approach %	14.3	71.4	0.0	14.3	0.0		0.0	100.0	0.0	0.0	0.0		33.3	66.7	0.0	0.0	0.0		0.0	33.3	66.7	0.0	0.0		0.0	0.0	100.0	0.0	0.0		
Total %	3.4	17.2	0.0	3.4	0.0	24.1	0.0	41.4	0.0	0.0	0.0	41.4	3.4	6.9	0.0	0.0	0.0	10.3	0.0	3.4	6.9	0.0	0.0	10.3	0.0	0.0	13.8	0.0	0.0	13.8	
Exiting Leg Total						4						7						0						5						13	29

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Highland Avenue from North						May Street from East						Highland Avenue from South						Chapel Street from Southwest						May Street from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	1	0	0	0	0	1	0	4	0	0	0	4	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6
7:30 AM	0	1	0	0	0	1	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
7:45 AM	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	2	0	1	0	0	0	1	0	0	2	0	0	2	6
8:00 AM	0	2	0	0	0	2	0	2	0	0	0	2	0	1	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	7
Total Volume	1	3	0	1	0	5	0	11	0	0	0	11	1	2	0	0	0	3	0	1	2	0	0	3	0	0	3	0	0	3	25
% Approach Total	20.0	60.0	0.0	20.0	0.0		0.0	100.0	0.0	0.0	0.0		33.3	66.7	0.0	0.0	0.0		0.0	33.3	66.7	0.0	0.0		0.0	0.0	100.0	0.0	0.0		
PHF	0.250	0.375	0.000	0.250	0.000	0.625	0.000	0.550	0.000	0.000	0.000	0.550	0.250	0.500	0.000	0.000	0.000	0.375	0.000	0.250	0.500	0.000	0.000	0.750	0.000	0.000	0.375	0.000	0.000	0.375	0.893
Entering Leg	1	3	0	1	0	5	0	11	0	0	0	11	1	2	0	0	0	3	0	1	2	0	0	3	0	0	3	0	0	3	25
Exiting Leg						4						6						0						3						12	25
Total						9						17						3						6						15	50

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Single-Unit Trucks

	Highland Avenue from North						May Street from East						Highland Avenue from South						Chapel Street from Southwest						May Street from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
7:30 AM	1	4	0	0	0	5	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	7
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	2	0	2	8
Total	1	4	0	1	0	6	0	1	0	0	0	1	0	0	0	0	0	0	0	0	10	0	0	10	0	0	0	2	0	2	19
8:00 AM	1	4	1	0	0	6	0	1	0	0	0	1	0	0	0	0	0	0	0	1	3	0	0	4	0	0	0	1	0	1	12
8:15 AM	1	2	0	0	0	3	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	1	0	1	8
8:30 AM	1	0	0	0	0	1	1	1	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	5
8:45 AM	0	3	0	0	0	3	0	0	1	0	0	1	0	1	0	0	0	1	2	0	3	0	0	5	0	0	0	0	0	0	10
Total	3	9	1	0	0	13	2	2	1	0	0	5	0	1	0	0	0	1	2	1	11	0	0	14	0	0	0	2	0	2	35
Grand Total	4	13	1	1	0	19	2	3	1	0	0	6	0	1	0	0	0	1	2	1	21	0	0	24	0	0	0	4	0	4	54
Approach %	21.1	68.4	5.3	5.3	0.0		33.3	50.0	16.7	0.0	0.0		0.0	100.0	0.0	0.0	0.0		8.3	4.2	87.5	0.0	0.0		0.0	0.0	0.0	100.0	0.0		
Total %	7.4	24.1	1.9	1.9	0.0	35.2	3.7	5.6	1.9	0.0	0.0	11.1	0.0	1.9	0.0	0.0	0.0	1.9	3.7	1.9	38.9	0.0	0.0	44.4	0.0	0.0	0.0	7.4	0.0	7.4	
Exiting Leg Total						28						2						3						14						7	54

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Highland Avenue from North						May Street from East						Highland Avenue from South						Chapel Street from Southwest						May Street from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
7:30 AM	1	4	0	0	0	5	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	7
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	2	0	2	8
8:00 AM	1	4	1	0	0	6	0	1	0	0	0	1	0	0	0	0	0	0	0	1	3	0	0	4	0	0	0	1	0	1	12
8:15 AM	1	2	0	0	0	3	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	1	0	1	8
Total Volume	3	10	1	0	0	14	1	2	0	0	0	3	0	0	0	0	0	0	0	1	13	0	0	14	0	0	0	4	0	4	35
% Approach Total	21.4	71.4	7.1	0.0	0.0		33.3	66.7	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	7.1	92.9	0.0	0.0		0.0	0.0	0.0	100.0	0.0		
PHF	0.750	0.625	0.250	0.000	0.000	0.583	0.250	0.500	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.542	0.000	0.000	0.583	0.000	0.000	0.000	0.500	0.000	0.500	0.729
Entering Leg	3	10	1	0	0	14	1	2	0	0	0	3	0	0	0	0	0	0	0	1	13	0	0	14	0	0	0	4	0	4	35
Exiting Leg						18						1						1						10						5	35
Total						32						4						1						24						9	70

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Articulated Trucks

	Highland Avenue						May Street						Highland Avenue						Chapel Street						May Street						
	from North						from East						from South						from Southwest						from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	8
Total	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	12
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
Total	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
Grand Total	0	4	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	9	0	0	0	0	0	0	14
Approach %	0.0	80.0	20.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	88.9	11.1	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	28.6	7.1	0.0	0.0	35.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.1	7.1	0.0	64.3	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						8						0						1						4						1	14

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Highland Avenue						May Street						Highland Avenue						Chapel Street						May Street						
	from North						from East						from South						from Southwest						from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	8
Total Volume	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	12
% Approach Total	0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	87.5	12.5	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.375
Entering Leg	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	12
Exiting Leg						7						0						0						4						1	12
Total						11						0						0						12						1	24

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Highland Avenue from North								May Street from East								Highland Avenue from South								Chapel Street from Southwest								May Street from West								
	Right	Bear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NW	CW-SE	Total	Hard Right	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	100.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	
Exiting Leg Total								1								0								0								0								0	1

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Highland Avenue from North								May Street from East								Highland Avenue from South								Chapel Street from Southwest								May Street from West								
	Right	Bear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NW	CW-SE	Total	Hard Right	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	100.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Exiting Leg								1								0								0								0								0	1
Total								1								0								0								0								1	2

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Highland Avenue from North								May Street from East								Highland Avenue from South								Chapel Street from Southwest								May Street from West								
	Right	Bear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NWB	CW-SEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
7:30 AM	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3
7:45 AM	0	0	0	0	0	1	1	2	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	0	0	2	3	5	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	12
8:00 AM	0	0	0	0	0	1	2	3	0	0	0	0	0	2	1	3	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	9
8:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	4
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	4
8:45 AM	0	0	0	0	0	0	4	4	0	0	0	0	0	2	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	14
Total	0	0	0	0	0	1	7	8	0	0	0	0	0	6	5	11	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	0	4	5	9	31
Grand Total	0	0	0	0	0	3	10	13	0	0	0	0	0	8	6	14	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	0	4	9	13	43
Approach %	0	0	0	0	0	23	77		0	0	0	0	0	57	43		0	0	0	0	0	100	0		0	0	0	0	0	100	0		0	0	0	0	0	31	69		
Total %	0	0	0	0	0	7	23	30	0	0	0	0	0	19	14	33	0	0	0	0	0	2.3	0	2.3	0	0	0	0	0	4.7	0	4.7	0	0	0	0	0	9.3	21	30	
Exiting Leg Total								13								14								1								2								13	43

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Highland Avenue from North								May Street from East								Highland Avenue from South								Chapel Street from Southwest								May Street from West								
	Right	Bear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NWB	CW-SEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
8:00 AM	0	0	0	0	0	1	2	3	0	0	0	0	0	2	1	3	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	9
8:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	4
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	4
8:45 AM	0	0	0	0	0	0	4	4	0	0	0	0	0	2	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	14
Total Volume	0	0	0	0	0	1	7	8	0	0	0	0	0	6	5	11	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	0	4	5	9	31
% Approach Total	0.0	0.0	0.0	0.0	0.0	12.5	87.5		0.0	0.0	0.0	0.0	0.0	54.5	45.5		0.0	0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0	44.4	55.6		
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.438	0.500	0.000	0.000	0.000	0.000	0.000	0.750	0.313	0.458	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.500	0.417	0.563	0.554
Entering Leg	0	0	0	0	0	1	7	8	0	0	0	0	0	6	5	11	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	0	4	5	9	31
Exiting Leg								8								11								1								2								9	31
Total								16								22								2								4								18	62

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Highland Avenue						May Street						Highland Avenue						Chapel Street						May Street						
	from North						from East						from South						from Southwest						from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	23	49	51	7	0	130	12	26	14	10	0	62	3	40	2	2	0	47	1	2	49	4	0	56	5	21	21	21	0	68	363
4:15 PM	35	50	36	8	0	129	10	28	13	5	0	56	3	43	7	2	0	55	3	3	50	2	0	58	6	11	23	16	0	56	354
4:30 PM	22	57	49	7	0	135	9	23	12	7	0	51	10	30	10	0	0	50	1	10	52	2	0	65	7	14	30	24	0	75	376
4:45 PM	27	55	42	7	0	131	7	25	8	4	0	44	7	49	1	1	0	58	1	7	36	2	0	46	6	11	21	12	0	50	329
Total	107	211	178	29	0	525	38	102	47	26	0	213	23	162	20	5	0	210	6	22	187	10	0	225	24	57	95	73	0	249	1422
5:00 PM	27	50	49	8	0	134	1	27	2	3	0	33	9	40	2	0	0	51	0	6	34	4	0	44	6	12	18	24	0	60	322
5:15 PM	45	62	48	3	0	158	7	18	7	3	0	35	8	40	5	1	0	54	1	3	43	4	0	51	3	9	20	18	0	50	348
5:30 PM	29	62	44	7	0	142	7	30	6	6	0	49	4	36	3	0	0	43	1	1	38	3	0	43	3	9	29	24	0	65	342
5:45 PM	31	55	44	7	0	137	9	28	10	10	0	57	2	31	2	1	0	36	1	2	24	3	0	30	12	14	12	15	0	53	313
Total	132	229	185	25	0	571	24	103	25	22	0	174	23	147	12	2	0	184	3	12	139	14	0	168	24	44	79	81	0	228	1325
Grand Total	239	440	363	54	0	1096	62	205	72	48	0	387	46	309	32	7	0	394	9	34	326	24	0	393	48	101	174	154	0	477	2747
Approach %	21.8	40.1	33.1	4.9	0.0		16.0	53.0	18.6	12.4	0.0		11.7	78.4	8.1	1.8	0.0		2.3	8.7	83.0	6.1	0.0		10.1	21.2	36.5	32.3	0.0		
Total %	8.7	16.0	13.2	2.0	0.0	39.9	2.3	7.5	2.6	1.7	0.0	14.1	1.7	11.2	1.2	0.3	0.0	14.3	0.3	1.2	11.9	0.9	0.0	14.3	1.7	3.7	6.3	5.6	0.0	17.4	
Exiting Leg Total						851						308						521						567						500	2747
Cars	236	430	355	54	0	1075	61	202	72	47	0	382	45	308	32	6	0	391	8	34	319	24	0	385	48	101	172	151	0	472	2705
% Cars	98.7	97.7	97.8	100.0	0.0	98.1	98.4	98.5	100.0	97.9	0.0	98.7	97.8	99.7	100.0	85.7	0.0	99.2	88.9	100.0	97.9	100.0	0.0	98.0	100.0	100.0	98.9	98.1	0.0	99.0	98.5
Exiting Leg Total						839						305						511						556						494	2705
Heavy Vehicles	3	10	8	0	0	21	1	3	0	1	0	5	1	1	0	1	0	3	1	0	7	0	0	8	0	0	2	3	0	5	42
% Heavy Vehicles	1.3	2.3	2.2	0.0	0.0	1.9	1.6	1.5	0.0	2.1	0.0	1.3	2.2	0.3	0.0	14.3	0.0	0.8	11.1	0.0	2.1	0.0	0.0	2.0	0.0	0.0	1.1	1.9	0.0	1.0	1.5
Exiting Leg Total						12						3						10						11						6	42

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Highland Avenue						May Street						Highland Avenue						Chapel Street						May Street						
	from North						from East						from South						from Southwest						from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	23	49	51	7	0	130	12	26	14	10	0	62	3	40	2	2	0	47	1	2	49	4	0	56	5	21	21	21	0	68	363
4:15 PM	35	50	36	8	0	129	10	28	13	5	0	56	3	43	7	2	0	55	3	3	50	2	0	58	6	11	23	16	0	56	354
4:30 PM	22	57	49	7	0	135	9	23	12	7	0	51	10	30	10	0	0	50	1	10	52	2	0	65	7	14	30	24	0	75	376
4:45 PM	27	55	42	7	0	131	7	25	8	4	0	44	7	49	1	1	0	58	1	7	36	2	0	46	6	11	21	12	0	50	329
Total Volume	107	211	178	29	0	525	38	102	47	26	0	213	23	162	20	5	0	210	6	22	187	10	0	225	24	57	95	73	0	249	1422
% Approach Total	20.4	40.2	33.9	5.5	0.0		17.8	47.9	22.1	12.2	0.0		11.0	77.1	9.5	2.4	0.0		2.7	9.8	83.1	4.4	0.0		9.6	22.9	38.2	29.3	0.0		
PHF	0.764	0.925	0.873	0.906	0.000	0.972	0.792	0.911	0.839	0.650	0.000	0.859	0.575	0.827	0.500	0.625	0.000	0.905	0.500	0.550	0.899	0.625	0.000	0.865	0.857	0.679	0.792	0.760	0.000	0.830	0.945
Cars	105	206	174	29	0	514	38	99	47	25	0	209	23	161	20	5	0	209	6	22	182	10	0	220	24	57	94	71	0	246	1398
Cars %	98.1	97.6	97.8	100.0	0.0	97.9	100.0	97.1	100.0	96.2	0.0	98.1	100.0	99.4	100.0	100.0	0.0	99.5	100.0	100.0	97.3	100.0	0.0	97.8	100.0	100.0	98.9	97.3	0.0	98.8	98.3
Heavy Vehicles	2	5	4	0	0	11	0	3	0	1	0	4	0	1	0	0	0	1	0	0	5	0	0	5	0	0	1	2	0	3	24
Heavy Vehicles %	1.9	2.4	2.2	0.0	0.0	2.1	0.0	2.9	0.0	3.8	0.0	1.9	0.0	0.6	0.0	0.0	0.0	0.5	0.0	0.0	2.7	0.0	0.0	2.2	0.0	0.0	1.1	2.7	0.0	1.2	1.7
Cars Enter Leg	105	206	174	29	0	514	38	99	47	25	0	209	23	161	20	5	0	209	6	22	182	10	0	220	24	57	94	71	0	246	1398
Heavy Enter Leg	2	5	4	0	0	11	0	3	0	1	0	4	0	1	0	0	0	1	0	0	5	0	0	5	0	0	1	2	0	3	24
Total Entering Leg	107	211	178	29	0	525	38	102	47	26	0	213	23	162	20	5	0	210	6	22	187	10	0	225	24	57	95	73	0	249	1422
Cars Exiting Leg						452						168						262						282						234	1398
Heavy Exiting Leg						8						1						5						5						5	24
Total Exiting Leg						460						169						267						287						239	1422

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars

	Highland Avenue from North						May Street from East						Highland Avenue from South						Chapel Street from Southwest						May Street from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	23	48	50	7	0	128	12	25	14	9	0	60	3	40	2	2	0	47	1	2	48	4	0	55	5	21	21	21	0	68	358
4:15 PM	34	48	36	8	0	126	10	28	13	5	0	56	3	43	7	2	0	55	3	3	48	2	0	56	6	11	23	15	0	55	348
4:30 PM	21	55	47	7	0	130	9	23	12	7	0	51	10	30	10	0	0	50	1	10	51	2	0	64	7	14	29	23	0	73	368
4:45 PM	27	55	41	7	0	130	7	23	8	4	0	42	7	48	1	1	0	57	1	7	35	2	0	45	6	11	21	12	0	50	324
Total	105	206	174	29	0	514	38	99	47	25	0	209	23	161	20	5	0	209	6	22	182	10	0	220	24	57	94	71	0	246	1398
5:00 PM	27	49	47	8	0	131	1	27	2	3	0	33	9	40	2	0	0	51	0	6	34	4	0	44	6	12	17	24	0	59	318
5:15 PM	45	61	47	3	0	156	7	18	7	3	0	35	8	40	5	1	0	54	1	3	43	4	0	51	3	9	20	17	0	49	345
5:30 PM	29	61	43	7	0	140	6	30	6	6	0	48	3	36	3	0	0	42	0	1	36	3	0	40	3	9	29	24	0	65	335
5:45 PM	30	53	44	7	0	134	9	28	10	10	0	57	2	31	2	0	0	35	1	2	24	3	0	30	12	14	12	15	0	53	309
Total	131	224	181	25	0	561	23	103	25	22	0	173	22	147	12	1	0	182	2	12	137	14	0	165	24	44	78	80	0	226	1307
Grand Total	236	430	355	54	0	1075	61	202	72	47	0	382	45	308	32	6	0	391	8	34	319	24	0	385	48	101	172	151	0	472	2705
Approach %	22.0	40.0	33.0	5.0	0.0		16.0	52.9	18.8	12.3	0.0		11.5	78.8	8.2	1.5	0.0		2.1	8.8	82.9	6.2	0.0		10.2	21.4	36.4	32.0	0.0		
Total %	8.7	15.9	13.1	2.0	0.0	39.7	2.3	7.5	2.7	1.7	0.0	14.1	1.7	11.4	1.2	0.2	0.0	14.5	0.3	1.3	11.8	0.9	0.0	14.2	1.8	3.7	6.4	5.6	0.0	17.4	
Exiting Leg Total						839						305						511						556						494	2705

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Highland Avenue from North						May Street from East						Highland Avenue from South						Chapel Street from Southwest						May Street from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	23	48	50	7	0	128	12	25	14	9	0	60	3	40	2	2	0	47	1	2	48	4	0	55	5	21	21	21	0	68	358
4:15 PM	34	48	36	8	0	126	10	28	13	5	0	56	3	43	7	2	0	55	3	3	48	2	0	56	6	11	23	15	0	55	348
4:30 PM	21	55	47	7	0	130	9	23	12	7	0	51	10	30	10	0	0	50	1	10	51	2	0	64	7	14	29	23	0	73	368
4:45 PM	27	55	41	7	0	130	7	23	8	4	0	42	7	48	1	1	0	57	1	7	35	2	0	45	6	11	21	12	0	50	324
Total Volume	105	206	174	29	0	514	38	99	47	25	0	209	23	161	20	5	0	209	6	22	182	10	0	220	24	57	94	71	0	246	1398
% Approach Total	20.4	40.1	33.9	5.6	0.0		18.2	47.4	22.5	12.0	0.0		11.0	77.0	9.6	2.4	0.0		2.7	10.0	82.7	4.5	0.0		9.8	23.2	38.2	28.9	0.0		
PHF	0.772	0.936	0.870	0.906	0.000	0.988	0.792	0.884	0.839	0.694	0.000	0.871	0.575	0.839	0.500	0.625	0.000	0.917	0.500	0.550	0.892	0.625	0.000	0.859	0.857	0.679	0.810	0.772	0.000	0.842	0.950
Entering Leg	105	206	174	29	0	514	38	99	47	25	0	209	23	161	20	5	0	209	6	22	182	10	0	220	24	57	94	71	0	246	1398
Exiting Leg						452						168						262						282						234	1398
Total						966						377						471						502						480	2796

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Highland Avenue						May Street						Highland Avenue						Chapel Street						May Street						
	from North						from East						from South						from Southwest						from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	1	1	0	0	2	0	1	0	1	0	2	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5
4:15 PM	1	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	1	0	1	6
4:30 PM	1	2	2	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	0	2	8
4:45 PM	0	0	1	0	0	1	0	2	0	0	0	2	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	5
Total	2	5	4	0	0	11	0	3	0	1	0	4	0	1	0	0	0	1	0	0	5	0	0	5	0	0	1	2	0	3	24
5:00 PM	0	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4
5:15 PM	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
5:30 PM	0	1	1	0	0	2	1	0	0	0	0	1	1	0	0	0	0	1	1	0	2	0	0	3	0	0	0	0	0	0	7
5:45 PM	1	2	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	1	5	4	0	0	10	1	0	0	0	0	1	1	0	0	1	0	2	1	0	2	0	0	3	0	0	1	1	0	2	18
Grand Total	3	10	8	0	0	21	1	3	0	1	0	5	1	1	0	1	0	3	1	0	7	0	0	8	0	0	2	3	0	5	42
Approach %	14.3	47.6	38.1	0.0	0.0		20.0	60.0	0.0	20.0	0.0		33.3	33.3	0.0	33.3	0.0		12.5	0.0	87.5	0.0	0.0		0.0	0.0	40.0	60.0	0.0		
Total %	7.1	23.8	19.0	0.0	0.0	50.0	2.4	7.1	0.0	2.4	0.0	11.9	2.4	2.4	0.0	2.4	0.0	7.1	2.4	0.0	16.7	0.0	0.0	19.0	0.0	0.0	4.8	7.1	0.0	11.9	
Exiting Leg Total						12						3						10						11						6	42
Buses	0	6	1	0	0	7	0	1	0	0	0	1	0	0	0	1	0	1	0	0	5	0	0	5	0	0	1	0	0	1	15
% Buses	0.0	60.0	12.5	0.0	0.0	33.3	0.0	33.3	0.0	0.0	0.0	20.0	0.0	0.0	0.0	100.0	0.0	33.3	0.0	0.0	71.4	0.0	0.0	62.5	0.0	0.0	50.0	0.0	0.0	20.0	35.7
Exiting Leg Total						5						1						1						7						1	15
Single-Unit Trucks	3	4	6	0	0	13	1	2	0	1	0	4	1	1	0	0	0	2	1	0	2	0	0	3	0	0	1	3	0	4	26
% Single-Unit	100.0	40.0	75.0	0.0	0.0	61.9	100.0	66.7	0.0	100.0	0.0	80.0	100.0	100.0	0.0	0.0	0.0	66.7	100.0	0.0	28.6	0.0	0.0	37.5	0.0	0.0	50.0	100.0	0.0	80.0	61.9
Exiting Leg Total						7						2						8						4						5	26
Articulated Trucks	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Articulated	0.0	0.0	12.5	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4
Exiting Leg Total						0						0						1						0						0	1

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Highland Avenue						May Street						Highland Avenue						Chapel Street						May Street						
	from North						from East						from South						from Southwest						from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	1	1	0	0	2	0	1	0	1	0	2	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5
4:15 PM	1	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	1	0	1	6
4:30 PM	1	2	2	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	0	2	8
4:45 PM	0	0	1	0	0	1	0	2	0	0	0	2	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	5
Total Volume	2	5	4	0	0	11	0	3	0	1	0	4	0	1	0	0	0	1	0	0	5	0	0	5	0	0	1	2	0	3	24
% Approach Total	18.2	45.5	36.4	0.0	0.0		0.0	75.0	0.0	25.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0		0.0	0.0	33.3	66.7	0.0		
PHF	0.500	0.625	0.500	0.000	0.000	0.550	0.000	0.375	0.000	0.250	0.000	0.500	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.625	0.000	0.000	0.625	0.000	0.000	0.250	0.500	0.000	0.375	0.750
Buses	0	4	0	0	0	4	0	1	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	0	0	1	0	0	1	9
Buses %	0.0	80.0	0.0	0.0	0.0	36.4	0.0	33.3	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0	0.0	60.0	0.0	0.0	100.0	0.0	0.0	33.3	37.5
Single-Unit Trucks	2	1	4	0	0	7	0	2	0	1	0	3	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	2	0	2	15
Single-Unit %	100.0	20.0	100.0	0.0	0.0	63.6	0.0	66.7	0.0	100.0	0.0	75.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	0.0	0.0	100.0	0.0	66.7	62.5
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	4	0	0	0	4	0	1	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	0	0	1	0	0	1	9
Single-Unit Trucks	2	1	4	0	0	7	0	2	0	1	0	3	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	2	0	2	15
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	2	5	4	0	0	11	0	3	0	1	0	4	0	1	0	0	0	1	0	0	5	0	0	5	0	0	1	2	0	3	24
Buses						3						1						0						4						1	9
Single-Unit Trucks						5						0						5						1						4	15
Articulated Trucks						0						0						0						0						0	0
Total Exiting Leg						8						1						5						5						5	24

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Buses

	Highland Avenue						May Street						Highland Avenue						Chapel Street						May Street						
	from North						from East						from South						from Southwest						from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
4:15 PM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3
4:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
Total	0	4	0	0	0	4	0	1	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	0	0	1	0	0	1	9
5:00 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2
5:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	2	1	0	0	3	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	0	0	2	0	0	0	0	0	0	6
Grand Total	0	6	1	0	0	7	0	1	0	0	0	1	0	0	0	1	0	1	0	0	5	0	0	5	0	0	1	0	0	1	15
Approach %	0.0	85.7	14.3	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	100.0	0.0		0.0	0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0		
Total %	0.0	40.0	6.7	0.0	0.0	46.7	0.0	6.7	0.0	0.0	0.0	6.7	0.0	0.0	0.0	6.7	0.0	6.7	0.0	0.0	33.3	0.0	0.0	33.3	0.0	0.0	6.7	0.0	0.0	6.7	
Exiting Leg Total						5						1						1						7						1	15

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Highland Avenue						May Street						Highland Avenue						Chapel Street						May Street						
	from North						from East						from South						from Southwest						from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
4:15 PM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3
4:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
Total Volume	0	4	0	0	0	4	0	1	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	0	0	1	0	0	1	9
% Approach Total	0.0	100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0		
PHF	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.750	0.000	0.000	0.250	0.000	0.000	0.250	0.750
Entering Leg	0	4	0	0	0	4	0	1	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	0	0	1	0	0	1	9
Exiting Leg						3						1						0						4						1	9
Total						7						2						0						7						2	18

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Single-Unit Trucks

	Highland Avenue from North						May Street from East						Highland Avenue from South						Chapel Street from Southwest						May Street from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	1	0	0	1	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
4:15 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	3
4:30 PM	1	1	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	6
4:45 PM	0	0	1	0	0	1	0	1	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	2	1	4	0	0	7	0	2	0	1	0	3	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	2	0	2	15
5:00 PM	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5:30 PM	0	1	1	0	0	2	1	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	5
5:45 PM	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	1	3	2	0	0	6	1	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	1	0	0	1	1	0	2	11
Grand Total	3	4	6	0	0	13	1	2	0	1	0	4	1	1	0	0	0	2	1	0	2	0	0	3	0	0	1	3	0	4	26
Approach %	23.1	30.8	46.2	0.0	0.0		25.0	50.0	0.0	25.0	0.0		50.0	50.0	0.0	0.0	0.0		33.3	0.0	66.7	0.0	0.0		0.0	0.0	25.0	75.0	0.0		
Total %	11.5	15.4	23.1	0.0	0.0	50.0	3.8	7.7	0.0	3.8	0.0	15.4	3.8	3.8	0.0	0.0	0.0	7.7	3.8	0.0	7.7	0.0	0.0	11.5	0.0	0.0	3.8	11.5	0.0	15.4	
Exiting Leg Total						7						2						8						4						5	26

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Highland Avenue from North						May Street from East						Highland Avenue from South						Chapel Street from Southwest						May Street from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	1	0	0	1	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
4:15 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	3
4:30 PM	1	1	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	6
4:45 PM	0	0	1	0	0	1	0	1	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Total Volume	2	1	4	0	0	7	0	2	0	1	0	3	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	2	0	2	15
% Approach Total	28.6	14.3	57.1	0.0	0.0		0.0	66.7	0.0	33.3	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0		0.0	0.0	0.0	100.0	0.0		
PHF	0.500	0.250	0.500	0.000	0.000	0.438	0.000	0.500	0.000	0.250	0.000	0.375	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.500	0.625
Entering Leg	2	1	4	0	0	7	0	2	0	1	0	3	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	2	0	2	15
Exiting Leg						5						0						5						1						4	15
Total						12						3						6						3						6	30

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Articulated Trucks

	Highland Avenue						May Street						Highland Avenue						Chapel Street						May Street						
	from North						from East						from South						from Southwest						from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Approach %	0.0	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						0						0						1						0						0	1

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:30 PM	Highland Avenue						May Street						Highland Avenue						Chapel Street						May Street						
	from North						from East						from South						from Southwest						from West						
	Right	Bear Righ	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Total
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Approach Total	0.0	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Exiting Leg						0						0						1						0						0	1
Total						1						0						1						0						0	2

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Highland Avenue from North								May Street from East								Highland Avenue from South								Chapel Street from Southwest								May Street from West								
	Right	Bear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NW	CW-SE	Total	Hard Right	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2
Grand Total	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	100.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0		
Exiting Leg Total								0								0								0								0								2	2

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:45 PM	Highland Avenue from North								May Street from East								Highland Avenue from South								Chapel Street from Southwest								May Street from West								
	Right	Bear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NW	CW-SE	Total	Hard Right	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
Total Volume	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	100.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.500
Entering Leg	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Exiting Leg								0								0								0								0								2	2
Total								0								1								0								0								3	4

PDI File #: **239698 D**
Location: **N: Highland Avenue S: Highland Avenue**
Location: **E: May Street W: May Street SW: Chapel Street**
City, State: **Needham, MA**
Client: **Nitsch/B. Zimolka**
Site Code: **TBD**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:00 PM**
End Time: **6:00 PM**
Class:

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Highland Avenue from North								May Street from East								Highland Avenue from South								Chapel Street from Southwest								May Street from West								
	Right	Bear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NW	CW-SE	Total	Hard Right	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	0	0	2	3	5	0	0	0	0	0	4	5	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	16
4:15 PM	0	0	0	0	0	4	1	5	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	4	5	14
4:30 PM	0	0	0	0	0	4	3	7	0	0	0	0	0	2	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	17
4:45 PM	0	0	0	0	0	1	5	6	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	11
Total	0	0	0	0	0	11	12	23	0	0	0	0	0	10	11	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	5	8	13	58
5:00 PM	0	0	0	0	0	3	2	5	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	10
5:15 PM	0	0	0	0	0	6	3	9	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	11
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	4	11	13
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	5
Total	0	0	0	0	0	9	5	14	0	0	0	0	0	4	4	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	8	17	39
Grand Total	0	0	0	0	0	20	17	37	0	0	0	0	0	14	15	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	14	16	30	97
Approach %	0	0	0	0	0	54	46		0	0	0	0	0	48	52		0	0	0	0	0	0	0		0	0	0	0	0	0	100		0	0	0	0	0	47	53		
Total %	0	0	0	0	0	21	18	38	0	0	0	0	0	14	15	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	14	16	31	
Exiting Leg Total								37								29								0								1								30	97

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

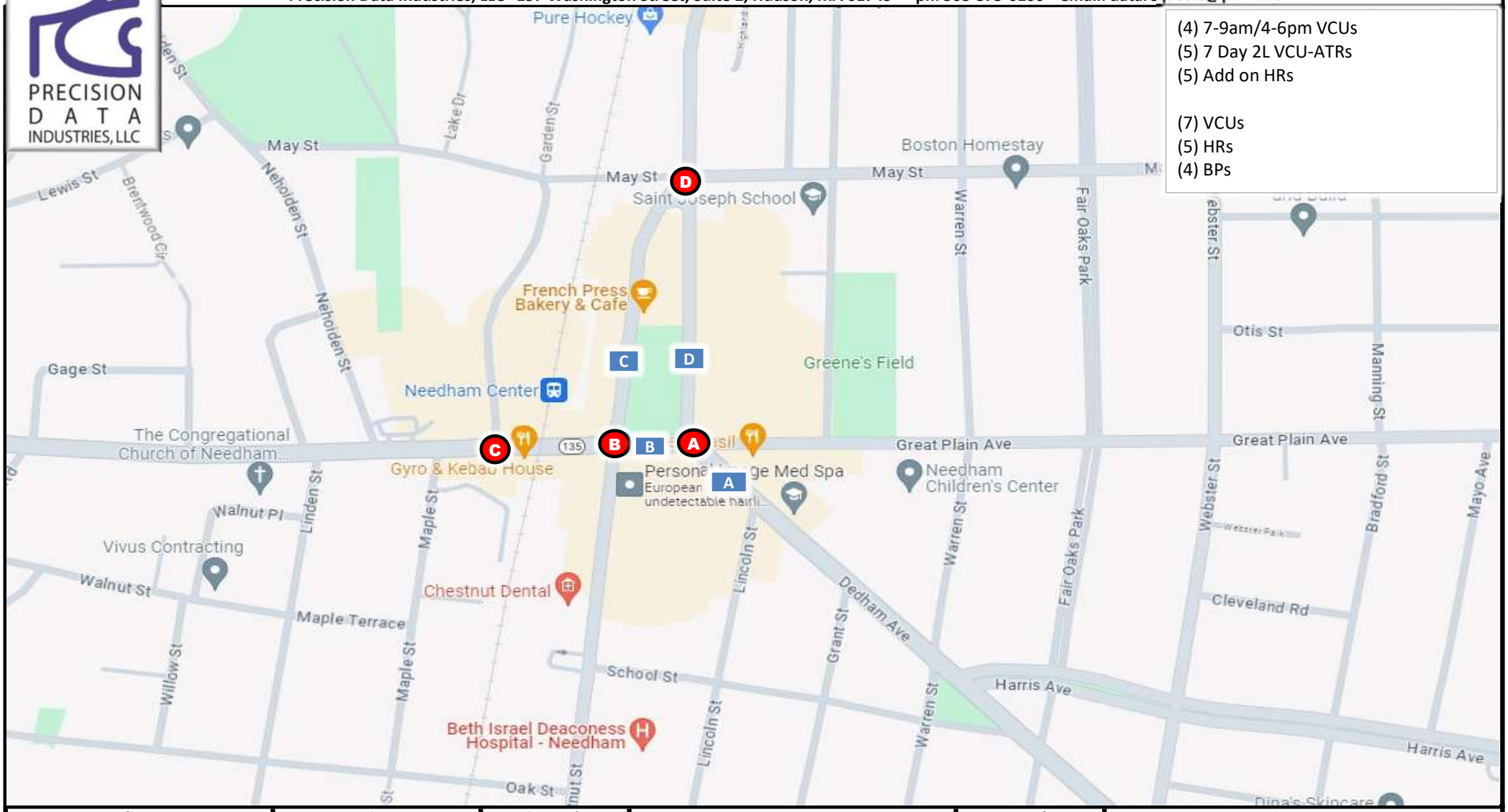
4:00 PM	Highland Avenue from North								May Street from East								Highland Avenue from South								Chapel Street from Southwest								May Street from West								
	Right	Bear Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Bear Left	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-WB	CW-EB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-NW	CW-SE	Total	Hard Right	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	0	0	2	3	5	0	0	0	0	0	4	5	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	16
4:15 PM	0	0	0	0	0	4	1	5	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	4	5	14
4:30 PM	0	0	0	0	0	4	3	7	0	0	0	0	0	2	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	17
4:45 PM	0	0	0	0	0	1	5	6	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	11
Total Volume	0	0	0	0	0	11	12	23	0	0	0	0	0	10	11	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	5	8	13	58
% Approach Total	0.0	0.0	0.0	0.0	0.0	47.8	52.2		0.0	0.0	0.0	0.0	0.0	47.6	52.4		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	38.5	61.5		
PHF	0.000	0.000	0.000	0.000	0.000	0.688	0.600	0.821	0.000	0.000	0.000	0.000	0.000	0.625	0.550	0.583	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.625	0.500	0.650	0.853
Entering Leg	0	0	0	0	0	11	12	23	0	0	0	0	0	10	11	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	5	8	13	58
Exiting Leg								23								21								0								1								13	58
Total								46								42								0								2								26	116

Location Map: 239698 Needham, MA

Precision Data Industries, LLC 157 Washington Street, Suite 2, Hudson, MA 01749 ph: 508-875-0100 email: datareguests@pdillc.com

(4) 7-9am/4-6pm VCUs
(5) 7 Day 2L VCU-ATRs
(5) Add on HRs

(7) VCUs
(5) HRs
(4) BPs



Client:	Engineer:	Site Code:	Date:	PDI Job #	City, State:
Nitsch	B. Zimolka	TBD	Tues 1/23/24 - Mon 1/29/24	239698	Needham, MA

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Tuesday, January 23, 2024**
Direction: **NB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-A**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	4	0	0	0	4
12:15 AM	0	0	0	0	0	0	0
12:30 AM	0	0	1	0	0	0	1
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	2	0	2
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	1	0	0	0	1
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	1	0	1
3:45 AM	0	0	3	0	0	0	3
4:00 AM	0	0	2	0	0	0	2
4:15 AM	0	0	3	0	0	0	3
4:30 AM	0	0	3	0	0	0	3
4:45 AM	0	0	7	0	0	0	7
5:00 AM	0	0	7	0	0	0	7
5:15 AM	0	0	13	0	0	0	13
5:30 AM	0	0	30	0	2	0	32
5:45 AM	0	0	25	0	2	0	27
6:00 AM	0	0	27	0	2	0	29
6:15 AM	0	0	38	0	1	0	39
6:30 AM	0	0	41	0	2	0	43
6:45 AM	0	0	57	0	1	0	58
7:00 AM	0	0	46	0	1	0	47
7:15 AM	0	0	57	0	2	0	59
7:30 AM	0	0	106	0	1	0	107
7:45 AM	0	0	107	1	1	0	109
8:00 AM	0	0	103	1	3	0	107
8:15 AM	0	1	89	0	2	0	92
8:30 AM	0	0	72	0	6	0	78
8:45 AM	0	0	94	0	4	1	99
9:00 AM	0	0	97	0	4	1	102
9:15 AM	0	0	80	0	8	0	88
9:30 AM	0	0	84	0	1	0	85
9:45 AM	0	0	64	0	2	1	67
10:00 AM	0	0	40	0	3	0	43
10:15 AM	0	0	67	0	2	0	69
10:30 AM	0	0	51	0	2	1	54
10:45 AM	0	0	50	0	3	0	53
11:00 AM	0	0	51	0	0	0	51
11:15 AM	0	0	55	0	2	0	57
11:30 AM	0	0	56	0	3	0	59
11:45 AM	0	0	55	1	2	0	58
AM Total	**0**	**1**	**1687**	**3**	**65**	**4**	**1760**
Percentage	**0.00%**	**0.06%**	**95.85%**	**0.17%**	**3.69%**	**0.23%**	
AM Peak	**12:00 AM**	**7:30 AM**	**7:30 AM**	**7:15 AM**	**8:30 AM**	**8:15 AM**	**7:30 AM**
Volume	**0**	**1**	**405**	**2**	**22**	**2**	**415**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	51	0	2	0	53
12:15 PM	0	0	38	0	1	1	40
12:30 PM	0	0	50	0	1	1	52
12:45 PM	0	0	55	0	1	0	56
1:00 PM	0	0	57	0	1	0	58
1:15 PM	0	0	47	0	1	0	48
1:30 PM	0	0	38	0	3	0	41
1:45 PM	0	0	51	0	1	0	52
2:00 PM	0	0	66	0	1	0	67
2:15 PM	0	0	73	0	0	0	73
2:30 PM	0	0	71	0	0	0	71
2:45 PM	0	0	72	1	0	0	73
3:00 PM	0	0	71	0	0	0	71
3:15 PM	0	0	73	0	2	0	75
3:30 PM	0	0	62	0	0	0	62
3:45 PM	0	0	73	0	0	0	73
4:00 PM	0	0	63	0	0	0	63
4:15 PM	0	0	82	0	0	0	82
4:30 PM	0	0	69	0	0	0	69
4:45 PM	0	0	73	1	0	0	74
5:00 PM	0	0	62	0	0	0	62
5:15 PM	0	0	64	0	0	0	64
5:30 PM	0	0	69	0	0	0	69
5:45 PM	0	0	55	0	0	0	55
6:00 PM	0	0	57	0	0	0	57
6:15 PM	0	0	52	0	1	0	53
6:30 PM	0	0	36	0	0	0	36
6:45 PM	0	0	41	0	0	0	41
7:00 PM	0	0	31	0	0	0	31
7:15 PM	0	0	26	1	0	0	27
7:30 PM	0	0	27	0	0	0	27
7:45 PM	0	0	18	0	0	0	18
8:00 PM	0	0	22	0	0	0	22
8:15 PM	0	0	28	0	1	0	29
8:30 PM	0	0	17	0	0	0	17
8:45 PM	0	0	17	0	0	0	17
9:00 PM	0	0	29	0	0	0	29
9:15 PM	0	0	21	0	0	0	21
9:30 PM	0	0	13	0	0	0	13
9:45 PM	0	0	13	0	0	0	13
10:00 PM	0	0	6	0	0	0	6
10:15 PM	0	0	4	0	0	0	4
10:30 PM	0	0	7	0	0	0	7
10:45 PM	0	0	11	0	4	0	15
11:00 PM	0	0	4	0	0	1	5
11:15 PM	0	0	5	0	0	0	5
11:30 PM	0	0	4	0	0	0	4
11:45 PM	0	0	3	0	0	1	4
PM Total	**0**	**0**	**1977**	**3**	**20**	**4**	**2004**
Percentage	**0.00%**	**0.00%**	**98.65%**	**0.15%**	**1.00%**	**0.20%**	
PM Peak	**12:00 PM**	**12:00 PM**	**2:15 PM**	**2:00 PM**	**12:45 PM**	**12:00 PM**	**2:30 PM**
Volume	**0**	**0**	**287**	**1**	**6**	**2**	**290**
Day Total	**0**	**1**	**3664**	**6**	**85**	**8**	**3764**
Percentage	**0.00%**	**0.03%**	**97.34%**	**0.16%**	**2.26%**	**0.21%**	

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Wednesday, January 24, 2024**
Direction: **NB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-A**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	0	0	1
12:15 AM	0	0	3	0	0	0	3
12:30 AM	0	0	0	0	0	0	0
12:45 AM	0	0	2	0	0	0	2
1:00 AM	0	0	0	0	1	0	1
1:15 AM	0	0	0	0	0	0	0
1:30 AM	0	0	1	0	1	0	2
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	2	0	0	0	2
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	2	0	0	0	2
3:00 AM	0	0	1	0	1	0	2
3:15 AM	0	0	3	0	1	0	4
3:30 AM	0	0	3	0	0	0	3
3:45 AM	0	0	4	0	0	0	4
4:00 AM	0	0	3	0	1	0	4
4:15 AM	0	0	4	0	0	0	4
4:30 AM	0	0	3	0	2	0	5
4:45 AM	0	0	4	0	1	0	5
5:00 AM	0	0	7	0	1	0	8
5:15 AM	0	0	19	0	1	0	20
5:30 AM	0	0	16	0	0	0	16
5:45 AM	0	0	40	0	2	1	43
6:00 AM	0	0	21	0	0	0	21
6:15 AM	0	0	34	0	0	1	35
6:30 AM	0	0	44	0	3	0	47
6:45 AM	0	0	50	0	3	0	53
7:00 AM	0	0	46	0	2	0	48
7:15 AM	0	0	57	0	1	0	58
7:30 AM	0	0	95	0	0	0	95
7:45 AM	0	0	112	1	2	0	115
8:00 AM	0	0	100	1	2	0	103
8:15 AM	0	0	88	0	1	0	89
8:30 AM	0	0	85	0	4	0	89
8:45 AM	0	1	81	0	4	1	87
9:00 AM	0	0	83	0	1	0	84
9:15 AM	0	0	72	0	5	0	77
9:30 AM	0	0	82	0	3	0	85
9:45 AM	0	0	69	0	1	0	70
10:00 AM	0	0	62	0	2	1	65
10:15 AM	0	0	58	1	1	0	60
10:30 AM	0	0	44	0	3	0	47
10:45 AM	0	0	49	0	2	1	52
11:00 AM	0	0	52	0	4	0	56
11:15 AM	0	0	62	0	0	1	63
11:30 AM	0	0	59	0	2	0	61
11:45 AM	0	0	86	0	0	1	87
AM Total	**0**	**1**	**1710**	**3**	**58**	**7**	**1779**
Percentage	**0.00%**	**0.06%**	**96.12%**	**0.17%**	**3.26%**	**0.39%**	
AM Peak	**12:00 AM**	**8:00 AM**	**7:30 AM**	**7:15 AM**	**8:30 AM**	**5:30 AM**	**7:30 AM**
Volume	**0**	**1**	**395**	**2**	**14**	**2**	**402**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	54	0	0	0	54
12:15 PM	1	0	61	0	0	0	62
12:30 PM	0	0	59	0	1	0	60
12:45 PM	0	0	54	1	2	1	58
1:00 PM	0	0	52	0	0	0	52
1:15 PM	0	0	55	0	1	0	56
1:30 PM	0	0	45	0	0	0	45
1:45 PM	0	0	47	0	3	0	50
2:00 PM	0	0	60	0	0	0	60
2:15 PM	0	0	54	1	1	0	56
2:30 PM	0	0	56	1	0	0	57
2:45 PM	0	0	73	1	0	0	74
3:00 PM	0	0	70	0	0	0	70
3:15 PM	0	0	62	0	2	1	65
3:30 PM	0	0	53	0	0	0	53
3:45 PM	0	0	73	0	1	0	74
4:00 PM	0	0	59	0	0	0	59
4:15 PM	0	0	45	0	1	0	46
4:30 PM	0	0	49	1	0	0	50
4:45 PM	0	0	70	0	2	0	72
5:00 PM	0	0	82	0	0	0	82
5:15 PM	0	0	62	0	0	0	62
5:30 PM	0	0	67	0	0	0	67
5:45 PM	0	0	57	0	0	0	57
6:00 PM	0	0	71	0	1	0	72
6:15 PM	0	0	44	0	0	0	44
6:30 PM	0	0	64	0	0	0	64
6:45 PM	0	0	46	0	1	0	47
7:00 PM	0	0	30	0	0	0	30
7:15 PM	0	0	29	0	0	0	29
7:30 PM	0	0	32	0	0	0	32
7:45 PM	0	0	34	0	0	0	34
8:00 PM	0	0	20	0	1	0	21
8:15 PM	0	0	28	0	0	0	28
8:30 PM	0	0	23	1	0	0	24
8:45 PM	0	0	16	0	0	0	16
9:00 PM	0	0	16	0	0	0	16
9:15 PM	0	0	20	0	0	0	20
9:30 PM	0	0	26	0	0	0	26
9:45 PM	0	0	16	0	0	0	16
10:00 PM	0	0	17	0	0	0	17
10:15 PM	0	0	7	0	0	0	7
10:30 PM	0	0	12	0	0	0	12
10:45 PM	0	0	8	0	0	0	8
11:00 PM	0	0	3	1	0	0	4
11:15 PM	0	0	6	0	0	0	6
11:30 PM	0	0	4	0	0	0	4
11:45 PM	0	0	4	0	0	0	4
PM Total	**1**	**0**	**1995**	**7**	**17**	**2**	**2022**
Percentage	**0.05%**	**0.00%**	**98.66%**	**0.35%**	**0.84%**	**0.10%**	
PM Peak	**12:00 PM**	**12:00 PM**	**4:45 PM**	**2:00 PM**	**12:30 PM**	**12:00 PM**	**4:45 PM**
Volume	**1**	**0**	**281**	**3**	**4**	**1**	**283**
Day Total	**1**	**1**	**3705**	**10**	**75**	**9**	**3801**
Percentage	**0.03%**	**0.03%**	**97.47%**	**0.26%**	**1.97%**	**0.24%**	

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Thursday, January 25, 2024**
Direction: **NB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-A**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	4	0	0	0	4
12:15 AM	0	0	3	0	0	0	3
12:30 AM	0	0	1	0	0	0	1
12:45 AM	0	0	0	0	0	1	1
1:00 AM	0	0	1	0	0	0	1
1:15 AM	0	0	0	0	0	0	0
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	2	0	0	0	2
3:30 AM	0	0	1	0	0	0	1
3:45 AM	0	0	3	0	0	0	3
4:00 AM	0	0	3	0	1	1	5
4:15 AM	0	0	2	0	0	0	2
4:30 AM	0	0	4	0	1	0	5
4:45 AM	0	0	10	0	0	1	11
5:00 AM	0	0	6	0	0	0	6
5:15 AM	0	0	15	0	2	0	17
5:30 AM	0	0	27	0	3	1	31
5:45 AM	0	0	31	0	2	0	33
6:00 AM	0	0	17	0	1	0	18
6:15 AM	0	0	37	0	1	0	38
6:30 AM	0	0	39	0	1	0	40
6:45 AM	0	0	46	0	0	0	46
7:00 AM	0	0	44	0	2	1	47
7:15 AM	0	0	55	0	1	0	56
7:30 AM	0	0	107	0	0	0	107
7:45 AM	0	0	125	1	2	0	128
8:00 AM	0	0	97	1	1	0	99
8:15 AM	0	1	88	0	2	1	92
8:30 AM	0	0	82	0	1	0	83
8:45 AM	0	0	97	0	3	1	101
9:00 AM	0	0	73	0	2	1	76
9:15 AM	0	0	73	0	4	0	77
9:30 AM	0	0	68	0	5	0	73
9:45 AM	0	0	82	0	2	0	84
10:00 AM	0	0	61	0	2	0	63
10:15 AM	0	0	59	0	5	0	64
10:30 AM	0	0	58	0	1	0	59
10:45 AM	0	0	63	0	1	0	64
11:00 AM	0	0	48	1	1	0	50
11:15 AM	0	0	64	0	0	0	64
11:30 AM	0	0	48	0	1	0	49
11:45 AM	0	0	50	1	0	0	51
AM Total	**0**	**1**	**1697**	**4**	**48**	**8**	**1758**
Percentage	**0.00%**	**0.06%**	**96.53%**	**0.23%**	**2.73%**	**0.46%**	
AM Peak	**12:00 AM**	**7:30 AM**	**7:30 AM**	**7:15 AM**	**8:45 AM**	**8:15 AM**	**7:30 AM**
Volume	**0**	**1**	**417**	**2**	**14**	**3**	**426**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	45	0	0	0	45
12:15 PM	0	1	56	0	1	0	58
12:30 PM	0	0	67	0	0	0	67
12:45 PM	0	0	53	0	0	0	53
1:00 PM	0	0	50	1	0	0	51
1:15 PM	0	0	44	0	2	1	47
1:30 PM	0	0	56	0	0	0	56
1:45 PM	0	0	43	1	4	0	48
2:00 PM	0	0	69	0	1	1	71
2:15 PM	0	0	66	0	0	0	66
2:30 PM	0	0	68	0	0	0	68
2:45 PM	0	0	64	1	0	0	65
3:00 PM	0	0	61	0	0	0	61
3:15 PM	0	0	59	1	1	0	61
3:30 PM	0	0	58	0	0	0	58
3:45 PM	0	0	59	0	0	0	59
4:00 PM	0	0	53	0	1	0	54
4:15 PM	0	0	64	0	1	0	65
4:30 PM	0	0	57	0	0	0	57
4:45 PM	0	0	79	0	0	0	79
5:00 PM	0	0	72	1	0	0	73
5:15 PM	1	0	81	0	1	0	83
5:30 PM	0	0	77	0	0	0	77
5:45 PM	0	0	68	0	0	0	68
6:00 PM	0	0	61	1	0	0	62
6:15 PM	0	0	60	0	1	0	61
6:30 PM	0	0	41	0	0	0	41
6:45 PM	0	0	42	0	0	0	42
7:00 PM	0	0	41	0	0	0	41
7:15 PM	0	0	37	0	0	0	37
7:30 PM	0	0	29	0	0	0	29
7:45 PM	0	0	35	0	0	0	35
8:00 PM	0	0	26	0	0	0	26
8:15 PM	0	0	23	0	0	0	23
8:30 PM	0	0	24	0	1	0	25
8:45 PM	0	0	18	0	0	0	18
9:00 PM	0	0	27	0	0	0	27
9:15 PM	0	0	33	0	0	0	33
9:30 PM	0	0	25	0	0	0	25
9:45 PM	0	0	13	0	0	1	14
10:00 PM	0	0	8	0	0	0	8
10:15 PM	0	0	13	0	0	0	13
10:30 PM	0	0	9	0	0	0	9
10:45 PM	0	0	12	0	0	0	12
11:00 PM	0	0	9	0	0	0	9
11:15 PM	0	0	4	0	0	0	4
11:30 PM	0	0	5	0	0	0	5
11:45 PM	0	0	3	0	0	0	3
PM Total	**1**	**1**	**2067**	**6**	**14**	**3**	**2092**
Percentage	**0.05%**	**0.05%**	**98.80%**	**0.29%**	**0.67%**	**0.14%**	
PM Peak	**4:30 PM**	**12:00 PM**	**4:45 PM**	**1:00 PM**	**1:15 PM**	**1:15 PM**	**4:45 PM**
Volume	**1**	**1**	**309**	**2**	**7**	**2**	**312**
Day Total	**1**	**2**	**3764**	**10**	**62**	**11**	**3850**
Percentage	**0.03%**	**0.05%**	**97.77%**	**0.26%**	**1.61%**	**0.29%**	

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Friday, January 26, 2024**
Direction: **NB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-A**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	0	0	1
12:15 AM	0	0	2	0	0	0	2
12:30 AM	0	0	2	0	0	0	2
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	1	0	1	0	2
1:15 AM	0	0	3	0	0	0	3
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	0	0	0	1	1
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	2	0	0	0	2
3:45 AM	0	0	3	0	0	0	3
4:00 AM	0	0	2	0	0	0	2
4:15 AM	0	0	1	0	1	0	2
4:30 AM	0	0	3	0	0	0	3
4:45 AM	0	0	6	0	1	0	7
5:00 AM	0	0	8	0	0	0	8
5:15 AM	0	0	11	0	0	0	11
5:30 AM	0	0	23	0	1	0	24
5:45 AM	0	0	31	0	1	0	32
6:00 AM	0	0	21	0	3	0	24
6:15 AM	0	0	35	0	3	1	39
6:30 AM	0	0	46	0	2	0	48
6:45 AM	0	0	51	0	3	0	54
7:00 AM	0	0	40	0	3	0	43
7:15 AM	0	0	45	0	2	0	47
7:30 AM	0	0	111	0	1	0	112
7:45 AM	0	0	128	1	2	0	131
8:00 AM	0	0	90	1	4	0	95
8:15 AM	0	1	96	0	2	0	99
8:30 AM	0	0	80	0	2	1	83
8:45 AM	0	0	128	0	3	0	131
9:00 AM	0	0	55	0	3	0	58
9:15 AM	0	0	51	0	5	0	56
9:30 AM	0	0	64	0	8	0	72
9:45 AM	0	0	63	0	2	1	66
10:00 AM	0	0	56	0	0	0	56
10:15 AM	0	0	52	0	3	1	56
10:30 AM	0	0	58	0	4	0	62
10:45 AM	0	0	53	0	1	0	54
11:00 AM	0	0	48	0	4	0	52
11:15 AM	0	0	51	0	1	0	52
11:30 AM	0	0	59	0	0	0	59
11:45 AM	0	0	66	2	1	0	69
AM Total	**0**	**1**	**1649**	**4**	**67**	**5**	**1726**
Percentage	**0.00%**	**0.06%**	**95.54%**	**0.23%**	**3.88%**	**0.29%**	
AM Peak	**12:00 AM**	**7:30 AM**	**7:30 AM**	**7:15 AM**	**8:45 AM**	**9:30 AM**	**7:30 AM**
Volume	**0**	**1**	**425**	**2**	**19**	**2**	**437**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	65	0	0	0	65
12:15 PM	0	0	68	0	0	0	68
12:30 PM	0	0	53	0	2	0	55
12:45 PM	0	0	54	0	1	0	55
1:00 PM	0	0	53	0	3	0	56
1:15 PM	0	0	69	0	2	0	71
1:30 PM	0	0	53	1	1	0	55
1:45 PM	0	0	69	0	6	0	75
2:00 PM	0	0	46	1	0	0	47
2:15 PM	0	0	57	0	0	0	57
2:30 PM	0	0	78	0	0	0	78
2:45 PM	0	0	69	0	0	0	69
3:00 PM	0	0	60	0	0	0	60
3:15 PM	0	0	67	0	1	0	68
3:30 PM	0	0	72	0	0	0	72
3:45 PM	0	0	67	0	1	0	68
4:00 PM	0	0	47	0	0	1	48
4:15 PM	0	0	52	0	0	0	52
4:30 PM	0	0	66	0	0	1	67
4:45 PM	1	0	67	0	0	0	68
5:00 PM	0	0	57	0	0	0	57
5:15 PM	0	0	61	0	0	0	61
5:30 PM	0	0	79	0	0	0	79
5:45 PM	0	0	64	1	0	0	65
6:00 PM	0	0	60	0	1	0	61
6:15 PM	0	0	45	0	0	0	45
6:30 PM	0	0	60	0	0	0	60
6:45 PM	0	0	62	0	0	0	62
7:00 PM	0	0	43	0	0	0	43
7:15 PM	0	0	32	0	0	0	32
7:30 PM	0	0	33	0	0	0	33
7:45 PM	0	0	40	0	0	0	40
8:00 PM	0	0	33	0	0	0	33
8:15 PM	0	0	26	0	1	0	27
8:30 PM	0	0	22	0	0	0	22
8:45 PM	0	0	18	0	0	0	18
9:00 PM	0	0	18	0	0	0	18
9:15 PM	0	0	15	1	0	0	16
9:30 PM	0	0	17	0	0	0	17
9:45 PM	0	0	17	0	0	0	17
10:00 PM	0	0	15	0	0	0	15
10:15 PM	0	0	10	0	0	0	10
10:30 PM	0	0	13	0	0	0	13
10:45 PM	0	0	14	0	0	0	14
11:00 PM	0	0	11	0	0	0	11
11:15 PM	0	0	5	0	0	0	5
11:30 PM	0	0	9	0	0	0	9
11:45 PM	0	0	7	0	0	0	7
PM Total	**1**	**0**	**2118**	**4**	**19**	**2**	**2144**
Percentage	**0.05%**	**0.00%**	**98.79%**	**0.19%**	**0.89%**	**0.09%**	
PM Peak	**4:00 PM**	**12:00 PM**	**2:30 PM**	**1:15 PM**	**1:00 PM**	**3:45 PM**	**2:30 PM**
Volume	**1**	**0**	**274**	**2**	**12**	**2**	**275**

Day Total	**1**	**1**	**3767**	**8**	**86**	**7**	**3870**
Percentage	**0.03%**	**0.03%**	**97.34%**	**0.21%**	**2.22%**	**0.18%**	

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Saturday, January 27, 2024**
Direction: **NB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-A**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	2	0	0	0	2
12:15 AM	0	0	4	0	0	0	4
12:30 AM	0	0	4	0	0	0	4
12:45 AM	0	0	2	0	0	0	2
1:00 AM	0	0	1	0	0	0	1
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	3	0	0	0	3
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	1	0	0	0	1
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	1	0	0	0	1
3:15 AM	0	0	2	0	1	0	3
3:30 AM	0	0	2	0	0	0	2
3:45 AM	0	0	2	0	0	0	2
4:00 AM	0	0	2	1	0	0	3
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	1	0	0	0	1
4:45 AM	0	0	5	0	0	0	5
5:00 AM	0	0	5	0	0	0	5
5:15 AM	0	0	4	0	0	0	4
5:30 AM	0	0	8	0	0	1	9
5:45 AM	0	0	16	0	0	0	16
6:00 AM	0	0	14	1	0	0	15
6:15 AM	0	0	16	0	0	0	16
6:30 AM	0	0	21	0	0	0	21
6:45 AM	0	0	21	0	2	0	23
7:00 AM	0	0	22	0	1	1	24
7:15 AM	0	0	31	0	0	0	31
7:30 AM	0	0	44	0	1	0	45
7:45 AM	0	0	51	0	0	0	51
8:00 AM	0	0	46	0	2	0	48
8:15 AM	0	0	51	1	0	1	53
8:30 AM	0	0	41	0	0	0	41
8:45 AM	0	0	50	0	3	2	55
9:00 AM	0	0	44	0	1	0	45
9:15 AM	0	0	56	0	0	0	56
9:30 AM	0	0	56	0	1	0	57
9:45 AM	0	0	53	0	0	0	53
10:00 AM	0	0	53	0	3	1	57
10:15 AM	0	0	63	0	1	0	64
10:30 AM	0	0	53	0	1	0	54
10:45 AM	0	0	47	1	0	0	48
11:00 AM	0	0	63	0	0	0	63
11:15 AM	0	0	61	0	0	0	61
11:30 AM	0	0	75	0	0	0	75
11:45 AM	0	0	80	0	0	0	80
AM Total	**0**	**0**	**1180**	**4**	**17**	**6**	**1207**
Percentage	**0.00%**	**0.00%**	**97.76%**	**0.33%**	**1.41%**	**0.50%**	
AM Peak	**12:00 AM**	**12:00 AM**	**11:00 AM**	**3:15 AM**	**8:00 AM**	**8:00 AM**	**11:00 AM**
Volume	**0**	**0**	**279**	**1**	**5**	**3**	**279**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	66	1	0	0	67
12:15 PM	0	0	58	0	2	0	60
12:30 PM	0	0	70	0	3	0	73
12:45 PM	0	0	65	0	1	0	66
1:00 PM	0	0	76	0	0	0	76
1:15 PM	0	0	70	0	1	0	71
1:30 PM	0	0	68	1	0	0	69
1:45 PM	0	0	71	0	0	0	71
2:00 PM	0	0	66	0	0	0	66
2:15 PM	0	0	57	0	1	0	58
2:30 PM	0	0	61	0	0	0	61
2:45 PM	0	0	58	0	0	0	58
3:00 PM	0	0	64	0	0	0	64
3:15 PM	0	0	60	0	0	0	60
3:30 PM	0	0	65	0	0	0	65
3:45 PM	0	0	58	0	0	0	58
4:00 PM	0	0	68	0	0	0	68
4:15 PM	0	0	63	0	0	0	63
4:30 PM	0	0	61	0	0	0	61
4:45 PM	0	0	50	0	1	0	51
5:00 PM	0	0	60	0	2	0	62
5:15 PM	0	0	47	0	0	0	47
5:30 PM	0	0	45	0	0	0	45
5:45 PM	0	0	56	0	0	0	56
6:00 PM	0	0	65	0	0	0	65
6:15 PM	0	0	44	0	0	0	44
6:30 PM	0	0	55	0	0	0	55
6:45 PM	0	0	42	0	0	0	42
7:00 PM	0	0	23	0	0	0	23
7:15 PM	0	0	35	1	1	0	37
7:30 PM	0	0	29	0	0	0	29
7:45 PM	0	0	28	0	0	0	28
8:00 PM	0	0	21	0	0	0	21
8:15 PM	0	0	21	0	0	0	21
8:30 PM	0	0	25	0	0	0	25
8:45 PM	0	0	19	0	0	0	19
9:00 PM	0	0	22	0	0	0	22
9:15 PM	0	0	18	0	0	0	18
9:30 PM	0	0	13	0	0	0	13
9:45 PM	0	0	18	0	0	0	18
10:00 PM	0	0	15	0	0	0	15
10:15 PM	0	0	15	1	0	0	16
10:30 PM	0	0	12	0	0	0	12
10:45 PM	0	0	13	0	0	0	13
11:00 PM	0	0	8	0	0	0	8
11:15 PM	0	0	9	0	0	1	10
11:30 PM	0	0	7	0	0	0	7
11:45 PM	0	0	9	0	0	0	9
PM Total	**0**	**0**	**2049**	**4**	**12**	**1**	**2066**
Percentage	**0.00%**	**0.00%**	**99.18%**	**0.19%**	**0.58%**	**0.05%**	
PM Peak	**12:00 PM**	**12:00 PM**	**1:00 PM**	**12:00 PM**	**12:00 PM**	**10:30 PM**	**1:00 PM**
Volume	**0**	**0**	**285**	**1**	**6**	**1**	**287**

Day Total	**0**	**0**	**3229**	**8**	**29**	**7**	**3273**
Percentage	**0.00%**	**0.00%**	**98.66%**	**0.24%**	**0.89%**	**0.21%**	

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Sunday, January 28, 2024**
Direction: **NB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-A**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	4	0	0	0	4
12:15 AM	0	0	5	0	1	0	6
12:30 AM	0	0	5	0	0	0	5
12:45 AM	0	0	3	0	0	0	3
1:00 AM	0	0	3	0	0	0	3
1:15 AM	0	0	0	0	0	0	0
1:30 AM	0	0	2	0	0	0	2
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	4	0	0	0	4
2:15 AM	0	0	3	0	0	0	3
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	2	0	0	0	2
3:30 AM	0	0	1	0	0	0	1
3:45 AM	0	0	2	0	0	1	3
4:00 AM	0	0	1	0	0	0	1
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	2	0	0	0	2
4:45 AM	0	0	2	0	0	0	2
5:00 AM	0	0	3	0	0	0	3
5:15 AM	0	0	3	0	0	0	3
5:30 AM	0	0	5	0	0	0	5
5:45 AM	0	0	5	1	0	0	6
6:00 AM	0	0	8	0	0	0	8
6:15 AM	0	0	11	0	0	0	11
6:30 AM	0	0	13	0	0	0	13
6:45 AM	0	0	16	0	0	0	16
7:00 AM	0	0	10	0	0	0	10
7:15 AM	0	0	15	0	0	0	15
7:30 AM	0	0	15	0	0	0	15
7:45 AM	0	0	23	0	0	0	23
8:00 AM	0	0	26	0	0	0	26
8:15 AM	0	0	18	0	0	0	18
8:30 AM	0	0	24	0	0	0	24
8:45 AM	1	1	28	0	1	0	31
9:00 AM	0	0	40	0	0	0	40
9:15 AM	1	0	48	0	0	0	49
9:30 AM	1	0	43	0	0	0	44
9:45 AM	0	0	38	0	0	0	38
10:00 AM	1	0	54	0	0	0	55
10:15 AM	0	0	32	0	0	0	32
10:30 AM	0	0	55	0	0	0	55
10:45 AM	0	0	38	0	0	0	38
11:00 AM	0	0	66	0	0	0	66
11:15 AM	0	0	47	0	0	0	47
11:30 AM	0	0	51	0	1	0	52
11:45 AM	0	0	52	0	0	0	52
AM Total	**4**	**1**	**828**	**1**	**3**	**1**	**838**
Percentage	**0.48%**	**0.12%**	**98.81%**	**0.12%**	**0.36%**	**0.12%**	
AM Peak	**8:45 AM**	**8:00 AM**	**11:00 AM**	**5:00 AM**	**12:00 AM**	**3:00 AM**	**11:00 AM**
Volume	**3**	**1**	**216**	**1**	**1**	**1**	**217**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	41	0	0	0	41
12:15 PM	0	0	45	0	1	0	46
12:30 PM	0	0	41	0	0	0	41
12:45 PM	0	0	53	1	0	0	54
1:00 PM	0	0	49	0	1	0	50
1:15 PM	0	0	41	0	0	0	41
1:30 PM	0	0	45	0	1	0	46
1:45 PM	0	0	46	0	1	0	47
2:00 PM	0	0	46	0	0	0	46
2:15 PM	0	0	57	0	0	0	57
2:30 PM	0	0	60	0	0	0	60
2:45 PM	0	0	46	0	0	0	46
3:00 PM	0	0	46	1	1	0	48
3:15 PM	0	0	52	0	0	0	52
3:30 PM	0	0	47	0	0	0	47
3:45 PM	0	0	49	0	0	0	49
4:00 PM	0	0	40	0	0	0	40
4:15 PM	0	0	32	1	0	0	33
4:30 PM	0	0	31	0	0	0	31
4:45 PM	0	0	50	0	0	0	50
5:00 PM	0	0	28	0	0	0	28
5:15 PM	0	0	28	0	0	0	28
5:30 PM	0	0	35	0	0	0	35
5:45 PM	0	0	23	0	1	0	24
6:00 PM	0	0	35	0	0	0	35
6:15 PM	0	0	30	0	0	0	30
6:30 PM	0	0	21	0	0	0	21
6:45 PM	0	0	30	0	0	0	30
7:00 PM	0	0	28	0	0	0	28
7:15 PM	0	0	21	0	0	0	21
7:30 PM	0	0	11	0	0	0	11
7:45 PM	0	0	21	0	0	0	21
8:00 PM	0	0	11	0	0	0	11
8:15 PM	0	0	17	0	0	0	17
8:30 PM	0	0	17	0	0	0	17
8:45 PM	0	0	15	0	0	0	15
9:00 PM	0	0	11	0	0	0	11
9:15 PM	0	0	7	0	0	0	7
9:30 PM	0	0	8	0	0	0	8
9:45 PM	0	0	4	0	0	0	4
10:00 PM	0	0	9	0	0	0	9
10:15 PM	0	0	6	0	2	0	8
10:30 PM	0	0	8	0	0	0	8
10:45 PM	0	0	5	0	2	0	7
11:00 PM	0	0	8	0	0	0	8
11:15 PM	0	0	3	0	0	0	3
11:30 PM	0	0	1	0	0	0	1
11:45 PM	0	0	5	0	0	0	5
PM Total	**0**	**0**	**1363**	**3**	**10**	**0**	**1376**
Percentage	**0.00%**	**0.00%**	**99.06%**	**0.22%**	**0.73%**	**0.00%**	
PM Peak	**12:00 PM**	**12:00 PM**	**1:45 PM**	**12:00 PM**	**10:00 PM**	**12:00 PM**	**2:15 PM**
Volume	**0**	**0**	**209**	**1**	**4**	**0**	**211**
Day Total	**4**	**1**	**2191**	**4**	**13**	**1**	**2214**
Percentage	**0.18%**	**0.05%**	**98.96%**	**0.18%**	**0.59%**	**0.05%**	

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Monday, January 29, 2024**
Direction: **NB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-A**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	0	0	1
12:15 AM	0	0	0	0	0	0	0
12:30 AM	0	0	1	0	0	0	1
12:45 AM	0	0	2	0	1	0	3
1:00 AM	0	0	3	0	0	0	3
1:15 AM	0	0	3	0	0	0	3
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	1	0	1	0	2
2:00 AM	0	0	2	0	0	0	2
2:15 AM	0	0	1	0	1	0	2
2:30 AM	0	0	4	0	1	0	5
2:45 AM	0	0	1	0	1	0	2
3:00 AM	0	0	6	0	0	0	6
3:15 AM	0	0	7	0	0	0	7
3:30 AM	0	0	6	0	0	0	6
3:45 AM	0	0	5	0	0	0	5
4:00 AM	0	0	6	0	0	0	6
4:15 AM	0	0	1	0	0	0	1
4:30 AM	0	0	3	0	0	0	3
4:45 AM	0	0	11	0	0	0	11
5:00 AM	0	0	10	0	2	0	12
5:15 AM	0	0	22	0	2	0	24
5:30 AM	0	0	22	0	1	0	23
5:45 AM	0	0	27	0	4	0	31
6:00 AM	0	0	21	0	3	1	25
6:15 AM	0	0	49	0	2	1	52
6:30 AM	0	0	44	0	3	0	47
6:45 AM	0	0	57	0	1	1	59
7:00 AM	0	0	44	0	2	1	47
7:15 AM	0	0	63	0	1	0	64
7:30 AM	0	0	104	0	3	0	107
7:45 AM	0	0	135	1	4	1	141
8:00 AM	0	0	89	1	6	1	97
8:15 AM	0	1	89	0	3	0	93
8:30 AM	0	0	86	0	6	0	92
8:45 AM	0	0	45	0	2	0	47
9:00 AM	0	0	81	0	3	0	84
9:15 AM	0	0	72	0	3	1	76
9:30 AM	0	0	63	0	2	0	65
9:45 AM	0	0	60	0	1	0	61
10:00 AM	0	0	50	0	5	0	55
10:15 AM	0	0	34	0	2	0	36
10:30 AM	0	0	50	0	3	0	53
10:45 AM	0	0	44	0	0	0	44
11:00 AM	0	0	37	0	5	0	42
11:15 AM	0	0	41	0	1	0	42
11:30 AM	0	0	31	0	3	0	34
11:45 AM	0	0	52	1	0	0	53
AM Total	**0**	**1**	**1587**	**3**	**78**	**7**	**1676**
Percentage	**0.00%**	**0.06%**	**94.69%**	**0.18%**	**4.65%**	**0.42%**	
AM Peak	**12:00 AM**	**7:30 AM**	**7:30 AM**	**7:15 AM**	**7:45 AM**	**6:00 AM**	**7:30 AM**
Volume	**0**	**1**	**417**	**2**	**19**	**3**	**438**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	62	1	1	0	64
12:15 PM	0	0	59	0	1	0	60
12:30 PM	0	0	42	0	3	0	45
12:45 PM	0	0	61	0	2	0	63
1:00 PM	0	0	53	0	1	1	55
1:15 PM	0	0	43	0	2	0	45
1:30 PM	0	0	36	0	3	0	39
1:45 PM	0	0	39	0	1	0	40
2:00 PM	0	0	54	0	0	0	54
2:15 PM	0	0	74	0	0	0	74
2:30 PM	0	0	76	1	2	0	79
2:45 PM	0	0	56	1	1	0	58
3:00 PM	0	0	65	0	1	1	67
3:15 PM	0	0	68	0	0	0	68
3:30 PM	0	0	55	0	0	0	55
3:45 PM	0	0	56	0	0	0	56
4:00 PM	0	0	45	0	0	0	45
4:15 PM	0	0	53	0	1	0	54
4:30 PM	0	0	53	1	0	0	54
4:45 PM	0	0	49	1	0	0	50
5:00 PM	0	0	60	0	0	0	60
5:15 PM	1	0	67	0	0	0	68
5:30 PM	0	0	50	0	0	0	50
5:45 PM	0	0	74	1	0	0	75
6:00 PM	0	0	46	0	0	0	46
6:15 PM	0	0	42	0	0	0	42
6:30 PM	0	0	38	0	1	0	39
6:45 PM	0	0	40	0	0	0	40
7:00 PM	0	0	53	0	0	0	53
7:15 PM	0	0	30	0	0	0	30
7:30 PM	0	0	33	0	1	0	34
7:45 PM	0	0	31	0	0	0	31
8:00 PM	0	0	21	0	0	0	21
8:15 PM	0	0	12	0	0	0	12
8:30 PM	0	0	16	0	0	0	16
8:45 PM	0	0	21	0	0	0	21
9:00 PM	0	0	19	0	0	0	19
9:15 PM	0	0	8	0	0	0	8
9:30 PM	0	0	11	0	0	0	11
9:45 PM	0	0	11	0	0	0	11
10:00 PM	0	0	6	0	0	0	6
10:15 PM	0	0	8	0	0	0	8
10:30 PM	0	0	10	0	0	0	10
10:45 PM	0	0	6	0	0	0	6
11:00 PM	0	0	5	0	0	0	5
11:15 PM	0	0	5	0	0	0	5
11:30 PM	0	0	5	0	0	0	5
11:45 PM	0	0	2	0	0	0	2
PM Total	**1**	**0**	**1829**	**6**	**21**	**2**	**1859**
Percentage	**0.05%**	**0.00%**	**98.39%**	**0.32%**	**1.13%**	**0.11%**	
PM Peak	**4:30 PM**	**12:00 PM**	**2:15 PM**	**2:00 PM**	**12:30 PM**	**12:15 PM**	**2:15 PM**
Volume	**1**	**0**	**271**	**2**	**8**	**1**	**278**
Day Total	**1**	**1**	**3416**	**9**	**99**	**9**	**3535**
Percentage	**0.03%**	**0.03%**	**96.63%**	**0.25%**	**2.80%**	**0.25%**	

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Tuesday, January 23, 2024**
Direction: **SB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-A**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	0	0	0	0	0
12:15 AM	0	0	2	0	0	0	2
12:30 AM	0	0	3	0	0	0	3
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	2	0	0	0	2
1:15 AM	0	0	0	0	1	0	1
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	2	0	0	0	2
2:00 AM	0	0	1	0	0	0	1
2:15 AM	0	0	1	0	0	0	1
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	2	0	0	0	2
3:45 AM	0	0	1	0	0	0	1
4:00 AM	0	0	0	0	2	0	2
4:15 AM	0	0	1	0	0	0	1
4:30 AM	0	0	3	0	0	0	3
4:45 AM	0	0	3	0	0	0	3
5:00 AM	0	0	3	0	0	0	3
5:15 AM	0	0	1	0	1	0	2
5:30 AM	0	0	9	0	0	0	9
5:45 AM	0	0	9	0	1	0	10
6:00 AM	0	0	7	0	0	0	7
6:15 AM	0	0	17	0	1	0	18
6:30 AM	0	0	23	1	0	0	24
6:45 AM	0	0	28	1	1	0	30
7:00 AM	0	0	48	0	6	1	55
7:15 AM	0	0	81	1	1	0	83
7:30 AM	0	0	107	0	1	0	108
7:45 AM	0	0	82	2	5	0	89
8:00 AM	0	0	75	0	3	0	78
8:15 AM	0	0	77	0	1	0	78
8:30 AM	0	0	84	2	1	0	87
8:45 AM	0	0	65	0	4	0	69
9:00 AM	0	0	51	0	1	0	52
9:15 AM	0	0	51	0	3	1	55
9:30 AM	0	0	55	0	2	1	58
9:45 AM	0	0	53	0	2	0	55
10:00 AM	0	0	60	0	1	0	61
10:15 AM	0	0	55	0	2	0	57
10:30 AM	0	0	46	0	1	0	47
10:45 AM	0	0	48	0	3	0	51
11:00 AM	0	0	50	0	3	0	53
11:15 AM	0	0	56	0	0	1	57
11:30 AM	0	0	55	0	3	0	58
11:45 AM	0	0	63	0	5	0	68
AM Total	**0**	**0**	**1381**	**7**	**55**	**4**	**1447**
Percentage	**0.00%**	**0.00%**	**95.44%**	**0.48%**	**3.80%**	**0.28%**	
AM Peak	**12:00 AM**	**12:00 AM**	**7:15 AM**	**7:45 AM**	**7:00 AM**	**8:45 AM**	**7:15 AM**
Volume	**0**	**0**	**345**	**4**	**13**	**2**	**358**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	66	0	3	0	69
12:15 PM	0	0	54	1	3	0	58
12:30 PM	0	0	46	0	2	0	48
12:45 PM	0	0	55	0	1	0	56
1:00 PM	0	0	55	0	2	0	57
1:15 PM	0	0	46	0	2	1	49
1:30 PM	0	0	75	0	2	0	77
1:45 PM	0	0	60	0	3	0	63
2:00 PM	0	0	97	0	2	0	99
2:15 PM	0	0	99	0	1	1	101
2:30 PM	0	0	97	0	3	1	101
2:45 PM	0	0	123	0	7	0	130
3:00 PM	0	0	99	0	2	0	101
3:15 PM	0	0	94	1	1	1	97
3:30 PM	0	0	110	1	1	0	112
3:45 PM	0	0	84	0	1	0	85
4:00 PM	0	0	96	0	1	0	97
4:15 PM	0	0	102	2	1	0	105
4:30 PM	0	0	109	1	1	0	111
4:45 PM	0	0	93	0	0	0	93
5:00 PM	0	0	105	3	1	0	109
5:15 PM	0	0	105	0	0	0	105
5:30 PM	0	0	102	0	0	0	102
5:45 PM	0	0	74	2	0	0	76
6:00 PM	0	0	70	0	1	0	71
6:15 PM	0	0	67	0	0	0	67
6:30 PM	0	0	73	1	0	0	74
6:45 PM	0	0	65	0	1	0	66
7:00 PM	0	0	56	0	0	0	56
7:15 PM	0	0	65	0	0	0	65
7:30 PM	0	0	46	0	1	0	47
7:45 PM	0	0	32	0	0	0	32
8:00 PM	0	0	41	0	0	0	41
8:15 PM	0	0	42	0	1	0	43
8:30 PM	0	0	37	0	0	0	37
8:45 PM	0	0	23	0	0	0	23
9:00 PM	0	0	35	0	0	0	35
9:15 PM	0	0	21	0	0	0	21
9:30 PM	0	0	26	0	0	0	26
9:45 PM	0	0	14	1	0	0	15
10:00 PM	0	0	13	0	0	0	13
10:15 PM	0	0	8	0	0	0	8
10:30 PM	0	0	6	0	0	0	6
10:45 PM	0	0	10	0	0	0	10
11:00 PM	0	0	16	0	1	0	17
11:15 PM	0	0	19	0	0	0	19
11:30 PM	0	0	4	0	0	0	4
11:45 PM	0	0	5	0	0	0	5
PM Total	**0**	**0**	**2840**	**13**	**45**	**4**	**2902**
Percentage	**0.00%**	**0.00%**	**97.86%**	**0.45%**	**1.55%**	**0.14%**	
PM Peak	**12:00 PM**	**12:00 PM**	**2:45 PM**	**4:15 PM**	**2:00 PM**	**1:45 PM**	**2:45 PM**
Volume	**0**	**0**	**426**	**6**	**13**	**2**	**440**
Day Total	**0**	**0**	**4221**	**20**	**100**	**8**	**4349**
Percentage	**0.00%**	**0.00%**	**97.06%**	**0.46%**	**2.30%**	**0.18%**	

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Wednesday, January 24, 2024**
Direction: **SB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-A**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	4	0	0	0	4
12:15 AM	0	0	3	0	0	0	3
12:30 AM	0	0	3	0	0	0	3
12:45 AM	0	0	2	0	1	0	3
1:00 AM	0	0	7	0	0	0	7
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	3	0	1	0	4
1:45 AM	0	0	4	0	1	0	5
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	1	0	1	0	2
2:30 AM	0	0	2	0	0	0	2
2:45 AM	0	0	5	0	0	0	5
3:00 AM	0	0	3	0	1	0	4
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	4	0	1	1	6
3:45 AM	0	0	4	0	0	0	4
4:00 AM	0	0	0	0	1	0	1
4:15 AM	0	0	3	0	0	0	3
4:30 AM	0	0	6	0	0	0	6
4:45 AM	0	0	2	0	0	0	2
5:00 AM	0	0	5	0	2	0	7
5:15 AM	0	0	3	0	0	0	3
5:30 AM	0	0	7	0	1	0	8
5:45 AM	0	0	9	0	0	0	9
6:00 AM	0	0	14	0	0	1	15
6:15 AM	0	0	14	0	0	0	14
6:30 AM	0	0	19	1	0	0	20
6:45 AM	0	0	27	1	5	1	34
7:00 AM	0	0	33	0	0	0	33
7:15 AM	0	0	65	0	2	0	67
7:30 AM	0	0	103	0	2	0	105
7:45 AM	0	0	67	1	2	0	70
8:00 AM	0	0	87	0	1	2	90
8:15 AM	0	0	63	0	1	1	65
8:30 AM	0	0	62	2	0	0	64
8:45 AM	0	0	67	0	2	0	69
9:00 AM	0	0	56	0	2	0	58
9:15 AM	0	0	47	1	0	0	48
9:30 AM	0	0	46	0	2	0	48
9:45 AM	0	0	56	0	2	0	58
10:00 AM	0	0	41	0	3	1	45
10:15 AM	0	0	45	0	4	0	49
10:30 AM	0	0	34	0	4	0	38
10:45 AM	0	0	45	0	2	0	47
11:00 AM	0	0	45	0	2	0	47
11:15 AM	0	0	57	0	4	0	61
11:30 AM	0	0	69	0	3	0	72
11:45 AM	0	0	68	0	3	0	71
AM Total	**0**	**0**	**1312**	**6**	**56**	**7**	**1381**
Percentage	**0.00%**	**0.00%**	**95.00%**	**0.43%**	**4.06%**	**0.51%**	
AM Peak	**12:00 AM**	**12:00 AM**	**7:15 AM**	**7:45 AM**	**9:45 AM**	**7:30 AM**	**7:15 AM**
Volume	**0**	**0**	**322**	**3**	**13**	**3**	**332**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	48	0	2	0	50
12:15 PM	0	0	70	0	1	1	72
12:30 PM	0	0	57	1	0	0	58
12:45 PM	0	0	54	1	1	0	56
1:00 PM	0	0	47	1	2	0	50
1:15 PM	0	0	49	0	2	2	53
1:30 PM	0	0	57	0	4	0	61
1:45 PM	0	0	80	0	2	0	82
2:00 PM	0	0	71	0	2	0	73
2:15 PM	0	0	76	0	2	1	79
2:30 PM	0	0	89	1	2	0	92
2:45 PM	0	0	122	0	1	0	123
3:00 PM	0	0	96	0	4	0	100
3:15 PM	0	0	109	0	1	0	110
3:30 PM	0	0	91	0	1	0	92
3:45 PM	0	0	89	0	1	0	90
4:00 PM	0	0	99	0	1	0	100
4:15 PM	0	0	116	0	2	0	118
4:30 PM	0	0	102	1	0	0	103
4:45 PM	0	0	99	0	1	0	100
5:00 PM	0	0	106	0	1	0	107
5:15 PM	0	0	111	0	2	0	113
5:30 PM	0	0	98	0	1	0	99
5:45 PM	0	0	103	0	0	0	103
6:00 PM	0	0	78	0	1	0	79
6:15 PM	0	0	67	0	0	0	67
6:30 PM	0	0	75	1	0	0	76
6:45 PM	0	0	54	0	1	0	55
7:00 PM	0	0	52	0	0	0	52
7:15 PM	0	0	46	0	0	0	46
7:30 PM	0	0	47	0	0	0	47
7:45 PM	0	0	35	0	0	0	35
8:00 PM	0	0	43	0	0	0	43
8:15 PM	0	0	43	0	0	0	43
8:30 PM	0	0	34	0	0	0	34
8:45 PM	0	0	36	1	0	0	37
9:00 PM	0	0	39	0	1	0	40
9:15 PM	0	0	15	0	0	0	15
9:30 PM	0	0	22	0	0	0	22
9:45 PM	0	0	25	1	0	0	26
10:00 PM	0	0	22	0	0	0	22
10:15 PM	0	0	11	0	0	0	11
10:30 PM	0	0	12	0	0	0	12
10:45 PM	0	0	12	1	0	0	13
11:00 PM	0	0	13	0	0	0	13
11:15 PM	0	0	20	1	0	0	21
11:30 PM	0	0	5	0	0	0	5
11:45 PM	0	0	8	0	0	0	8
PM Total	**0**	**0**	**2853**	**10**	**39**	**4**	**2906**
Percentage	**0.00%**	**0.00%**	**98.18%**	**0.34%**	**1.34%**	**0.14%**	
PM Peak	**12:00 PM**	**12:00 PM**	**4:15 PM**	**12:15 PM**	**1:00 PM**	**12:30 PM**	**4:15 PM**
Volume	**0**	**0**	**423**	**3**	**10**	**2**	**428**
Day Total	**0**	**0**	**4165**	**16**	**95**	**11**	**4287**
Percentage	**0.00%**	**0.00%**	**97.15%**	**0.37%**	**2.22%**	**0.26%**	

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Thursday, January 25, 2024**
Direction: **SB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-A**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	2	0	0	0	2
12:15 AM	0	0	4	0	0	0	4
12:30 AM	0	0	5	0	0	0	5
12:45 AM	0	0	5	0	0	0	5
1:00 AM	0	0	2	0	0	0	2
1:15 AM	0	0	0	0	0	0	0
1:30 AM	0	0	1	0	1	0	2
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	1	0	0	0	1
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	1	1
3:00 AM	0	0	2	0	0	0	2
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	2	0	0	0	2
3:45 AM	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	2	0	2
4:15 AM	0	0	2	0	0	0	2
4:30 AM	0	0	2	0	0	0	2
4:45 AM	0	0	3	0	0	0	3
5:00 AM	0	0	2	0	0	0	2
5:15 AM	0	0	3	0	1	0	4
5:30 AM	0	0	4	0	0	0	4
5:45 AM	0	0	7	0	0	0	7
6:00 AM	0	0	7	0	1	0	8
6:15 AM	0	0	16	0	0	0	16
6:30 AM	0	0	24	1	0	0	25
6:45 AM	0	0	29	1	1	1	32
7:00 AM	0	0	31	0	1	0	32
7:15 AM	0	0	52	0	1	0	53
7:30 AM	0	0	107	0	0	0	107
7:45 AM	0	0	64	0	1	0	65
8:00 AM	0	0	81	1	2	0	84
8:15 AM	0	0	70	1	2	1	74
8:30 AM	0	0	75	2	0	0	77
8:45 AM	0	0	74	0	2	0	76
9:00 AM	0	0	52	0	4	0	56
9:15 AM	0	0	58	0	0	0	58
9:30 AM	0	0	47	0	5	0	52
9:45 AM	0	0	48	0	0	0	48
10:00 AM	0	0	60	0	1	0	61
10:15 AM	0	0	50	0	1	0	51
10:30 AM	0	0	57	0	2	0	59
10:45 AM	0	0	52	0	3	1	56
11:00 AM	0	0	52	1	5	1	59
11:15 AM	0	0	52	0	1	0	53
11:30 AM	0	0	66	0	1	0	67
11:45 AM	0	0	54	0	1	1	56
AM Total	**0**	**0**	**1327**	**7**	**39**	**6**	**1379**
Percentage	**0.00%**	**0.00%**	**96.23%**	**0.51%**	**2.83%**	**0.44%**	
AM Peak	**12:00 AM**	**12:00 AM**	**7:30 AM**	**7:45 AM**	**8:45 AM**	**10:15 AM**	**7:30 AM**
Volume	**0**	**0**	**322**	**4**	**11**	**2**	**330**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	1	69	0	1	0	71
12:15 PM	0	0	65	0	3	0	68
12:30 PM	0	0	53	0	1	0	54
12:45 PM	0	0	53	0	3	0	56
1:00 PM	0	0	56	0	2	0	58
1:15 PM	0	0	66	0	0	0	66
1:30 PM	0	0	64	0	3	0	67
1:45 PM	0	0	75	0	3	1	79
2:00 PM	0	0	53	0	0	0	53
2:15 PM	0	0	59	0	1	0	60
2:30 PM	0	0	90	0	2	0	92
2:45 PM	0	0	82	0	3	0	85
3:00 PM	0	0	99	0	2	0	101
3:15 PM	0	0	100	2	1	1	104
3:30 PM	0	0	87	1	0	0	88
3:45 PM	0	0	78	0	3	0	81
4:00 PM	0	0	98	0	0	0	98
4:15 PM	0	0	80	0	0	0	80
4:30 PM	0	0	112	0	2	0	114
4:45 PM	0	0	81	0	1	2	84
5:00 PM	0	0	117	0	1	0	118
5:15 PM	0	0	97	0	4	0	101
5:30 PM	0	0	108	0	2	0	110
5:45 PM	0	0	95	0	2	0	97
6:00 PM	0	0	82	0	0	0	82
6:15 PM	0	0	77	0	0	0	77
6:30 PM	0	0	69	1	0	0	70
6:45 PM	0	0	64	0	2	0	66
7:00 PM	0	0	75	0	0	0	75
7:15 PM	0	0	57	0	0	0	57
7:30 PM	0	0	53	0	0	0	53
7:45 PM	0	0	44	0	0	0	44
8:00 PM	0	0	52	0	0	0	52
8:15 PM	0	0	46	0	0	0	46
8:30 PM	0	0	38	0	0	0	38
8:45 PM	0	0	41	0	0	0	41
9:00 PM	0	0	42	0	0	0	42
9:15 PM	0	0	37	0	0	0	37
9:30 PM	0	0	17	0	0	0	17
9:45 PM	0	0	18	0	0	0	18
10:00 PM	0	0	23	0	0	0	23
10:15 PM	0	0	22	0	0	0	22
10:30 PM	0	0	14	0	0	0	14
10:45 PM	0	0	9	0	0	0	9
11:00 PM	0	0	21	0	0	0	21
11:15 PM	0	0	21	0	0	0	21
11:30 PM	0	0	14	0	0	0	14
11:45 PM	0	0	2	0	0	0	2
PM Total	**0**	**1**	**2875**	**4**	**42**	**4**	**2926**
Percentage	**0.00%**	**0.03%**	**98.26%**	**0.14%**	**1.44%**	**0.14%**	
PM Peak	**12:00 PM**	**12:00 PM**	**5:00 PM**	**2:45 PM**	**12:15 PM**	**4:00 PM**	**5:00 PM**
Volume	**0**	**1**	**417**	**3**	**9**	**2**	**426**
Day Total	**0**	**1**	**4202**	**11**	**81**	**10**	**4305**
Percentage	**0.00%**	**0.02%**	**97.61%**	**0.26%**	**1.88%**	**0.23%**	

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Friday, January 26, 2024**
Direction: **SB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-A**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	10	0	0	0	10
12:15 AM	0	0	4	0	0	0	4
12:30 AM	0	0	3	0	0	0	3
12:45 AM	0	0	3	0	0	0	3
1:00 AM	0	0	3	0	0	0	3
1:15 AM	0	0	3	0	0	0	3
1:30 AM	0	0	1	0	1	0	2
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	3	0	0	0	3
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	2	0	0	0	2
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	2	0	0	0	2
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	2	0	0	0	2
3:45 AM	0	0	2	0	0	0	2
4:00 AM	0	0	0	0	1	0	1
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	3	0	0	0	3
4:45 AM	0	0	3	0	0	0	3
5:00 AM	0	0	3	0	0	0	3
5:15 AM	0	0	3	0	1	0	4
5:30 AM	0	0	2	0	1	0	3
5:45 AM	0	0	4	0	0	0	4
6:00 AM	0	0	13	0	0	0	13
6:15 AM	0	0	12	0	0	0	12
6:30 AM	0	0	20	1	1	0	22
6:45 AM	0	0	26	1	1	0	28
7:00 AM	0	0	37	0	0	0	37
7:15 AM	0	0	60	0	4	0	64
7:30 AM	0	0	83	0	2	1	86
7:45 AM	0	0	68	1	2	0	71
8:00 AM	0	0	58	0	0	0	58
8:15 AM	0	0	74	0	3	0	77
8:30 AM	0	0	55	1	2	1	59
8:45 AM	0	0	80	1	2	0	83
9:00 AM	0	0	49	0	4	1	54
9:15 AM	0	0	40	0	2	0	42
9:30 AM	0	0	39	0	2	0	41
9:45 AM	0	0	64	0	2	0	66
10:00 AM	0	0	38	1	2	0	41
10:15 AM	0	0	45	0	1	0	46
10:30 AM	0	0	46	0	2	0	48
10:45 AM	0	0	52	1	4	0	57
11:00 AM	0	0	59	0	4	0	63
11:15 AM	0	0	66	0	2	0	68
11:30 AM	0	0	80	1	1	0	82
11:45 AM	0	0	70	0	1	0	71
AM Total	**0**	**0**	**1292**	**8**	**48**	**3**	**1351**
Percentage	**0.00%**	**0.00%**	**95.63%**	**0.59%**	**3.55%**	**0.22%**	
AM Peak	**12:00 AM**	**12:00 AM**	**7:30 AM**	**6:00 AM**	**10:30 AM**	**8:15 AM**	**7:30 AM**
Volume	**0**	**0**	**283**	**2**	**12**	**2**	**292**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	52	0	3	0	55
12:15 PM	0	0	64	0	0	0	64
12:30 PM	0	0	70	0	3	0	73
12:45 PM	0	0	59	0	4	0	63
1:00 PM	0	0	53	0	3	0	56
1:15 PM	0	0	67	0	1	0	68
1:30 PM	0	0	75	0	3	0	78
1:45 PM	0	0	64	0	1	0	65
2:00 PM	0	0	91	0	1	0	92
2:15 PM	0	0	109	0	1	0	110
2:30 PM	0	0	103	0	2	0	105
2:45 PM	0	0	90	0	2	1	93
3:00 PM	0	0	86	1	3	0	90
3:15 PM	0	0	98	1	0	0	99
3:30 PM	0	0	91	1	0	1	93
3:45 PM	0	0	80	0	0	0	80
4:00 PM	0	0	74	0	0	0	74
4:15 PM	0	0	86	0	0	1	87
4:30 PM	0	0	94	1	0	0	95
4:45 PM	0	0	96	0	0	0	96
5:00 PM	0	0	116	0	1	0	117
5:15 PM	0	0	95	0	1	0	96
5:30 PM	0	0	74	0	0	0	74
5:45 PM	0	0	61	0	0	0	61
6:00 PM	0	0	79	1	2	0	82
6:15 PM	0	0	75	0	0	0	75
6:30 PM	0	0	59	0	0	0	59
6:45 PM	0	0	67	0	0	0	67
7:00 PM	0	0	58	1	1	0	60
7:15 PM	0	0	53	0	0	0	53
7:30 PM	0	0	43	0	1	0	44
7:45 PM	0	0	43	1	0	0	44
8:00 PM	0	0	42	0	0	0	42
8:15 PM	0	0	31	0	0	0	31
8:30 PM	0	0	33	0	0	0	33
8:45 PM	0	0	21	0	0	0	21
9:00 PM	0	0	34	0	0	0	34
9:15 PM	0	0	45	0	0	0	45
9:30 PM	0	0	27	0	0	0	27
9:45 PM	0	0	28	0	0	0	28
10:00 PM	0	0	22	0	0	0	22
10:15 PM	0	0	17	0	0	0	17
10:30 PM	0	0	19	0	0	0	19
10:45 PM	0	0	14	0	0	0	14
11:00 PM	0	0	16	0	0	0	16
11:15 PM	0	0	18	0	0	0	18
11:30 PM	0	0	13	0	0	0	13
11:45 PM	0	0	9	0	0	0	9
PM Total	**0**	**0**	**2814**	**7**	**33**	**3**	**2857**
Percentage	**0.00%**	**0.00%**	**98.49%**	**0.25%**	**1.16%**	**0.11%**	
PM Peak	**12:00 PM**	**12:00 PM**	**4:30 PM**	**2:45 PM**	**12:30 PM**	**2:45 PM**	**4:30 PM**
Volume	**0**	**0**	**401**	**3**	**11**	**2**	**404**
Day Total	**0**	**0**	**4106**	**15**	**81**	**6**	**4208**
Percentage	**0.00%**	**0.00%**	**97.58%**	**0.36%**	**1.92%**	**0.14%**	

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Saturday, January 27, 2024**
Direction: **SB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-A**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	10	0	0	0	10
12:15 AM	0	0	6	0	0	0	6
12:30 AM	0	0	4	0	0	0	4
12:45 AM	0	0	2	0	0	0	2
1:00 AM	0	0	4	0	1	0	5
1:15 AM	0	0	3	0	0	0	3
1:30 AM	0	0	2	1	0	0	3
1:45 AM	0	0	5	0	0	0	5
2:00 AM	0	0	5	0	0	0	5
2:15 AM	0	0	1	0	0	0	1
2:30 AM	0	0	6	0	0	0	6
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	5	0	0	0	5
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	1	0	0	0	1
3:45 AM	0	0	3	0	1	0	4
4:00 AM	0	0	0	0	0	0	0
4:15 AM	0	0	1	0	1	0	2
4:30 AM	0	0	1	0	0	0	1
4:45 AM	0	0	0	0	0	0	0
5:00 AM	0	0	1	0	0	0	1
5:15 AM	0	0	4	0	0	0	4
5:30 AM	0	0	3	0	0	0	3
5:45 AM	0	0	3	0	0	0	3
6:00 AM	0	0	5	0	2	0	7
6:15 AM	0	0	11	0	0	0	11
6:30 AM	0	0	4	0	0	0	4
6:45 AM	0	0	7	0	0	0	7
7:00 AM	0	0	13	0	2	0	15
7:15 AM	0	0	22	0	1	0	23
7:30 AM	0	0	33	0	0	0	33
7:45 AM	0	0	29	0	0	1	30
8:00 AM	0	0	37	0	1	0	38
8:15 AM	0	0	29	0	0	0	29
8:30 AM	0	0	37	0	0	0	37
8:45 AM	0	0	49	0	1	0	50
9:00 AM	0	0	39	0	1	0	40
9:15 AM	0	0	53	0	0	0	53
9:30 AM	0	0	61	0	1	0	62
9:45 AM	0	0	71	0	0	0	71
10:00 AM	0	0	52	0	4	0	56
10:15 AM	0	0	58	1	1	1	61
10:30 AM	0	0	52	0	2	0	54
10:45 AM	0	0	61	0	1	0	62
11:00 AM	0	0	74	1	1	0	76
11:15 AM	0	0	70	0	0	0	70
11:30 AM	0	0	61	0	1	0	62
11:45 AM	0	0	84	0	4	0	88
AM Total	**0**	**0**	**1084**	**3**	**26**	**2**	**1115**
Percentage	**0.00%**	**0.00%**	**97.22%**	**0.27%**	**2.33%**	**0.18%**	
AM Peak	**12:00 AM**	**12:00 AM**	**11:00 AM**	**10:15 AM**	**10:00 AM**	**7:00 AM**	**11:00 AM**
Volume	**0**	**0**	**289**	**2**	**8**	**1**	**296**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	71	0	1	0	72
12:15 PM	0	0	67	0	1	0	68
12:30 PM	0	0	66	0	0	0	66
12:45 PM	0	0	70	0	1	0	71
1:00 PM	0	0	69	0	2	0	71
1:15 PM	0	0	57	0	1	0	58
1:30 PM	0	0	69	0	0	0	69
1:45 PM	0	0	90	0	1	0	91
2:00 PM	0	0	84	0	1	0	85
2:15 PM	0	0	66	0	0	0	66
2:30 PM	0	0	86	0	0	0	86
2:45 PM	0	0	77	0	0	0	77
3:00 PM	0	0	89	0	1	1	91
3:15 PM	0	0	80	0	1	0	81
3:30 PM	0	0	69	0	1	0	70
3:45 PM	0	0	83	1	0	0	84
4:00 PM	0	0	56	0	1	0	57
4:15 PM	0	0	76	0	0	0	76
4:30 PM	0	0	59	0	1	0	60
4:45 PM	0	0	60	0	1	0	61
5:00 PM	0	0	58	0	0	0	58
5:15 PM	0	0	46	0	0	0	46
5:30 PM	0	0	50	0	0	0	50
5:45 PM	0	0	50	0	0	0	50
6:00 PM	0	0	42	0	0	0	42
6:15 PM	0	0	69	1	1	0	71
6:30 PM	0	0	47	0	0	0	47
6:45 PM	0	0	47	1	1	0	49
7:00 PM	0	0	38	0	1	0	39
7:15 PM	0	0	29	0	1	0	30
7:30 PM	0	0	28	0	1	0	29
7:45 PM	0	0	26	1	0	0	27
8:00 PM	0	0	29	0	0	0	29
8:15 PM	0	0	41	0	0	0	41
8:30 PM	0	0	27	0	0	0	27
8:45 PM	0	0	23	0	0	0	23
9:00 PM	0	0	35	0	0	0	35
9:15 PM	0	0	25	0	0	0	25
9:30 PM	0	0	25	1	0	0	26
9:45 PM	0	0	22	0	0	0	22
10:00 PM	0	0	32	0	0	0	32
10:15 PM	0	0	17	0	0	0	17
10:30 PM	0	0	15	0	0	0	15
10:45 PM	0	0	17	0	0	0	17
11:00 PM	0	0	17	0	0	0	17
11:15 PM	0	0	17	0	0	0	17
11:30 PM	0	0	10	0	0	0	10
11:45 PM	0	0	15	0	0	0	15
PM Total	**0**	**0**	**2341**	**5**	**19**	**1**	**2366**
Percentage	**0.00%**	**0.00%**	**98.94%**	**0.21%**	**0.80%**	**0.04%**	
PM Peak	**12:00 PM**	**12:00 PM**	**2:30 PM**	**6:00 PM**	**12:15 PM**	**2:15 PM**	**2:30 PM**
Volume	**0**	**0**	**332**	**2**	**4**	**1**	**335**
Day Total	**0**	**0**	**3425**	**8**	**45**	**3**	**3481**
Percentage	**0.00%**	**0.00%**	**98.39%**	**0.23%**	**1.29%**	**0.09%**	

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Sunday, January 28, 2024**
Direction: **SB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-A**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	6	0	0	0	6
12:15 AM	0	0	3	0	0	0	3
12:30 AM	0	0	4	0	0	0	4
12:45 AM	0	0	3	0	0	0	3
1:00 AM	0	0	1	0	0	0	1
1:15 AM	0	0	5	0	0	0	5
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	2	0	0	0	2
2:00 AM	0	0	1	0	0	0	1
2:15 AM	0	0	3	1	0	0	4
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	2	0	0	0	2
3:45 AM	0	0	1	0	0	0	1
4:00 AM	0	0	2	0	1	0	3
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	1	0	0	1	2
4:45 AM	0	0	1	1	0	0	2
5:00 AM	0	0	1	0	0	0	1
5:15 AM	0	0	0	0	0	0	0
5:30 AM	0	0	2	0	0	0	2
5:45 AM	0	0	0	0	0	0	0
6:00 AM	0	0	4	0	0	0	4
6:15 AM	0	0	4	0	0	0	4
6:30 AM	0	0	3	0	0	0	3
6:45 AM	0	0	7	0	0	0	7
7:00 AM	0	0	12	0	1	0	13
7:15 AM	0	0	14	0	0	0	14
7:30 AM	0	0	17	0	0	0	17
7:45 AM	0	0	15	0	1	0	16
8:00 AM	0	0	19	0	0	0	19
8:15 AM	0	0	24	0	0	0	24
8:30 AM	0	0	30	0	0	0	30
8:45 AM	0	0	26	0	0	0	26
9:00 AM	0	0	19	0	0	0	19
9:15 AM	0	0	28	1	0	0	29
9:30 AM	1	0	37	1	0	0	39
9:45 AM	0	0	40	0	0	0	40
10:00 AM	0	0	37	0	0	0	37
10:15 AM	0	0	28	0	0	0	28
10:30 AM	1	0	57	0	0	0	58
10:45 AM	0	0	55	0	0	0	55
11:00 AM	0	0	37	0	0	0	37
11:15 AM	0	0	50	0	0	0	50
11:30 AM	0	0	44	0	0	0	44
11:45 AM	0	0	73	0	0	0	73
AM Total	**2**	**0**	**720**	**4**	**3**	**1**	**730**
Percentage	**0.27%**	**0.00%**	**98.63%**	**0.55%**	**0.41%**	**0.14%**	
AM Peak	**8:45 AM**	**12:00 AM**	**11:00 AM**	**8:45 AM**	**7:00 AM**	**3:45 AM**	**11:00 AM**
Volume	**1**	**0**	**204**	**2**	**2**	**1**	**204**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	56	1	0	0	57
12:15 PM	0	0	66	0	1	0	67
12:30 PM	0	0	52	0	0	0	52
12:45 PM	0	0	58	0	0	0	58
1:00 PM	0	0	56	0	0	0	56
1:15 PM	0	0	53	0	0	0	53
1:30 PM	0	0	40	0	0	0	40
1:45 PM	0	0	55	0	2	0	57
2:00 PM	0	0	56	0	0	0	56
2:15 PM	0	0	52	0	0	0	52
2:30 PM	0	0	39	0	0	0	39
2:45 PM	0	0	46	0	1	0	47
3:00 PM	0	0	65	0	0	0	65
3:15 PM	0	0	46	1	1	0	48
3:30 PM	0	0	41	0	1	0	42
3:45 PM	0	0	44	0	0	0	44
4:00 PM	0	0	46	0	0	0	46
4:15 PM	0	0	37	0	0	0	37
4:30 PM	0	0	37	0	0	0	37
4:45 PM	0	0	51	0	1	0	52
5:00 PM	0	0	35	0	0	0	35
5:15 PM	0	0	36	0	0	0	36
5:30 PM	0	0	42	0	0	0	42
5:45 PM	0	0	39	0	1	0	40
6:00 PM	0	0	31	0	0	0	31
6:15 PM	0	0	50	0	0	0	50
6:30 PM	0	0	28	0	0	0	28
6:45 PM	0	0	30	0	0	0	30
7:00 PM	0	0	27	0	0	0	27
7:15 PM	0	0	33	0	0	0	33
7:30 PM	0	0	24	0	0	0	24
7:45 PM	0	0	28	0	0	0	28
8:00 PM	0	0	29	0	0	0	29
8:15 PM	0	0	31	0	0	0	31
8:30 PM	0	0	16	0	0	0	16
8:45 PM	0	0	16	0	0	0	16
9:00 PM	0	0	13	0	0	0	13
9:15 PM	0	0	10	0	0	0	10
9:30 PM	0	0	10	0	0	0	10
9:45 PM	0	0	13	0	0	0	13
10:00 PM	0	0	16	0	0	0	16
10:15 PM	0	0	8	0	0	0	8
10:30 PM	0	0	6	0	0	0	6
10:45 PM	0	0	8	0	0	0	8
11:00 PM	0	0	14	0	0	0	14
11:15 PM	0	0	14	0	0	0	14
11:30 PM	0	0	4	0	0	0	4
11:45 PM	0	0	2	0	0	0	2
PM Total	**0**	**0**	**1609**	**2**	**8**	**0**	**1619**
Percentage	**0.00%**	**0.00%**	**99.38%**	**0.12%**	**0.49%**	**0.00%**	
PM Peak	**12:00 PM**	**12:00 PM**	**12:00 PM**	**12:00 PM**	**2:45 PM**	**12:00 PM**	**12:00 PM**
Volume	**0**	**0**	**232**	**1**	**3**	**0**	**234**
Day Total	**2**	**0**	**2329**	**6**	**11**	**1**	**2349**
Percentage	**0.09%**	**0.00%**	**99.15%**	**0.26%**	**0.47%**	**0.04%**	

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Monday, January 29, 2024**
Direction: **SB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-A**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	6	0	0	0	6
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	2	1	0	0	3
12:45 AM	0	0	4	0	1	0	5
1:00 AM	0	0	2	0	1	0	3
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	2	0	0	0	2
1:45 AM	0	0	1	0	1	0	2
2:00 AM	0	0	1	0	0	0	1
2:15 AM	0	0	1	0	0	0	1
2:30 AM	0	0	2	0	0	0	2
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	1	0	0	0	1
3:15 AM	0	0	3	0	0	0	3
3:30 AM	0	0	5	0	0	0	5
3:45 AM	0	0	1	0	0	0	1
4:00 AM	0	0	0	0	1	0	1
4:15 AM	0	0	3	0	0	0	3
4:30 AM	0	0	4	0	0	0	4
4:45 AM	0	0	4	0	0	0	4
5:00 AM	0	0	1	0	0	0	1
5:15 AM	0	0	3	0	0	0	3
5:30 AM	0	0	5	0	0	0	5
5:45 AM	0	0	15	0	2	0	17
6:00 AM	0	0	10	0	0	1	11
6:15 AM	0	0	13	0	0	0	13
6:30 AM	0	0	30	1	2	0	33
6:45 AM	0	0	27	1	1	0	29
7:00 AM	0	0	40	0	1	1	42
7:15 AM	0	0	74	0	3	0	77
7:30 AM	0	0	117	0	2	0	119
7:45 AM	0	0	66	1	2	0	69
8:00 AM	0	0	55	0	5	0	60
8:15 AM	0	0	66	0	2	1	69
8:30 AM	0	0	57	2	6	0	65
8:45 AM	0	0	54	1	3	0	58
9:00 AM	0	0	48	0	4	1	53
9:15 AM	0	0	41	0	0	0	41
9:30 AM	0	0	48	0	0	0	48
9:45 AM	0	0	44	0	1	0	45
10:00 AM	0	0	41	0	3	1	45
10:15 AM	0	0	37	0	0	0	37
10:30 AM	0	0	40	0	3	0	43
10:45 AM	0	0	40	0	4	0	44
11:00 AM	0	0	57	0	1	0	58
11:15 AM	0	0	43	0	0	0	43
11:30 AM	0	0	61	0	3	0	64
11:45 AM	0	0	55	0	3	0	58
AM Total	**0**	**0**	**1232**	**7**	**55**	**5**	**1299**
Percentage	**0.00%**	**0.00%**	**94.84%**	**0.54%**	**4.23%**	**0.38%**	
AM Peak	**12:00 AM**	**12:00 AM**	**7:15 AM**	**7:45 AM**	**8:00 AM**	**8:15 AM**	**7:15 AM**
Volume	**0**	**0**	**312**	**3**	**16**	**2**	**325**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	51	0	1	0	52
12:15 PM	0	0	48	0	1	1	50
12:30 PM	0	0	53	0	1	0	54
12:45 PM	0	0	45	0	3	1	49
1:00 PM	0	0	50	0	2	0	52
1:15 PM	0	0	61	1	5	0	67
1:30 PM	0	0	59	0	0	0	59
1:45 PM	0	0	61	0	3	0	64
2:00 PM	0	0	84	0	3	0	87
2:15 PM	0	0	80	0	0	0	80
2:30 PM	0	0	100	0	2	0	102
2:45 PM	0	0	74	0	0	0	74
3:00 PM	0	0	85	0	0	0	85
3:15 PM	0	0	92	1	2	0	95
3:30 PM	0	0	75	1	1	0	77
3:45 PM	0	0	79	0	1	0	80
4:00 PM	0	0	102	0	1	0	103
4:15 PM	0	0	77	1	0	0	78
4:30 PM	0	0	109	0	0	0	109
4:45 PM	0	0	78	0	0	0	78
5:00 PM	0	0	116	0	0	0	116
5:15 PM	0	1	98	1	0	0	100
5:30 PM	0	0	98	0	0	0	98
5:45 PM	0	0	69	0	1	0	70
6:00 PM	0	0	84	0	0	0	84
6:15 PM	0	0	58	0	0	0	58
6:30 PM	0	0	68	1	1	0	70
6:45 PM	0	0	55	0	0	0	55
7:00 PM	0	0	45	0	1	0	46
7:15 PM	0	0	37	0	1	0	38
7:30 PM	0	0	31	0	0	0	31
7:45 PM	0	0	33	0	0	0	33
8:00 PM	0	0	51	0	0	0	51
8:15 PM	0	0	28	0	0	0	28
8:30 PM	0	0	25	1	0	0	26
8:45 PM	0	0	26	0	0	0	26
9:00 PM	0	0	27	0	0	0	27
9:15 PM	0	0	19	0	1	0	20
9:30 PM	0	0	14	0	0	0	14
9:45 PM	0	0	12	1	0	0	13
10:00 PM	0	0	9	0	0	0	9
10:15 PM	0	0	11	0	0	0	11
10:30 PM	0	0	6	0	0	0	6
10:45 PM	0	0	6	0	0	0	6
11:00 PM	0	0	18	0	1	0	19
11:15 PM	0	0	11	0	0	0	11
11:30 PM	0	0	9	0	0	0	9
11:45 PM	0	0	1	0	0	0	1
PM Total	**0**	**1**	**2528**	**8**	**32**	**2**	**2571**
Percentage	**0.00%**	**0.04%**	**98.33%**	**0.31%**	**1.24%**	**0.08%**	
PM Peak	**12:00 PM**	**4:30 PM**	**4:30 PM**	**2:45 PM**	**12:30 PM**	**12:00 PM**	**4:30 PM**
Volume	**0**	**1**	**401**	**2**	**11**	**2**	**403**
Day Total	**0**	**1**	**3760**	**15**	**87**	**7**	**3870**
Percentage	**0.00%**	**0.03%**	**97.16%**	**0.39%**	**2.25%**	**0.18%**	

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File # **239698 ATR-A**

Direction: **NB**

Weekly Report

Day	Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Monday		Week	
Date	01/23/24		01/24/24		01/25/24		01/26/24		01/27/24		01/28/24		01/29/24		Ave	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	4	53	1	54	4	45	1	65	2	67	4	41	1	64	2	56
12:15	0	40	3	62	3	58	2	68	4	60	6	46	0	60	3	56
12:30	1	52	0	60	1	67	2	55	4	73	5	41	1	45	2	56
12:45	0	56	2	58	1	53	0	55	2	66	3	54	3	63	2	58
1:00	0	58	1	52	1	51	2	56	1	76	3	50	3	55	2	57
1:15	2	48	0	56	0	47	3	71	1	71	0	41	3	45	1	54
1:30	0	41	2	45	1	56	1	55	1	69	2	46	1	39	1	50
1:45	0	52	1	50	1	48	0	75	3	71	1	47	2	40	1	55
2:00	0	67	2	60	0	71	0	47	0	66	4	46	2	54	1	59
2:15	1	73	0	56	0	66	0	57	1	58	3	57	2	74	1	63
2:30	0	71	0	57	0	68	1	78	0	61	0	60	5	79	1	68
2:45	1	73	2	74	1	65	1	69	1	58	1	46	2	58	1	63
3:00	0	71	2	70	0	61	0	60	1	64	0	48	6	67	1	63
3:15	0	75	4	65	2	61	1	68	3	60	2	52	7	68	3	64
3:30	1	62	3	53	1	58	2	72	2	65	1	47	6	55	2	59
3:45	3	73	4	74	3	59	3	68	2	58	3	49	5	56	3	62
4:00	2	63	4	59	5	54	2	48	3	68	1	40	6	45	3	54
4:15	3	82	4	46	2	65	2	52	0	63	0	33	1	54	2	56
4:30	3	69	5	50	5	57	3	67	1	61	2	31	3	54	3	56
4:45	7	74	5	72	11	79	7	68	5	51	2	50	11	50	7	63
5:00	7	62	8	82	6	73	8	57	5	62	3	28	12	60	7	61
5:15	13	64	20	62	17	83	11	61	4	47	3	28	24	68	13	59
5:30	32	69	16	67	31	77	24	79	9	45	5	35	23	50	20	60
5:45	27	55	43	57	33	68	32	65	16	56	6	24	31	75	27	57
6:00	29	57	21	72	18	62	24	61	15	65	8	35	25	46	20	57
6:15	39	53	35	44	38	61	39	45	16	44	11	30	52	42	33	46
6:30	43	36	47	64	40	41	48	60	21	55	13	21	47	39	37	45
6:45	58	41	53	47	46	42	54	62	23	42	16	30	59	40	44	43
7:00	47	31	48	30	47	41	43	43	24	23	10	28	47	53	38	36
7:15	59	27	58	29	56	37	47	32	31	37	15	21	64	30	47	30
7:30	107	27	95	32	107	29	112	33	45	29	15	11	107	34	84	28
7:45	109	18	115	34	128	35	131	40	51	28	23	21	141	31	100	30
8:00	107	22	103	21	99	26	95	33	48	21	26	11	97	21	82	22
8:15	92	29	89	28	92	23	99	27	53	21	18	17	93	12	77	22
8:30	78	17	89	24	83	25	83	22	41	25	24	17	92	16	70	21
8:45	99	17	87	16	101	18	131	18	55	19	31	15	47	21	79	18
9:00	102	29	84	16	76	27	58	18	45	22	40	11	84	19	70	20
9:15	88	21	77	20	77	33	56	16	56	18	49	7	76	8	68	18
9:30	85	13	85	26	73	25	72	17	57	13	44	8	65	11	69	16
9:45	67	13	70	16	84	14	66	17	53	18	38	4	61	11	63	13
10:00	43	6	65	17	63	8	56	15	57	15	55	9	55	6	56	11
10:15	69	4	60	7	64	13	56	10	64	16	32	8	36	8	54	9
10:30	54	7	47	12	59	9	62	13	54	12	55	8	53	10	55	10
10:45	53	15	52	8	64	12	54	14	48	13	38	7	44	6	50	11
11:00	51	5	56	4	50	9	52	11	63	8	66	8	42	5	54	7
11:15	57	5	63	6	64	4	52	5	61	10	47	3	42	5	55	5
11:30	59	4	61	4	49	5	59	9	75	7	52	1	34	5	56	5
11:45	58	4	87	4	51	3	69	7	80	9	52	5	53	2	64	5
Total	**1760**	**2004**	**1779**	**2022**	**1758**	**2092**	**1726**	**2144**	**1207**	**2066**	**838**	**1376**	**1676**	**1859**	**1535**	**1938**
Day Total	**3764**		**3801**		**3850**		**3870**		**3273**		**2214**		**3535**		**3472**	
Peak HR	**7:30 AM**	**2:30 PM**	**7:30 AM**	**4:45 PM**	**7:30 AM**	**4:45 PM**	**7:30 AM**	**2:30 PM**	**11:00 AM**	**1:00 PM**	**11:00 AM**	**2:15 PM**	**7:30 AM**	**2:15 PM**	**7:30 AM**	**2:30 PM**
Volume	**415**	**290**	**402**	**283**	**426**	**312**	**437**	**275**	**279**	**287**	**217**	**211**	**438**	**278**	**342**	**258**

Dedham Avenue
s/o Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File # **239698 ATR-A**

Direction: **SB**

Weekly Report

Day	Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Monday		Week Ave	
Date	01/23/24		01/24/24		01/25/24		01/26/24		01/27/24		01/28/24		01/29/24			
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	0	69	4	50	2	71	10	55	10	72	6	57	6	52	5	61
12:15	2	58	3	72	4	68	4	64	6	68	3	67	1	50	3	64
12:30	3	48	3	58	5	54	3	73	4	66	4	52	3	54	4	58
12:45	0	56	3	56	5	56	3	63	2	71	3	58	5	49	3	58
1:00	2	57	7	50	2	58	3	56	5	71	1	56	3	52	3	57
1:15	1	49	1	53	0	66	3	68	3	58	5	53	1	67	2	59
1:30	1	77	4	61	2	67	2	78	3	69	0	40	2	59	2	64
1:45	2	63	5	82	1	79	0	65	5	91	2	57	2	64	2	72
2:00	1	99	0	73	0	53	3	92	5	85	1	56	1	87	2	78
2:15	1	101	2	79	1	60	0	110	1	66	4	52	1	80	1	78
2:30	0	101	2	92	0	92	2	105	6	86	1	39	2	102	2	88
2:45	0	130	5	123	1	85	1	93	1	77	1	47	0	74	1	90
3:00	0	101	4	100	2	101	2	90	5	91	0	65	1	85	2	90
3:15	0	97	1	110	1	104	1	99	1	81	0	48	3	95	1	91
3:30	2	112	6	92	2	88	2	93	1	70	2	42	5	77	3	82
3:45	1	85	4	90	0	81	2	80	4	84	1	44	1	80	2	78
4:00	2	97	1	100	2	98	1	74	0	57	3	46	1	103	1	82
4:15	1	105	3	118	2	80	0	87	2	76	0	37	3	78	2	83
4:30	3	111	6	103	2	114	3	95	1	60	2	37	4	109	3	90
4:45	3	93	2	100	3	84	3	96	0	61	2	52	4	78	2	81
5:00	3	109	7	107	2	118	3	117	1	58	1	35	1	116	3	94
5:15	2	105	3	113	4	101	4	96	4	46	0	36	3	100	3	85
5:30	9	102	8	99	4	110	3	74	3	50	2	42	5	98	5	82
5:45	10	76	9	103	7	97	4	61	3	50	0	40	17	70	7	71
6:00	7	71	15	79	8	82	13	82	7	42	4	31	11	84	9	67
6:15	18	67	14	67	16	77	12	75	11	71	4	50	13	58	13	66
6:30	24	74	20	76	25	70	22	59	4	47	3	28	33	70	19	61
6:45	30	66	34	55	32	66	28	67	7	49	7	30	29	55	24	55
7:00	55	56	33	52	32	75	37	60	15	39	13	27	42	46	32	51
7:15	83	65	67	46	53	57	64	53	23	30	14	33	77	38	54	46
7:30	108	47	105	47	107	53	86	44	33	29	17	24	119	31	82	39
7:45	89	32	70	35	65	44	71	44	30	27	16	28	69	33	59	35
8:00	78	41	90	43	84	52	58	42	38	29	19	29	60	51	61	41
8:15	78	43	65	43	74	46	77	31	29	41	24	31	69	28	59	38
8:30	87	37	64	34	77	38	59	33	37	27	30	16	65	26	60	30
8:45	69	23	69	37	76	41	83	21	50	23	26	16	58	26	62	27
9:00	52	35	58	40	56	42	54	34	40	35	19	13	53	27	47	32
9:15	55	21	48	15	58	37	42	45	53	25	29	10	41	20	47	25
9:30	58	26	48	22	52	17	41	27	62	26	39	10	48	14	50	20
9:45	55	15	58	26	48	18	66	28	71	22	40	13	45	13	55	19
10:00	61	13	45	22	61	23	41	22	56	32	37	16	45	9	49	20
10:15	57	8	49	11	51	22	46	17	61	17	28	8	37	11	47	13
10:30	47	6	38	12	59	14	48	19	54	15	58	6	43	6	50	11
10:45	51	10	47	13	56	9	57	14	62	17	55	8	44	6	53	11
11:00	53	17	47	13	59	21	63	16	76	17	37	14	58	19	56	17
11:15	57	19	61	21	53	21	68	18	70	17	50	14	43	11	57	17
11:30	58	4	72	5	67	14	82	13	62	10	44	4	64	9	64	8
11:45	68	5	71	8	56	2	71	9	88	15	73	2	58	1	69	6
Total	**1447**	**2902**	**1381**	**2906**	**1379**	**2926**	**1351**	**2857**	**1115**	**2366**	**730**	**1619**	**1299**	**2571**	**1243**	**2592**
Day Total	**4349**		**4287**		**4305**		**4208**		**3481**		**2349**		**3870**		**3836**	
Peak HR	**7:15 AM**	**2:45 PM**	**7:15 AM**	**4:15 PM**	**7:30 AM**	**5:00 PM**	**7:30 AM**	**4:30 PM**	**11:00 AM**	**2:30 PM**	**11:00 AM**	**12:00 PM**	**7:15 AM**	**4:30 PM**	**7:30 AM**	**2:30 PM**
Volume	**358**	**440**	**332**	**428**	**330**	**426**	**292**	**404**	**296**	**335**	**204**	**234**	**325**	**403**	**261**	**359**

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Tuesday, January 23, 2024**
Direction: **WB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-B**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	5	0	0	0	5
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	2	0	0	0	2
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	1	0	1	0	2
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	1	0	0	0	1
2:15 AM	0	0	1	0	0	0	1
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	2	0	0	0	2
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	1	0	1
3:45 AM	0	0	4	0	0	1	5
4:00 AM	0	0	2	0	0	0	2
4:15 AM	0	0	4	0	0	0	4
4:30 AM	0	0	2	0	0	0	2
4:45 AM	0	0	3	0	0	0	3
5:00 AM	0	0	6	0	0	0	6
5:15 AM	0	0	18	0	0	0	18
5:30 AM	0	0	30	0	4	0	34
5:45 AM	0	0	27	0	1	0	28
6:00 AM	0	0	21	0	2	0	23
6:15 AM	0	0	36	0	4	0	40
6:30 AM	0	0	37	0	1	0	38
6:45 AM	0	0	74	0	2	0	76
7:00 AM	0	0	42	0	1	0	43
7:15 AM	0	0	82	3	2	0	87
7:30 AM	2	0	108	0	1	1	112
7:45 AM	0	0	155	1	2	0	158
8:00 AM	0	0	128	2	4	0	134
8:15 AM	0	0	133	1	2	0	136
8:30 AM	1	0	118	0	3	0	122
8:45 AM	0	0	136	0	3	0	139
9:00 AM	0	0	122	0	2	1	125
9:15 AM	0	0	114	0	7	0	121
9:30 AM	0	0	102	0	1	0	103
9:45 AM	0	0	90	0	4	0	94
10:00 AM	0	0	81	0	1	1	83
10:15 AM	0	0	81	0	2	0	83
10:30 AM	0	0	92	0	3	1	96
10:45 AM	0	0	84	0	2	1	87
11:00 AM	0	0	71	0	2	0	73
11:15 AM	0	0	91	0	3	0	94
11:30 AM	0	0	75	1	5	0	81
11:45 AM	0	0	77	0	5	0	82
AM Total	**3**	**0**	**2261**	**8**	**71**	**6**	**2349**
Percentage	**0.13%**	**0.00%**	**96.25%**	**0.34%**	**3.02%**	**0.26%**	
AM Peak	**6:45 AM**	**12:00 AM**	**7:45 AM**	**7:15 AM**	**8:30 AM**	**10:00 AM**	**7:45 AM**
Volume	**2**	**0**	**534**	**6**	**15**	**3**	**550**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	95	2	2	1	100
12:15 PM	0	0	76	0	2	1	79
12:30 PM	0	0	90	0	4	2	96
12:45 PM	0	0	94	0	2	0	96
1:00 PM	0	0	90	0	1	1	92
1:15 PM	0	0	78	0	2	1	81
1:30 PM	0	0	81	0	5	0	86
1:45 PM	0	0	92	0	1	0	93
2:00 PM	0	0	94	0	2	1	97
2:15 PM	0	0	100	0	0	0	100
2:30 PM	0	0	129	2	1	0	132
2:45 PM	0	0	139	1	1	0	141
3:00 PM	0	0	113	1	0	0	114
3:15 PM	0	0	124	2	2	0	128
3:30 PM	0	0	92	0	2	0	94
3:45 PM	0	0	107	0	0	0	107
4:00 PM	0	0	103	0	2	0	105
4:15 PM	0	0	103	0	0	0	103
4:30 PM	0	0	127	0	0	0	127
4:45 PM	0	0	107	1	0	0	108
5:00 PM	0	0	107	0	1	0	108
5:15 PM	0	0	104	0	1	0	105
5:30 PM	0	0	118	0	2	0	120
5:45 PM	0	0	90	0	0	0	90
6:00 PM	0	0	93	0	0	0	93
6:15 PM	0	0	88	0	0	0	88
6:30 PM	0	0	69	0	0	0	69
6:45 PM	0	0	76	1	0	0	77
7:00 PM	0	0	72	0	0	0	72
7:15 PM	0	0	54	1	0	0	55
7:30 PM	0	0	50	0	0	0	50
7:45 PM	0	0	44	0	0	0	44
8:00 PM	0	0	37	0	0	0	37
8:15 PM	0	0	48	0	0	0	48
8:30 PM	0	0	32	0	2	0	34
8:45 PM	0	0	35	1	0	0	36
9:00 PM	0	0	46	0	0	0	46
9:15 PM	0	0	25	0	0	0	25
9:30 PM	0	0	18	0	1	0	19
9:45 PM	0	0	13	0	0	0	13
10:00 PM	0	0	12	0	0	0	12
10:15 PM	0	0	8	0	0	0	8
10:30 PM	0	0	10	0	0	0	10
10:45 PM	0	0	10	0	1	0	11
11:00 PM	0	0	4	0	1	1	6
11:15 PM	0	0	3	0	0	0	3
11:30 PM	0	0	3	0	0	0	3
11:45 PM	0	0	8	0	3	1	12
PM Total	**0**	**0**	**3311**	**12**	**41**	**9**	**3373**
Percentage	**0.00%**	**0.00%**	**98.16%**	**0.36%**	**1.22%**	**0.27%**	
PM Peak	**12:00 PM**	**12:00 PM**	**2:30 PM**	**2:30 PM**	**12:00 PM**	**12:00 PM**	**2:30 PM**
Volume	**0**	**0**	**505**	**6**	**10**	**4**	**515**

Day Total	**3**	**0**	**5572**	**20**	**112**	**15**	**5722**
Percentage	**0.05%**	**0.00%**	**97.38%**	**0.35%**	**1.96%**	**0.26%**	

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PDI File #: 239698 ATR-B

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Count Date: **Wednesday, January 24, 2024**
Direction: **WB**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	0	0	1
12:15 AM	0	0	3	0	1	0	4
12:30 AM	0	0	0	0	1	0	1
12:45 AM	0	0	1	0	0	0	1
1:00 AM	0	0	0	0	3	0	3
1:15 AM	0	0	1	0	1	0	2
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	2	0	0	0	2
2:15 AM	0	0	0	0	3	0	3
2:30 AM	0	0	2	0	0	0	2
2:45 AM	0	0	2	0	0	0	2
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	1	0	3	0	4
3:30 AM	0	0	1	0	0	0	1
3:45 AM	0	0	1	0	1	1	3
4:00 AM	0	0	2	0	1	0	3
4:15 AM	0	0	3	0	2	0	5
4:30 AM	0	0	4	0	0	1	5
4:45 AM	0	0	6	0	0	0	6
5:00 AM	0	0	6	0	2	0	8
5:15 AM	0	0	16	0	2	0	18
5:30 AM	0	0	18	0	3	0	21
5:45 AM	0	0	38	0	3	1	42
6:00 AM	0	0	20	0	1	0	21
6:15 AM	0	0	38	0	0	0	38
6:30 AM	0	0	40	0	2	0	42
6:45 AM	0	0	65	0	1	0	66
7:00 AM	0	0	52	0	2	0	54
7:15 AM	0	0	72	3	1	1	77
7:30 AM	0	0	106	1	0	1	108
7:45 AM	0	0	133	0	1	1	135
8:00 AM	0	0	137	2	3	0	142
8:15 AM	0	0	132	1	2	0	135
8:30 AM	0	0	124	0	4	0	128
8:45 AM	0	0	126	0	3	1	130
9:00 AM	0	0	90	0	0	0	90
9:15 AM	0	0	107	0	3	0	110
9:30 AM	0	0	109	0	3	0	112
9:45 AM	0	0	90	0	0	0	90
10:00 AM	0	0	70	0	4	0	74
10:15 AM	0	0	77	1	2	0	80
10:30 AM	0	0	63	0	3	1	67
10:45 AM	0	0	77	0	1	0	78
11:00 AM	0	0	77	1	5	0	83
11:15 AM	0	0	79	0	1	0	80
11:30 AM	0	0	97	0	4	0	101
11:45 AM	0	0	109	2	2	1	114
AM Total	**0**	**0**	**2198**	**11**	**74**	**9**	**2292**
Percentage	**0.00%**	**0.00%**	**95.90%**	**0.48%**	**3.23%**	**0.39%**	
AM Peak	**12:00 AM**	**12:00 AM**	**7:45 AM**	**7:15 AM**	**8:00 AM**	**7:00 AM**	**7:45 AM**
Volume	**0**	**0**	**526**	**6**	**12**	**3**	**540**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	73	0	2	0	75
12:15 PM	0	0	106	0	2	0	108
12:30 PM	0	0	91	2	3	0	96
12:45 PM	0	0	83	2	4	0	89
1:00 PM	0	0	82	0	1	0	83
1:15 PM	0	0	83	0	1	0	84
1:30 PM	0	0	88	1	1	0	90
1:45 PM	0	0	76	0	3	0	79
2:00 PM	0	0	81	1	0	0	82
2:15 PM	0	0	95	1	3	0	99
2:30 PM	0	0	105	1	1	0	107
2:45 PM	0	0	137	0	0	0	137
3:00 PM	0	0	114	0	0	0	114
3:15 PM	0	0	112	1	2	1	116
3:30 PM	0	0	106	0	2	0	108
3:45 PM	0	0	114	0	0	0	114
4:00 PM	0	0	109	0	3	0	112
4:15 PM	0	0	83	1	2	0	86
4:30 PM	0	0	105	1	0	0	106
4:45 PM	0	0	98	1	1	0	100
5:00 PM	0	0	122	0	0	0	122
5:15 PM	0	0	107	0	0	0	107
5:30 PM	0	0	97	0	1	0	98
5:45 PM	0	0	109	0	0	0	109
6:00 PM	0	0	109	0	1	0	110
6:15 PM	0	0	72	0	0	0	72
6:30 PM	0	0	79	0	0	0	79
6:45 PM	0	0	74	0	1	0	75
7:00 PM	0	0	67	0	0	0	67
7:15 PM	0	0	78	0	0	0	78
7:30 PM	0	0	56	0	0	0	56
7:45 PM	0	0	56	0	0	0	56
8:00 PM	0	0	39	0	0	0	39
8:15 PM	0	0	49	0	0	0	49
8:30 PM	0	0	34	1	0	0	35
8:45 PM	0	0	25	0	0	0	25
9:00 PM	0	0	33	0	0	0	33
9:15 PM	0	0	31	0	0	0	31
9:30 PM	0	0	33	0	0	0	33
9:45 PM	0	0	16	0	0	0	16
10:00 PM	0	0	30	0	0	0	30
10:15 PM	0	0	8	0	0	0	8
10:30 PM	0	0	11	0	0	0	11
10:45 PM	0	0	9	0	0	0	9
11:00 PM	0	0	2	1	0	0	3
11:15 PM	0	0	11	0	0	0	11
11:30 PM	0	0	5	0	0	0	5
11:45 PM	0	0	6	0	0	0	6
PM Total	**0**	**0**	**3309**	**14**	**34**	**1**	**3358**
Percentage	**0.00%**	**0.00%**	**98.54%**	**0.42%**	**1.01%**	**0.03%**	
PM Peak	**12:00 PM**	**12:00 PM**	**2:45 PM**	**12:00 PM**	**12:00 PM**	**2:30 PM**	**2:45 PM**
Volume	**0**	**0**	**469**	**4**	**11**	**1**	**475**
Day Total	**0**	**0**	**5507**	**25**	**108**	**10**	**5650**
Percentage	**0.00%**	**0.00%**	**97.47%**	**0.44%**	**1.91%**	**0.18%**	

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PDI File #: 239698 ATR-B

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Count Date: Thursday, January 25, 2024
Direction: WB

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	4	0	0	0	4
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	1	0	0	0	1
12:45 AM	0	0	1	0	0	0	1
1:00 AM	0	0	2	0	0	0	2
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	3	0	0	0	3
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	0	0	0	0	0
3:45 AM	0	0	2	0	0	1	3
4:00 AM	0	0	2	0	2	0	4
4:15 AM	0	0	1	0	0	0	1
4:30 AM	0	0	4	0	1	0	5
4:45 AM	0	0	7	0	0	0	7
5:00 AM	0	0	7	0	0	0	7
5:15 AM	0	0	14	0	2	0	16
5:30 AM	0	0	23	0	2	1	26
5:45 AM	0	0	35	0	2	0	37
6:00 AM	0	0	19	0	0	0	19
6:15 AM	0	0	38	0	0	0	38
6:30 AM	0	0	37	0	0	0	37
6:45 AM	0	0	55	0	1	0	56
7:00 AM	0	0	38	0	3	1	42
7:15 AM	0	0	79	3	0	0	82
7:30 AM	0	0	104	0	0	0	104
7:45 AM	0	0	148	1	1	1	151
8:00 AM	0	0	125	2	1	0	128
8:15 AM	0	0	105	1	1	1	108
8:30 AM	0	0	114	0	1	0	115
8:45 AM	0	0	122	0	4	1	127
9:00 AM	0	0	110	0	4	0	114
9:15 AM	0	0	99	0	5	1	105
9:30 AM	0	0	80	0	4	0	84
9:45 AM	0	0	101	0	6	0	107
10:00 AM	0	0	75	0	1	0	76
10:15 AM	0	0	97	0	2	1	100
10:30 AM	0	0	87	0	2	0	89
10:45 AM	0	0	88	0	2	0	90
11:00 AM	0	0	86	1	0	0	87
11:15 AM	0	0	76	0	2	0	78
11:30 AM	0	0	82	2	1	0	85
11:45 AM	0	0	81	1	1	0	83
AM Total	**0**	**0**	**2158**	**11**	**51**	**8**	**2228**
Percentage	**0.00%**	**0.00%**	**96.86%**	**0.49%**	**2.29%**	**0.36%**	
AM Peak	**12:00 AM**	**12:00 AM**	**7:45 AM**	**7:15 AM**	**9:00 AM**	**7:00 AM**	**7:45 AM**
Volume	**0**	**0**	**492**	**6**	**19**	**2**	**502**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	85	0	0	0	85
12:15 PM	0	0	88	0	2	0	90
12:30 PM	0	0	95	0	2	0	97
12:45 PM	0	0	77	0	3	0	80
1:00 PM	0	0	85	0	1	0	86
1:15 PM	1	0	68	0	2	1	72
1:30 PM	0	0	102	0	0	0	102
1:45 PM	0	0	75	1	3	0	79
2:00 PM	0	0	68	0	3	1	72
2:15 PM	0	0	73	1	0	0	74
2:30 PM	0	0	101	2	2	0	105
2:45 PM	0	0	104	0	1	0	105
3:00 PM	0	0	99	0	1	0	100
3:15 PM	0	0	80	0	3	0	83
3:30 PM	0	0	104	0	0	0	104
3:45 PM	0	0	82	0	3	0	85
4:00 PM	0	0	89	0	1	0	90
4:15 PM	0	0	62	0	1	0	63
4:30 PM	0	0	109	0	0	0	109
4:45 PM	0	0	94	1	0	0	95
5:00 PM	0	0	111	1	1	0	113
5:15 PM	0	0	123	0	2	0	125
5:30 PM	1	0	101	0	2	2	106
5:45 PM	0	0	147	0	0	0	147
6:00 PM	0	0	107	1	0	0	108
6:15 PM	0	0	87	0	0	0	87
6:30 PM	0	0	77	0	1	0	78
6:45 PM	0	0	71	0	0	0	71
7:00 PM	0	0	59	1	0	0	60
7:15 PM	0	0	78	0	0	0	78
7:30 PM	0	0	45	0	0	0	45
7:45 PM	0	0	46	0	0	0	46
8:00 PM	0	0	58	0	0	0	58
8:15 PM	0	0	53	0	0	0	53
8:30 PM	0	0	29	0	1	0	30
8:45 PM	0	0	48	1	0	0	49
9:00 PM	0	0	46	0	0	0	46
9:15 PM	0	0	43	0	0	0	43
9:30 PM	0	0	33	0	0	0	33
9:45 PM	0	0	15	0	0	0	15
10:00 PM	0	0	16	0	0	0	16
10:15 PM	0	0	17	0	0	0	17
10:30 PM	0	0	14	0	0	0	14
10:45 PM	0	0	15	0	0	0	15
11:00 PM	0	0	10	0	0	0	10
11:15 PM	0	0	5	0	0	0	5
11:30 PM	0	0	6	0	0	0	6
11:45 PM	0	0	4	0	0	0	4
PM Total	**2**	**0**	**3204**	**9**	**35**	**4**	**3254**
Percentage	**0.06%**	**0.00%**	**98.46%**	**0.28%**	**1.08%**	**0.12%**	
PM Peak	**12:30 PM**	**12:00 PM**	**5:00 PM**	**1:45 PM**	**12:15 PM**	**1:15 PM**	**5:00 PM**
Volume	**1**	**0**	**482**	**4**	**8**	**2**	**491**

Day Total	**2**	**0**	**5362**	**20**	**86**	**12**	**5482**
Percentage	**0.04%**	**0.00%**	**97.81%**	**0.36%**	**1.57%**	**0.22%**	

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: Friday, January 26, 2024
Direction: WB

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	0	0	1
12:15 AM	0	0	2	0	0	0	2
12:30 AM	0	0	3	0	0	0	3
12:45 AM	0	0	1	0	0	0	1
1:00 AM	0	0	1	0	1	0	2
1:15 AM	0	0	3	0	1	0	4
1:30 AM	0	0	2	0	0	0	2
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	1	0	0	0	1
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	3	0	0	0	3
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	0	0	0	1	1
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	2	0	0	0	2
3:45 AM	0	0	3	0	0	1	4
4:00 AM	0	0	1	0	1	0	2
4:15 AM	0	0	1	0	1	0	2
4:30 AM	0	0	2	0	0	0	2
4:45 AM	0	0	6	0	3	0	9
5:00 AM	0	0	7	0	0	1	8
5:15 AM	0	0	13	0	1	0	14
5:30 AM	0	0	18	0	3	0	21
5:45 AM	0	0	30	0	1	0	31
6:00 AM	0	0	21	0	1	0	22
6:15 AM	0	0	36	0	4	1	41
6:30 AM	0	0	47	0	2	0	49
6:45 AM	0	0	55	0	2	0	57
7:00 AM	0	0	44	0	0	0	44
7:15 AM	0	0	77	3	1	0	81
7:30 AM	0	0	118	1	0	0	119
7:45 AM	0	0	137	0	3	1	141
8:00 AM	0	0	112	2	2	0	116
8:15 AM	0	0	134	1	4	0	139
8:30 AM	0	0	119	1	7	1	128
8:45 AM	0	0	137	0	2	0	139
9:00 AM	1	0	83	0	2	0	86
9:15 AM	0	0	71	0	5	0	76
9:30 AM	0	0	96	0	8	0	104
9:45 AM	0	0	95	0	1	1	97
10:00 AM	0	0	71	1	1	0	73
10:15 AM	0	0	70	0	2	1	73
10:30 AM	0	0	64	0	3	0	67
10:45 AM	0	0	83	1	0	1	85
11:00 AM	0	0	88	0	6	0	94
11:15 AM	0	0	88	1	2	0	91
11:30 AM	1	0	93	0	2	0	96
11:45 AM	0	0	91	2	2	0	95
AM Total	**2**	**0**	**2132**	**13**	**74**	**9**	**2230**
Percentage	**0.09%**	**0.00%**	**95.61%**	**0.58%**	**3.32%**	**0.40%**	
AM Peak	**8:15 AM**	**12:00 AM**	**7:45 AM**	**7:15 AM**	**8:45 AM**	**3:00 AM**	**7:45 AM**
Volume	**1**	**0**	**502**	**6**	**17**	**2**	**524**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	98	0	2	0	100
12:15 PM	0	0	98	0	1	0	99
12:30 PM	0	0	99	0	2	0	101
12:45 PM	0	0	84	1	3	0	88
1:00 PM	0	0	88	0	3	0	91
1:15 PM	0	0	93	0	1	1	95
1:30 PM	0	0	85	1	3	0	89
1:45 PM	0	0	104	0	3	0	107
2:00 PM	0	0	86	0	0	0	86
2:15 PM	0	0	104	0	0	0	104
2:30 PM	0	0	125	2	0	0	127
2:45 PM	0	0	140	0	0	0	140
3:00 PM	0	0	115	0	2	0	117
3:15 PM	0	0	122	1	2	0	125
3:30 PM	0	0	99	0	0	0	99
3:45 PM	0	0	130	0	3	0	133
4:00 PM	0	0	104	0	1	0	105
4:15 PM	0	0	102	0	0	0	102
4:30 PM	0	0	118	0	0	0	118
4:45 PM	0	0	103	0	0	0	103
5:00 PM	0	0	107	0	0	0	107
5:15 PM	0	0	129	0	1	0	130
5:30 PM	0	0	118	0	0	0	118
5:45 PM	0	0	117	0	1	0	118
6:00 PM	0	0	87	1	1	0	89
6:15 PM	0	0	102	0	2	0	104
6:30 PM	0	0	94	0	0	0	94
6:45 PM	0	0	106	1	0	0	107
7:00 PM	0	0	73	0	0	0	73
7:15 PM	0	0	73	0	0	0	73
7:30 PM	0	0	64	0	0	0	64
7:45 PM	0	0	61	0	0	0	61
8:00 PM	0	0	47	0	0	0	47
8:15 PM	0	0	60	0	0	0	60
8:30 PM	0	0	39	1	0	0	40
8:45 PM	0	0	36	0	0	0	36
9:00 PM	0	0	39	0	0	0	39
9:15 PM	0	0	30	1	0	0	31
9:30 PM	0	0	35	0	0	0	35
9:45 PM	0	0	30	0	0	0	30
10:00 PM	0	0	38	0	0	0	38
10:15 PM	0	0	19	0	0	0	19
10:30 PM	0	0	22	0	0	0	22
10:45 PM	0	0	21	0	0	0	21
11:00 PM	0	0	9	0	0	0	9
11:15 PM	0	0	12	0	0	0	12
11:30 PM	0	0	10	0	0	0	10
11:45 PM	0	0	13	0	0	0	13
PM Total	**0**	**0**	**3688**	**9**	**31**	**1**	**3729**
Percentage	**0.00%**	**0.00%**	**98.90%**	**0.24%**	**0.83%**	**0.03%**	
PM Peak	**12:00 PM**	**12:00 PM**	**2:30 PM**	**2:30 PM**	**12:45 PM**	**12:30 PM**	**2:30 PM**
Volume	**0**	**0**	**502**	**3**	**10**	**1**	**509**
Day Total	**2**	**0**	**5820**	**22**	**105**	**10**	**5959**
Percentage	**0.03%**	**0.00%**	**97.67%**	**0.37%**	**1.76%**	**0.17%**	

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PDI File #: 239698 ATR-B

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Count Date: **Saturday, January 27, 2024**
Direction: **WB**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	7	0	0	0	7
12:15 AM	0	0	9	0	0	0	9
12:30 AM	0	0	6	0	0	0	6
12:45 AM	0	0	3	0	0	0	3
1:00 AM	0	0	1	0	0	0	1
1:15 AM	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	3	0	0	0	3
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	1	0	0	0	1
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	2	0	0	0	2
3:00 AM	0	0	1	0	0	0	1
3:15 AM	0	0	2	0	0	0	2
3:30 AM	0	0	1	0	0	0	1
3:45 AM	0	0	2	0	0	1	3
4:00 AM	0	0	2	0	0	0	2
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	1	0	0	0	1
4:45 AM	0	0	3	0	0	0	3
5:00 AM	0	0	6	0	0	0	6
5:15 AM	0	0	3	0	0	0	3
5:30 AM	1	0	2	0	1	0	4
5:45 AM	0	0	13	0	0	0	13
6:00 AM	0	0	16	0	1	0	17
6:15 AM	0	0	16	0	0	0	16
6:30 AM	0	0	19	0	0	0	19
6:45 AM	0	0	19	0	2	0	21
7:00 AM	0	0	30	0	0	1	31
7:15 AM	0	0	35	0	0	0	35
7:30 AM	0	0	50	0	2	0	52
7:45 AM	0	0	55	0	0	0	55
8:00 AM	0	0	48	0	2	0	50
8:15 AM	0	0	72	0	1	1	74
8:30 AM	0	0	56	0	0	1	57
8:45 AM	0	0	65	0	2	1	68
9:00 AM	0	0	78	0	1	0	79
9:15 AM	0	0	84	0	0	0	84
9:30 AM	0	0	78	0	0	0	78
9:45 AM	0	0	107	0	0	0	107
10:00 AM	0	1	116	0	4	1	122
10:15 AM	0	0	116	0	3	0	119
10:30 AM	0	0	102	0	0	0	102
10:45 AM	1	0	101	1	1	0	104
11:00 AM	0	0	94	0	2	0	96
11:15 AM	0	0	93	1	1	0	95
11:30 AM	0	0	114	0	1	0	115
11:45 AM	1	0	113	0	0	0	114
AM Total	**3**	**1**	**1745**	**2**	**24**	**6**	**1781**
Percentage	**0.17%**	**0.06%**	**97.98%**	**0.11%**	**1.35%**	**0.34%**	
AM Peak	**4:45 AM**	**9:15 AM**	**9:45 AM**	**10:30 AM**	**10:00 AM**	**8:00 AM**	**9:45 AM**
Volume	**1**	**1**	**441**	**2**	**8**	**3**	**450**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	112	1	0	0	113
12:15 PM	0	0	99	0	1	0	100
12:30 PM	0	0	109	0	3	1	113
12:45 PM	1	0	93	0	2	0	96
1:00 PM	0	0	131	0	1	0	132
1:15 PM	1	0	98	0	0	0	99
1:30 PM	0	0	101	1	1	0	103
1:45 PM	0	0	118	0	0	0	118
2:00 PM	0	0	97	0	0	0	97
2:15 PM	0	0	105	0	0	0	105
2:30 PM	0	0	90	0	0	1	91
2:45 PM	1	0	106	0	0	0	107
3:00 PM	0	0	109	0	0	0	109
3:15 PM	2	0	82	0	1	0	85
3:30 PM	0	0	104	0	2	0	106
3:45 PM	0	0	93	0	0	0	93
4:00 PM	0	0	83	0	0	0	83
4:15 PM	0	0	78	0	1	0	79
4:30 PM	0	0	80	0	0	0	80
4:45 PM	0	0	78	0	0	0	78
5:00 PM	0	0	98	2	0	0	100
5:15 PM	0	0	67	0	0	0	67
5:30 PM	0	0	72	0	0	0	72
5:45 PM	0	0	75	0	0	0	75
6:00 PM	0	0	85	0	0	0	85
6:15 PM	0	0	76	0	0	0	76
6:30 PM	0	0	78	0	0	0	78
6:45 PM	0	0	63	0	0	0	63
7:00 PM	0	0	56	0	0	0	56
7:15 PM	0	0	63	0	1	0	64
7:30 PM	0	0	46	0	0	0	46
7:45 PM	0	0	50	0	0	0	50
8:00 PM	0	0	33	0	0	0	33
8:15 PM	0	0	33	0	0	0	33
8:30 PM	0	0	37	0	0	0	37
8:45 PM	0	0	25	0	0	0	25
9:00 PM	0	0	34	0	0	0	34
9:15 PM	0	0	36	0	0	0	36
9:30 PM	0	0	21	1	0	0	22
9:45 PM	0	0	32	0	0	0	32
10:00 PM	0	0	28	0	0	0	28
10:15 PM	0	0	19	0	0	0	19
10:30 PM	0	0	17	0	0	0	17
10:45 PM	0	0	20	0	0	0	20
11:00 PM	0	0	12	0	0	0	12
11:15 PM	0	0	13	0	0	1	14
11:30 PM	0	0	18	0	0	0	18
11:45 PM	0	0	17	0	0	0	17
PM Total	**5**	**0**	**3190**	**5**	**13**	**3**	**3216**
Percentage	**0.16%**	**0.00%**	**99.19%**	**0.16%**	**0.40%**	**0.09%**	
PM Peak	**2:30 PM**	**12:00 PM**	**1:00 PM**	**4:15 PM**	**12:15 PM**	**12:00 PM**	**1:00 PM**
Volume	**3**	**0**	**448**	**2**	**7**	**1**	**452**
Day Total	**8**	**1**	**4935**	**7**	**37**	**9**	**4997**
Percentage	**0.16%**	**0.02%**	**98.76%**	**0.14%**	**0.74%**	**0.18%**	

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Sunday, January 28, 2024**
Direction: **WB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-B**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	8	0	0	0	8
12:15 AM	0	0	7	0	0	0	7
12:30 AM	0	0	5	0	0	0	5
12:45 AM	0	0	7	0	0	0	7
1:00 AM	0	0	4	0	0	0	4
1:15 AM	0	0	3	0	0	0	3
1:30 AM	0	0	2	0	0	0	2
1:45 AM	0	0	2	0	0	0	2
2:00 AM	0	0	2	0	0	0	2
2:15 AM	0	0	4	0	0	0	4
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	1	0	0	0	1
3:45 AM	0	0	2	0	1	0	3
4:00 AM	0	0	0	0	0	0	0
4:15 AM	0	0	2	0	0	0	2
4:30 AM	0	0	2	0	0	0	2
4:45 AM	0	0	5	0	0	0	5
5:00 AM	0	0	2	0	0	0	2
5:15 AM	0	0	4	0	0	0	4
5:30 AM	0	0	3	0	0	0	3
5:45 AM	0	0	9	0	0	0	9
6:00 AM	0	0	7	0	0	0	7
6:15 AM	0	0	12	0	0	0	12
6:30 AM	0	0	13	0	1	0	14
6:45 AM	0	0	16	0	0	0	16
7:00 AM	0	0	16	0	0	0	16
7:15 AM	0	0	18	0	0	0	18
7:30 AM	0	0	19	0	0	0	19
7:45 AM	0	0	26	0	0	0	26
8:00 AM	0	0	30	0	0	0	30
8:15 AM	0	0	37	0	0	0	37
8:30 AM	0	0	35	0	0	0	35
8:45 AM	0	1	36	0	1	0	38
9:00 AM	0	0	58	0	0	0	58
9:15 AM	0	0	56	0	0	0	56
9:30 AM	0	0	57	0	0	0	57
9:45 AM	0	0	47	0	0	0	47
10:00 AM	0	0	66	0	0	0	66
10:15 AM	0	0	49	0	0	0	49
10:30 AM	0	0	71	0	0	0	71
10:45 AM	0	0	54	0	0	0	54
11:00 AM	0	0	91	1	0	0	92
11:15 AM	0	0	55	0	1	0	56
11:30 AM	0	0	82	0	0	0	82
11:45 AM	0	0	81	0	0	0	81
AM Total	**0**	**1**	**1108**	**1**	**4**	**0**	**1114**
Percentage	**0.00%**	**0.09%**	**99.46%**	**0.09%**	**0.36%**	**0.00%**	
AM Peak	**12:00 AM**	**8:00 AM**	**11:00 AM**	**10:15 AM**	**3:00 AM**	**12:00 AM**	**11:00 AM**
Volume	**0**	**1**	**309**	**1**	**1**	**0**	**311**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	58	0	0	0	58
12:15 PM	0	0	68	0	1	0	69
12:30 PM	0	0	69	0	0	0	69
12:45 PM	0	0	76	1	0	0	77
1:00 PM	0	0	66	0	0	0	66
1:15 PM	0	0	65	0	0	0	65
1:30 PM	0	0	68	0	2	0	70
1:45 PM	0	0	81	0	0	0	81
2:00 PM	0	0	52	0	0	0	52
2:15 PM	0	0	73	0	0	0	73
2:30 PM	0	0	85	0	0	0	85
2:45 PM	0	0	72	0	2	0	74
3:00 PM	0	0	66	1	2	0	69
3:15 PM	0	0	48	0	1	0	49
3:30 PM	0	0	62	0	0	0	62
3:45 PM	0	0	62	0	0	0	62
4:00 PM	0	0	57	0	0	0	57
4:15 PM	0	0	48	1	0	0	49
4:30 PM	0	0	50	0	0	0	50
4:45 PM	0	0	64	0	0	0	64
5:00 PM	0	0	43	0	0	0	43
5:15 PM	0	0	37	0	0	0	37
5:30 PM	0	0	58	0	1	0	59
5:45 PM	0	0	49	1	1	0	51
6:00 PM	0	0	40	0	0	0	40
6:15 PM	0	0	57	0	0	0	57
6:30 PM	0	0	48	0	0	0	48
6:45 PM	0	0	51	0	0	0	51
7:00 PM	0	0	38	0	0	0	38
7:15 PM	0	0	48	0	0	0	48
7:30 PM	0	0	26	0	0	0	26
7:45 PM	0	0	31	0	0	0	31
8:00 PM	0	0	25	0	0	0	25
8:15 PM	0	0	30	0	0	0	30
8:30 PM	0	0	24	0	0	0	24
8:45 PM	0	0	20	0	0	0	20
9:00 PM	0	0	17	0	0	0	17
9:15 PM	0	0	11	0	0	0	11
9:30 PM	0	0	9	0	0	0	9
9:45 PM	0	0	10	0	0	0	10
10:00 PM	0	0	9	0	0	0	9
10:15 PM	0	0	6	0	0	0	6
10:30 PM	0	0	8	0	2	0	10
10:45 PM	0	0	6	0	1	0	7
11:00 PM	0	0	9	0	1	0	10
11:15 PM	0	0	2	0	1	0	3
11:30 PM	0	0	1	0	1	0	2
11:45 PM	0	0	4	0	0	0	4
PM Total	**0**	**0**	**2007**	**4**	**16**	**0**	**2027**
Percentage	**0.00%**	**0.00%**	**99.01%**	**0.20%**	**0.79%**	**0.00%**	
PM Peak	**12:00 PM**	**12:00 PM**	**2:15 PM**	**12:00 PM**	**2:30 PM**	**12:00 PM**	**2:15 PM**
Volume	**0**	**0**	**296**	**1**	**5**	**0**	**301**
Day Total	**0**	**1**	**3115**	**5**	**20**	**0**	**3141**
Percentage	**0.00%**	**0.03%**	**99.17%**	**0.16%**	**0.64%**	**0.00%**	

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PDI File #: 239698 ATR-B

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Count Date: **Monday, January 29, 2024**
Direction: **WB**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	1	0	2
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	2	0	2	0	4
12:45 AM	0	0	2	0	0	0	2
1:00 AM	0	0	1	0	0	0	1
1:15 AM	0	0	4	0	0	0	4
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	3	0	2	0	5
2:00 AM	0	0	1	0	1	0	2
2:15 AM	0	0	1	0	2	0	3
2:30 AM	0	0	6	0	2	0	8
2:45 AM	0	0	4	0	1	0	5
3:00 AM	0	0	7	0	3	1	11
3:15 AM	0	0	5	0	0	0	5
3:30 AM	0	0	5	0	0	0	5
3:45 AM	0	0	2	0	0	0	2
4:00 AM	0	0	5	0	0	0	5
4:15 AM	0	0	0	0	1	0	1
4:30 AM	0	0	2	0	1	0	3
4:45 AM	0	0	8	0	0	0	8
5:00 AM	0	0	7	0	3	0	10
5:15 AM	0	0	19	0	1	0	20
5:30 AM	0	0	23	0	1	0	24
5:45 AM	0	0	25	0	4	0	29
6:00 AM	0	0	14	0	4	0	18
6:15 AM	0	0	46	0	3	2	51
6:30 AM	0	0	48	0	5	0	53
6:45 AM	0	0	48	0	1	1	50
7:00 AM	0	0	40	0	2	1	43
7:15 AM	0	0	79	3	0	0	82
7:30 AM	0	0	114	0	2	0	116
7:45 AM	0	0	158	0	1	1	160
8:00 AM	0	0	140	2	6	0	148
8:15 AM	0	0	131	1	2	0	134
8:30 AM	0	0	118	0	6	1	125
8:45 AM	0	0	91	0	2	0	93
9:00 AM	0	0	94	0	4	0	98
9:15 AM	0	0	85	0	6	1	92
9:30 AM	0	0	69	0	2	0	71
9:45 AM	0	0	76	0	1	0	77
10:00 AM	1	0	69	0	6	0	76
10:15 AM	0	0	53	0	2	0	55
10:30 AM	0	0	65	0	4	0	69
10:45 AM	0	0	70	0	1	0	71
11:00 AM	0	0	71	0	7	0	78
11:15 AM	0	0	67	0	1	0	68
11:30 AM	1	0	71	0	3	0	75
11:45 AM	0	0	80	0	1	0	81
AM Total	**2**	**0**	**2032**	**6**	**97**	**8**	**2145**
Percentage	**0.09%**	**0.00%**	**94.73%**	**0.28%**	**4.52%**	**0.37%**	
AM Peak	**9:15 AM**	**12:00 AM**	**7:45 AM**	**7:15 AM**	**8:30 AM**	**6:15 AM**	**7:45 AM**
Volume	**1**	**0**	**547**	**5**	**18**	**4**	**567**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	91	1	1	0	93
12:15 PM	0	0	87	0	3	1	91
12:30 PM	0	0	75	0	2	0	77
12:45 PM	0	0	94	0	3	0	97
1:00 PM	0	0	77	0	1	1	79
1:15 PM	0	0	66	0	2	0	68
1:30 PM	0	0	63	0	4	0	67
1:45 PM	0	0	83	0	3	0	86
2:00 PM	0	0	83	0	0	0	83
2:15 PM	0	0	87	0	0	0	87
2:30 PM	0	0	99	2	0	0	101
2:45 PM	0	0	127	2	1	0	130
3:00 PM	0	0	104	0	2	1	107
3:15 PM	0	0	101	1	0	0	102
3:30 PM	0	0	104	0	0	0	104
3:45 PM	0	0	97	1	0	0	98
4:00 PM	0	0	81	0	1	0	82
4:15 PM	0	0	89	0	0	0	89
4:30 PM	0	0	80	0	1	0	81
4:45 PM	0	0	99	0	0	0	99
5:00 PM	0	0	89	0	4	0	93
5:15 PM	0	0	105	0	1	0	106
5:30 PM	0	0	108	0	0	0	108
5:45 PM	0	0	101	0	0	0	101
6:00 PM	0	0	88	0	0	0	88
6:15 PM	0	0	77	0	0	0	77
6:30 PM	0	0	77	0	1	0	78
6:45 PM	0	0	76	0	0	0	76
7:00 PM	0	0	78	0	0	0	78
7:15 PM	0	0	54	0	0	0	54
7:30 PM	0	0	53	0	1	0	54
7:45 PM	0	0	50	0	1	0	51
8:00 PM	0	0	41	0	0	0	41
8:15 PM	0	0	35	0	0	0	35
8:30 PM	0	0	26	1	1	0	28
8:45 PM	0	0	30	0	1	0	31
9:00 PM	0	0	42	0	1	0	43
9:15 PM	0	0	18	0	1	0	19
9:30 PM	0	0	14	0	0	0	14
9:45 PM	0	0	18	0	0	0	18
10:00 PM	0	0	10	0	0	0	10
10:15 PM	0	0	8	0	0	0	8
10:30 PM	0	0	11	0	0	0	11
10:45 PM	0	0	7	0	0	0	7
11:00 PM	0	0	6	0	0	0	6
11:15 PM	0	0	6	0	0	0	6
11:30 PM	0	0	4	0	0	0	4
11:45 PM	0	0	2	0	0	0	2
PM Total	**0**	**0**	**3021**	**8**	**36**	**3**	**3068**
Percentage	**0.00%**	**0.00%**	**98.47%**	**0.26%**	**1.17%**	**0.10%**	
PM Peak	**12:00 PM**	**12:00 PM**	**2:45 PM**	**2:30 PM**	**12:45 PM**	**12:15 PM**	**2:45 PM**
Volume	**0**	**0**	**436**	**5**	**10**	**2**	**443**
Day Total	**2**	**0**	**5053**	**14**	**133**	**11**	**5213**
Percentage	**0.04%**	**0.00%**	**96.93%**	**0.27%**	**2.55%**	**0.21%**	

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PDI File #: 239698 ATR-B

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Count Date: **Tuesday, January 23, 2024**
Direction: **EB**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	0	0	0	0	0
12:15 AM	0	0	2	0	0	0	2
12:30 AM	0	0	4	0	0	0	4
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	2	0	0	0	2
1:15 AM	0	0	0	0	2	0	2
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	1	0	0	0	1
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	3	0	0	0	3
3:45 AM	0	0	1	0	0	0	1
4:00 AM	0	0	1	0	2	1	4
4:15 AM	0	0	1	0	0	0	1
4:30 AM	0	0	4	0	0	0	4
4:45 AM	0	0	4	0	0	0	4
5:00 AM	0	0	2	0	0	0	2
5:15 AM	0	0	3	0	0	0	3
5:30 AM	0	0	11	0	0	0	11
5:45 AM	0	0	17	0	1	0	18
6:00 AM	0	0	20	0	1	0	21
6:15 AM	0	0	19	0	1	0	20
6:30 AM	0	0	33	0	2	0	35
6:45 AM	0	0	37	3	1	1	42
7:00 AM	0	0	75	0	5	1	81
7:15 AM	0	0	122	0	2	0	124
7:30 AM	0	0	174	0	1	0	175
7:45 AM	1	0	142	2	7	0	152
8:00 AM	0	0	101	0	4	0	105
8:15 AM	0	0	98	0	3	0	101
8:30 AM	0	0	109	2	1	0	112
8:45 AM	0	0	104	0	6	0	110
9:00 AM	0	0	79	0	2	0	81
9:15 AM	0	0	75	0	2	0	77
9:30 AM	0	0	85	0	2	1	88
9:45 AM	0	0	69	0	2	0	71
10:00 AM	0	0	91	0	3	0	94
10:15 AM	0	0	60	0	4	0	64
10:30 AM	0	0	56	0	2	1	59
10:45 AM	0	0	69	0	4	0	73
11:00 AM	0	0	71	0	2	1	74
11:15 AM	0	0	72	0	1	1	74
11:30 AM	0	0	83	0	3	0	86
11:45 AM	0	0	76	0	3	1	80
AM Total	**1**	**0**	**1977**	**7**	**69**	**8**	**2062**
Percentage	**0.05%**	**0.00%**	**95.88%**	**0.34%**	**3.35%**	**0.39%**	
AM Peak	**7:00 AM**	**12:00 AM**	**7:15 AM**	**7:45 AM**	**7:00 AM**	**10:30 AM**	**7:15 AM**
Volume	**1**	**0**	**539**	**4**	**15**	**3**	**556**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	96	0	5	0	101
12:15 PM	0	0	72	1	5	1	79
12:30 PM	0	0	90	0	2	1	93
12:45 PM	0	0	97	0	2	0	99
1:00 PM	0	0	71	0	0	0	71
1:15 PM	0	0	91	0	2	2	95
1:30 PM	0	0	86	0	2	0	88
1:45 PM	0	0	95	0	2	0	97
2:00 PM	0	0	100	0	3	0	103
2:15 PM	0	0	125	0	1	1	127
2:30 PM	0	0	100	0	3	1	104
2:45 PM	0	0	125	0	5	1	131
3:00 PM	0	0	111	0	1	0	112
3:15 PM	0	0	113	1	1	0	115
3:30 PM	0	0	138	1	1	0	140
3:45 PM	0	0	113	0	1	0	114
4:00 PM	0	0	107	0	3	0	110
4:15 PM	0	0	110	1	1	0	112
4:30 PM	0	0	135	2	1	0	138
4:45 PM	0	0	105	0	1	0	106
5:00 PM	0	0	100	1	0	0	101
5:15 PM	0	0	101	0	1	0	102
5:30 PM	0	0	126	0	0	0	126
5:45 PM	0	0	113	1	1	0	115
6:00 PM	0	0	86	0	1	0	87
6:15 PM	0	0	86	0	0	0	86
6:30 PM	0	0	79	2	0	0	81
6:45 PM	0	0	85	0	1	0	86
7:00 PM	0	0	75	0	0	0	75
7:15 PM	0	0	72	0	0	0	72
7:30 PM	0	0	66	0	1	0	67
7:45 PM	0	0	46	0	0	0	46
8:00 PM	0	0	47	0	0	0	47
8:15 PM	1	0	43	0	2	0	46
8:30 PM	0	0	43	1	0	0	44
8:45 PM	0	0	29	0	0	0	29
9:00 PM	0	0	36	0	0	0	36
9:15 PM	0	0	29	0	0	0	29
9:30 PM	0	0	28	0	0	0	28
9:45 PM	0	0	15	1	0	0	16
10:00 PM	0	0	15	0	0	0	15
10:15 PM	0	0	15	0	0	0	15
10:30 PM	0	0	9	0	0	0	9
10:45 PM	0	0	12	0	0	0	12
11:00 PM	0	0	13	0	1	0	14
11:15 PM	0	0	17	0	0	0	17
11:30 PM	0	0	4	0	0	0	4
11:45 PM	0	0	4	0	1	0	5
PM Total	**1**	**0**	**3474**	**12**	**51**	**7**	**3545**
Percentage	**0.03%**	**0.00%**	**98.00%**	**0.34%**	**1.44%**	**0.20%**	
PM Peak	**7:30 PM**	**12:00 PM**	**2:45 PM**	**4:15 PM**	**12:00 PM**	**12:30 PM**	**2:45 PM**
Volume	**1**	**0**	**487**	**4**	**14**	**3**	**498**
Day Total	**2**	**0**	**5451**	**19**	**120**	**15**	**5607**
Percentage	**0.04%**	**0.00%**	**97.22%**	**0.34%**	**2.14%**	**0.27%**	

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Wednesday, January 24, 2024**
Direction: **EB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-B**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	8	0	1	0	9
12:15 AM	0	0	3	0	1	0	4
12:30 AM	0	0	3	0	2	0	5
12:45 AM	0	0	3	0	0	0	3
1:00 AM	0	0	5	0	0	0	5
1:15 AM	0	0	1	0	2	0	3
1:30 AM	0	0	2	0	2	0	4
1:45 AM	0	0	4	0	0	0	4
2:00 AM	0	0	1	0	0	0	1
2:15 AM	0	0	2	0	4	0	6
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	5	0	0	0	5
3:00 AM	0	0	2	0	0	0	2
3:15 AM	0	0	2	0	0	0	2
3:30 AM	0	0	5	0	1	0	6
3:45 AM	0	0	3	0	1	0	4
4:00 AM	0	0	0	0	4	0	4
4:15 AM	0	0	3	0	0	1	4
4:30 AM	0	0	4	0	0	0	4
4:45 AM	0	0	4	0	1	0	5
5:00 AM	0	0	5	0	1	0	6
5:15 AM	0	0	7	0	1	0	8
5:30 AM	0	0	11	0	1	0	12
5:45 AM	0	0	9	0	2	0	11
6:00 AM	0	0	23	0	1	1	25
6:15 AM	0	0	21	0	0	0	21
6:30 AM	0	0	31	0	0	0	31
6:45 AM	0	0	53	3	4	1	61
7:00 AM	0	0	54	0	1	1	56
7:15 AM	0	0	113	0	3	0	116
7:30 AM	0	0	182	0	2	1	185
7:45 AM	0	0	134	2	2	0	138
8:00 AM	0	0	113	0	2	0	115
8:15 AM	0	0	89	0	1	0	90
8:30 AM	0	0	77	2	1	1	81
8:45 AM	0	0	115	0	2	0	117
9:00 AM	0	0	105	1	3	0	109
9:15 AM	0	0	84	0	1	0	85
9:30 AM	0	0	78	0	2	0	80
9:45 AM	0	0	87	0	2	2	91
10:00 AM	0	0	51	0	2	2	55
10:15 AM	0	0	61	0	3	0	64
10:30 AM	0	0	57	1	2	0	60
10:45 AM	0	0	61	0	4	0	65
11:00 AM	1	0	73	0	4	0	78
11:15 AM	0	0	83	0	6	0	89
11:30 AM	0	0	92	0	3	0	95
11:45 AM	0	0	83	0	4	0	87
AM Total	**1**	**0**	**2013**	**9**	**79**	**10**	**2112**
Percentage	**0.05%**	**0.00%**	**95.31%**	**0.43%**	**3.74%**	**0.47%**	
AM Peak	**10:15 AM**	**12:00 AM**	**7:15 AM**	**7:45 AM**	**10:45 AM**	**9:15 AM**	**7:15 AM**
Volume	**1**	**0**	**542**	**4**	**17**	**4**	**554**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	61	1	2	0	64
12:15 PM	0	0	95	0	0	0	95
12:30 PM	0	0	76	0	0	0	76
12:45 PM	0	0	94	1	0	0	95
1:00 PM	0	0	79	1	3	0	83
1:15 PM	0	0	60	0	4	1	65
1:30 PM	0	0	79	3	5	0	87
1:45 PM	0	0	105	0	2	0	107
2:00 PM	0	0	90	0	2	0	92
2:15 PM	0	0	95	0	1	1	97
2:30 PM	0	0	123	1	0	0	124
2:45 PM	0	0	107	0	1	0	108
3:00 PM	0	0	124	1	4	0	129
3:15 PM	0	0	104	0	4	0	108
3:30 PM	0	0	121	0	2	0	123
3:45 PM	0	0	91	0	1	0	92
4:00 PM	0	0	110	0	1	0	111
4:15 PM	0	0	104	1	2	0	107
4:30 PM	0	0	98	1	0	0	99
4:45 PM	0	0	103	0	0	0	103
5:00 PM	0	0	108	0	0	0	108
5:15 PM	0	0	113	0	2	0	115
5:30 PM	0	0	109	0	0	0	109
5:45 PM	1	0	120	0	0	0	121
6:00 PM	0	0	99	0	0	0	99
6:15 PM	0	0	100	0	0	0	100
6:30 PM	0	0	83	1	0	0	84
6:45 PM	0	0	94	1	1	0	96
7:00 PM	0	0	61	0	0	0	61
7:15 PM	0	0	57	0	1	0	58
7:30 PM	0	0	70	0	0	0	70
7:45 PM	0	0	54	0	0	0	54
8:00 PM	0	0	59	0	0	0	59
8:15 PM	0	0	48	0	0	0	48
8:30 PM	0	0	38	0	0	0	38
8:45 PM	0	0	31	1	0	0	32
9:00 PM	0	0	36	0	0	0	36
9:15 PM	0	0	28	0	0	0	28
9:30 PM	0	0	27	0	0	0	27
9:45 PM	0	0	24	1	0	0	25
10:00 PM	0	0	20	0	0	0	20
10:15 PM	0	0	16	0	0	0	16
10:30 PM	0	0	12	0	0	0	12
10:45 PM	0	0	10	1	0	0	11
11:00 PM	0	0	15	0	1	0	16
11:15 PM	0	0	21	1	0	0	22
11:30 PM	0	0	4	0	0	0	4
11:45 PM	0	0	8	0	0	0	8
PM Total	**1**	**0**	**3384**	**16**	**39**	**2**	**3442**
Percentage	**0.03%**	**0.00%**	**98.31%**	**0.46%**	**1.13%**	**0.06%**	
PM Peak	**5:00 PM**	**12:00 PM**	**2:30 PM**	**12:45 PM**	**1:00 PM**	**12:30 PM**	**2:30 PM**
Volume	**1**	**0**	**458**	**5**	**14**	**1**	**469**

Day Total	**2**	**0**	**5397**	**25**	**118**	**12**	**5554**
Percentage	**0.04%**	**0.00%**	**97.17%**	**0.45%**	**2.12%**	**0.22%**	

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PDI File #: 239698 ATR-B

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Count Date: Thursday, January 25, 2024
Direction: EB

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	0	0	1
12:15 AM	0	0	4	0	0	0	4
12:30 AM	0	0	4	0	0	0	4
12:45 AM	0	0	4	0	0	0	4
1:00 AM	0	0	1	0	0	0	1
1:15 AM	0	0	1	0	1	0	2
1:30 AM	0	0	0	0	1	0	1
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	0	0	1	0	1
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	2	0	0	0	2
3:15 AM	0	0	1	0	1	0	2
3:30 AM	0	0	2	0	0	0	2
3:45 AM	0	0	1	0	0	0	1
4:00 AM	0	0	0	0	2	0	2
4:15 AM	0	0	1	0	0	1	2
4:30 AM	0	0	3	0	0	0	3
4:45 AM	1	0	2	0	0	0	3
5:00 AM	0	0	3	0	0	0	3
5:15 AM	0	0	3	0	0	0	3
5:30 AM	0	0	7	0	1	0	8
5:45 AM	0	0	14	0	0	0	14
6:00 AM	0	0	16	0	0	0	16
6:15 AM	0	0	30	0	0	0	30
6:30 AM	1	0	33	0	0	0	34
6:45 AM	0	0	52	3	1	0	56
7:00 AM	0	0	66	0	1	0	67
7:15 AM	0	0	82	0	0	0	82
7:30 AM	1	0	187	0	0	0	188
7:45 AM	0	0	134	1	0	0	135
8:00 AM	0	0	125	1	5	0	131
8:15 AM	0	0	81	1	1	0	83
8:30 AM	0	0	93	2	0	1	96
8:45 AM	0	0	113	0	3	0	116
9:00 AM	0	0	78	0	1	0	79
9:15 AM	0	0	73	0	1	0	74
9:30 AM	0	0	76	1	3	0	80
9:45 AM	0	0	61	0	1	0	62
10:00 AM	0	0	94	0	2	0	96
10:15 AM	0	0	71	1	2	0	74
10:30 AM	0	0	81	0	4	0	85
10:45 AM	0	0	73	1	3	1	78
11:00 AM	1	0	67	0	4	1	73
11:15 AM	0	0	63	0	2	0	65
11:30 AM	0	0	82	0	1	0	83
11:45 AM	0	0	76	0	2	1	79
AM Total	**4**	**0**	**1962**	**11**	**44**	**5**	**2026**
Percentage	**0.20%**	**0.00%**	**96.84%**	**0.54%**	**2.17%**	**0.25%**	
AM Peak	**4:00 AM**	**12:00 AM**	**7:15 AM**	**7:45 AM**	**10:15 AM**	**10:15 AM**	**7:30 AM**
Volume	**1**	**0**	**528**	**5**	**13**	**2**	**537**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	89	0	3	0	92
12:15 PM	0	0	83	0	3	0	86
12:30 PM	0	0	82	0	1	0	83
12:45 PM	0	0	80	0	3	0	83
1:00 PM	0	0	90	0	2	0	92
1:15 PM	0	0	91	0	2	0	93
1:30 PM	0	0	84	0	5	0	89
1:45 PM	0	0	83	0	1	0	84
2:00 PM	0	0	60	0	0	0	60
2:15 PM	0	0	47	0	0	0	47
2:30 PM	0	0	77	0	2	0	79
2:45 PM	0	0	86	0	3	0	89
3:00 PM	0	0	90	1	0	1	92
3:15 PM	0	0	95	2	0	1	98
3:30 PM	0	0	94	1	1	0	96
3:45 PM	0	0	90	0	1	0	91
4:00 PM	0	0	108	0	1	0	109
4:15 PM	1	0	68	0	1	0	70
4:30 PM	0	0	112	0	1	0	113
4:45 PM	0	0	89	0	0	2	91
5:00 PM	0	0	101	0	0	0	101
5:15 PM	0	0	92	0	3	0	95
5:30 PM	0	0	118	1	0	0	119
5:45 PM	0	0	113	0	2	0	115
6:00 PM	0	0	110	0	0	0	110
6:15 PM	0	0	81	0	0	0	81
6:30 PM	0	0	79	1	0	0	80
6:45 PM	0	0	71	0	2	0	73
7:00 PM	0	0	94	0	0	0	94
7:15 PM	0	0	88	0	0	0	88
7:30 PM	0	0	70	0	0	0	70
7:45 PM	0	0	57	0	0	0	57
8:00 PM	0	0	66	0	0	0	66
8:15 PM	0	0	50	0	0	0	50
8:30 PM	0	0	42	0	0	0	42
8:45 PM	0	0	45	0	0	0	45
9:00 PM	0	0	51	0	0	0	51
9:15 PM	0	0	42	0	0	0	42
9:30 PM	0	0	14	0	0	0	14
9:45 PM	0	0	23	0	0	0	23
10:00 PM	0	0	27	0	0	0	27
10:15 PM	0	0	20	0	0	0	20
10:30 PM	0	0	16	0	0	0	16
10:45 PM	0	0	13	0	0	0	13
11:00 PM	0	0	25	0	0	0	25
11:15 PM	0	0	19	0	0	0	19
11:30 PM	0	0	8	0	0	0	8
11:45 PM	0	0	6	0	0	0	6
PM Total	**1**	**0**	**3239**	**6**	**37**	**4**	**3287**
Percentage	**0.03%**	**0.00%**	**98.54%**	**0.18%**	**1.13%**	**0.12%**	
PM Peak	**3:30 PM**	**12:00 PM**	**5:15 PM**	**2:45 PM**	**12:45 PM**	**2:30 PM**	**5:15 PM**
Volume	**1**	**0**	**433**	**4**	**12**	**2**	**439**
Day Total	**5**	**0**	**5201**	**17**	**81**	**9**	**5313**
Percentage	**0.09%**	**0.00%**	**97.89%**	**0.32%**	**1.52%**	**0.17%**	

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: Friday, January 26, 2024
Direction: EB

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	10	0	0	0	10
12:15 AM	0	0	3	0	0	0	3
12:30 AM	0	0	6	0	1	0	7
12:45 AM	0	0	1	0	0	0	1
1:00 AM	0	0	3	0	0	0	3
1:15 AM	0	0	2	0	0	0	2
1:30 AM	0	0	2	0	3	0	5
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	3	0	0	0	3
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	2	0	0	0	2
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	2	0	0	0	2
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	3	0	0	0	3
3:45 AM	0	0	1	0	0	0	1
4:00 AM	0	0	1	0	2	1	4
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	2	1	1	0	4
4:45 AM	0	0	3	0	0	0	3
5:00 AM	0	0	3	0	0	1	4
5:15 AM	0	0	5	0	2	0	7
5:30 AM	0	0	2	0	0	0	2
5:45 AM	0	0	9	0	0	0	9
6:00 AM	0	0	13	0	1	0	14
6:15 AM	0	0	22	0	0	0	22
6:30 AM	0	0	33	0	1	0	34
6:45 AM	0	0	45	3	1	0	49
7:00 AM	0	0	58	0	1	0	59
7:15 AM	0	0	86	0	2	0	88
7:30 AM	0	0	154	0	1	1	156
7:45 AM	0	0	127	2	2	0	131
8:00 AM	0	0	104	0	3	0	107
8:15 AM	0	0	128	0	3	0	131
8:30 AM	0	0	87	2	0	1	90
8:45 AM	0	0	123	1	3	0	127
9:00 AM	0	0	83	0	1	2	86
9:15 AM	0	0	63	1	4	0	68
9:30 AM	0	0	67	0	1	0	68
9:45 AM	0	0	95	0	2	0	97
10:00 AM	0	0	68	0	1	0	69
10:15 AM	0	0	83	0	2	0	85
10:30 AM	0	0	63	0	5	0	68
10:45 AM	1	0	66	0	5	0	72
11:00 AM	0	0	76	0	2	1	79
11:15 AM	0	0	83	0	5	0	88
11:30 AM	0	0	104	1	2	0	107
11:45 AM	0	0	77	0	1	0	78
AM Total	**1**	**0**	**1973**	**11**	**58**	**7**	**2050**
Percentage	**0.05%**	**0.00%**	**96.24%**	**0.54%**	**2.83%**	**0.34%**	
AM Peak	**10:00 AM**	**12:00 AM**	**7:30 AM**	**7:45 AM**	**10:30 AM**	**8:15 AM**	**7:30 AM**
Volume	**1**	**0**	**513**	**4**	**17**	**3**	**525**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	64	0	3	0	67
12:15 PM	0	0	89	0	2	0	91
12:30 PM	0	0	87	0	3	0	90
12:45 PM	0	0	66	0	5	0	71
1:00 PM	0	0	82	0	3	1	86
1:15 PM	0	0	101	0	4	0	105
1:30 PM	0	0	94	0	3	0	97
1:45 PM	0	0	85	0	3	0	88
2:00 PM	0	0	98	0	3	0	101
2:15 PM	0	0	152	1	2	0	155
2:30 PM	0	0	110	0	0	1	111
2:45 PM	0	0	92	0	4	0	96
3:00 PM	0	0	87	0	1	0	88
3:15 PM	0	0	112	1	0	0	113
3:30 PM	0	0	96	1	0	1	98
3:45 PM	0	0	103	0	0	0	103
4:00 PM	0	0	118	0	1	0	119
4:15 PM	0	0	97	0	0	0	97
4:30 PM	0	0	96	1	1	0	98
4:45 PM	0	0	106	0	0	0	106
5:00 PM	0	0	121	0	0	0	121
5:15 PM	0	0	109	0	1	0	110
5:30 PM	0	0	103	0	0	0	103
5:45 PM	1	0	108	0	0	0	109
6:00 PM	0	0	113	1	2	0	116
6:15 PM	0	0	108	0	0	0	108
6:30 PM	0	0	91	0	1	0	92
6:45 PM	0	0	90	0	0	0	90
7:00 PM	0	0	83	1	0	0	84
7:15 PM	0	0	76	0	0	0	76
7:30 PM	0	0	66	0	1	0	67
7:45 PM	0	0	66	1	0	0	67
8:00 PM	0	0	54	0	0	0	54
8:15 PM	0	0	41	0	0	0	41
8:30 PM	0	0	47	0	0	0	47
8:45 PM	0	0	34	0	0	0	34
9:00 PM	0	0	63	0	0	0	63
9:15 PM	0	0	50	0	0	0	50
9:30 PM	0	0	40	0	0	0	40
9:45 PM	0	0	35	0	0	0	35
10:00 PM	0	0	43	0	0	0	43
10:15 PM	0	0	25	0	0	0	25
10:30 PM	0	0	23	0	0	0	23
10:45 PM	0	0	17	0	0	0	17
11:00 PM	0	0	27	0	0	0	27
11:15 PM	0	0	31	0	0	0	31
11:30 PM	0	0	16	0	0	0	16
11:45 PM	0	0	12	0	0	0	12
PM Total	**1**	**0**	**3627**	**7**	**43**	**3**	**3681**
Percentage	**0.03%**	**0.00%**	**98.53%**	**0.19%**	**1.17%**	**0.08%**	
PM Peak	**5:00 PM**	**12:00 PM**	**2:00 PM**	**2:45 PM**	**12:30 PM**	**12:15 PM**	**2:00 PM**
Volume	**1**	**0**	**452**	**2**	**15**	**1**	**463**

Day Total	**2**	**0**	**5600**	**18**	**101**	**10**	**5731**
Percentage	**0.03%**	**0.00%**	**97.71%**	**0.31%**	**1.76%**	**0.17%**	

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PDI File #: 239698 ATR-B

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Count Date: **Saturday, January 27, 2024**
Direction: **EB**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	18	0	0	0	18
12:15 AM	0	0	11	0	0	0	11
12:30 AM	0	0	4	0	0	0	4
12:45 AM	0	0	1	0	0	0	1
1:00 AM	0	0	5	0	0	0	5
1:15 AM	0	0	3	0	0	0	3
1:30 AM	0	0	4	1	0	0	5
1:45 AM	0	0	6	0	1	0	7
2:00 AM	0	0	4	0	2	0	6
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	6	0	0	0	6
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	4	0	0	0	4
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	2	0	0	0	2
3:45 AM	0	0	2	0	0	0	2
4:00 AM	0	0	0	0	0	0	0
4:15 AM	0	0	1	0	0	1	2
4:30 AM	0	0	3	0	0	0	3
4:45 AM	0	0	2	0	0	0	2
5:00 AM	0	0	2	0	0	0	2
5:15 AM	0	0	5	0	1	0	6
5:30 AM	0	0	6	0	0	1	7
5:45 AM	0	0	4	0	0	0	4
6:00 AM	0	0	6	0	1	0	7
6:15 AM	0	0	11	0	0	0	11
6:30 AM	0	0	5	0	0	0	5
6:45 AM	0	0	19	0	0	0	19
7:00 AM	0	0	19	1	3	0	23
7:15 AM	1	0	25	0	0	0	26
7:30 AM	0	0	31	0	1	0	32
7:45 AM	0	0	49	0	0	1	50
8:00 AM	0	0	50	0	1	0	51
8:15 AM	0	0	42	0	0	0	42
8:30 AM	0	0	54	0	0	0	54
8:45 AM	0	0	76	0	1	0	77
9:00 AM	0	0	70	0	1	0	71
9:15 AM	0	0	65	0	0	0	65
9:30 AM	0	0	101	0	0	1	102
9:45 AM	0	0	74	0	0	0	74
10:00 AM	0	0	83	0	0	0	83
10:15 AM	0	0	76	1	0	1	78
10:30 AM	0	0	72	0	2	0	74
10:45 AM	0	0	113	0	0	0	113
11:00 AM	0	0	121	1	1	0	123
11:15 AM	0	0	97	0	0	0	97
11:30 AM	0	0	87	0	0	0	87
11:45 AM	1	0	104	0	5	0	110
AM Total	**2**	**0**	**1545**	**4**	**20**	**5**	**1576**
Percentage	**0.13%**	**0.00%**	**98.03%**	**0.25%**	**1.27%**	**0.32%**	
AM Peak	**6:30 AM**	**12:00 AM**	**10:45 AM**	**10:15 AM**	**11:00 AM**	**9:30 AM**	**10:45 AM**
Volume	**1**	**0**	**418**	**2**	**6**	**2**	**420**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	113	0	3	0	116
12:15 PM	0	0	98	0	1	0	99
12:30 PM	0	0	100	0	0	0	100
12:45 PM	1	0	109	0	1	0	111
1:00 PM	0	0	114	0	2	0	116
1:15 PM	0	0	89	0	0	0	89
1:30 PM	0	0	88	0	0	0	88
1:45 PM	1	0	102	0	0	0	103
2:00 PM	0	0	116	0	1	0	117
2:15 PM	0	0	93	0	1	0	94
2:30 PM	0	0	108	0	0	0	108
2:45 PM	2	0	99	0	1	0	102
3:00 PM	0	0	97	0	1	1	99
3:15 PM	2	0	93	1	1	0	97
3:30 PM	0	0	100	0	1	0	101
3:45 PM	1	0	132	1	0	0	134
4:00 PM	0	0	86	0	0	0	86
4:15 PM	0	0	87	0	0	0	87
4:30 PM	1	0	90	0	2	0	93
4:45 PM	0	0	95	0	0	0	95
5:00 PM	0	0	74	0	1	0	75
5:15 PM	0	0	73	0	1	0	74
5:30 PM	0	0	79	0	0	0	79
5:45 PM	0	0	83	0	0	0	83
6:00 PM	0	0	70	0	0	0	70
6:15 PM	0	0	102	0	1	0	103
6:30 PM	0	0	75	0	0	0	75
6:45 PM	0	0	50	1	1	0	52
7:00 PM	0	0	59	0	0	1	60
7:15 PM	0	0	56	0	0	0	56
7:30 PM	0	0	40	0	1	0	41
7:45 PM	0	0	37	1	0	0	38
8:00 PM	0	0	45	0	0	0	45
8:15 PM	0	0	55	0	0	0	55
8:30 PM	0	0	31	0	0	0	31
8:45 PM	0	0	33	0	2	0	35
9:00 PM	0	0	39	0	0	0	39
9:15 PM	0	0	43	0	0	0	43
9:30 PM	0	0	23	1	0	0	24
9:45 PM	0	0	41	0	0	0	41
10:00 PM	0	0	39	0	0	0	39
10:15 PM	0	0	28	0	0	0	28
10:30 PM	0	0	23	0	0	0	23
10:45 PM	0	0	29	0	0	0	29
11:00 PM	0	0	23	0	0	0	23
11:15 PM	0	0	19	0	0	0	19
11:30 PM	0	0	12	0	0	0	12
11:45 PM	0	0	20	0	0	0	20
PM Total	**8**	**0**	**3310**	**5**	**22**	**2**	**3347**
Percentage	**0.24%**	**0.00%**	**98.89%**	**0.15%**	**0.66%**	**0.06%**	
PM Peak	**2:30 PM**	**12:00 PM**	**3:00 PM**	**3:00 PM**	**12:00 PM**	**2:15 PM**	**3:00 PM**
Volume	**4**	**0**	**422**	**2**	**5**	**1**	**431**
Day Total	**10**	**0**	**4855**	**9**	**42**	**7**	**4923**
Percentage	**0.20%**	**0.00%**	**98.62%**	**0.18%**	**0.85%**	**0.14%**	

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Sunday, January 28, 2024**
Direction: **EB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-B**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	10	0	0	0	10
12:15 AM	0	0	6	0	0	0	6
12:30 AM	0	0	7	0	0	0	7
12:45 AM	0	0	2	0	0	0	2
1:00 AM	0	0	2	0	0	0	2
1:15 AM	0	0	6	0	0	0	6
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	2	0	1	0	3
2:00 AM	0	0	3	0	0	0	3
2:15 AM	0	0	3	1	0	0	4
2:30 AM	0	0	2	0	0	0	2
2:45 AM	0	0	3	0	0	0	3
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	2	0	0	0	2
3:45 AM	0	0	4	0	0	0	4
4:00 AM	0	0	1	0	1	0	2
4:15 AM	0	0	0	0	1	0	1
4:30 AM	0	0	1	0	0	0	1
4:45 AM	0	0	0	1	0	0	1
5:00 AM	0	0	1	0	0	0	1
5:15 AM	0	0	1	0	0	0	1
5:30 AM	0	0	3	0	0	0	3
5:45 AM	0	0	1	0	0	0	1
6:00 AM	0	0	6	0	0	0	6
6:15 AM	0	0	5	0	0	0	5
6:30 AM	0	0	9	0	0	0	9
6:45 AM	0	0	10	0	0	0	10
7:00 AM	0	0	12	0	0	0	12
7:15 AM	0	0	19	0	0	0	19
7:30 AM	0	0	20	0	0	0	20
7:45 AM	0	0	30	0	0	0	30
8:00 AM	0	0	29	0	0	0	29
8:15 AM	0	0	33	0	0	0	33
8:30 AM	0	0	41	0	1	0	42
8:45 AM	0	0	42	0	0	0	42
9:00 AM	0	0	30	0	0	0	30
9:15 AM	0	0	39	1	0	0	40
9:30 AM	0	0	53	1	0	0	54
9:45 AM	0	0	61	0	0	0	61
10:00 AM	0	0	54	0	0	0	54
10:15 AM	0	0	49	0	0	0	49
10:30 AM	1	1	69	0	0	0	71
10:45 AM	0	0	84	0	0	0	84
11:00 AM	0	0	41	0	0	0	41
11:15 AM	0	0	63	0	0	0	63
11:30 AM	0	0	56	0	0	0	56
11:45 AM	0	0	87	0	0	0	87
AM Total	**1**	**1**	**1003**	**4**	**4**	**0**	**1013**
Percentage	**0.10%**	**0.10%**	**99.01%**	**0.39%**	**0.39%**	**0.00%**	
AM Peak	**9:45 AM**	**9:45 AM**	**10:30 AM**	**8:45 AM**	**3:30 AM**	**12:00 AM**	**10:30 AM**
Volume	**1**	**1**	**257**	**2**	**2**	**0**	**259**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	76	1	0	0	77
12:15 PM	0	0	78	0	0	0	78
12:30 PM	0	0	75	1	0	0	76
12:45 PM	0	0	87	0	0	0	87
1:00 PM	0	0	64	0	0	0	64
1:15 PM	0	0	67	0	0	0	67
1:30 PM	0	0	54	0	1	0	55
1:45 PM	0	0	61	0	1	0	62
2:00 PM	0	0	73	0	0	0	73
2:15 PM	0	0	61	0	0	0	61
2:30 PM	0	0	54	0	0	0	54
2:45 PM	0	0	72	0	0	0	72
3:00 PM	0	0	89	0	1	0	90
3:15 PM	0	0	53	1	1	0	55
3:30 PM	0	0	58	0	1	0	59
3:45 PM	0	0	67	0	0	0	67
4:00 PM	0	0	69	0	0	0	69
4:15 PM	0	0	56	0	0	0	56
4:30 PM	0	0	51	0	0	0	51
4:45 PM	0	0	73	0	0	0	73
5:00 PM	0	0	54	0	0	0	54
5:15 PM	0	0	49	0	2	0	51
5:30 PM	0	0	50	1	0	0	51
5:45 PM	0	0	61	0	1	0	62
6:00 PM	0	0	58	0	0	0	58
6:15 PM	0	0	64	0	0	0	64
6:30 PM	0	0	49	0	0	0	49
6:45 PM	0	0	48	0	0	0	48
7:00 PM	0	0	50	0	0	0	50
7:15 PM	0	0	44	0	0	0	44
7:30 PM	0	0	34	0	0	0	34
7:45 PM	0	0	28	0	0	0	28
8:00 PM	0	0	36	0	1	0	37
8:15 PM	0	0	32	0	0	0	32
8:30 PM	0	0	22	0	0	0	22
8:45 PM	0	0	25	0	1	0	26
9:00 PM	0	0	17	0	0	1	18
9:15 PM	0	0	14	0	0	0	14
9:30 PM	0	0	8	0	0	0	8
9:45 PM	0	0	12	0	0	0	12
10:00 PM	0	0	17	0	0	0	17
10:15 PM	0	0	9	0	0	0	9
10:30 PM	0	0	10	0	1	0	11
10:45 PM	0	0	5	0	1	0	6
11:00 PM	0	0	12	0	2	0	14
11:15 PM	0	0	11	0	0	0	11
11:30 PM	0	0	5	0	0	0	5
11:45 PM	0	0	3	0	1	0	4
PM Total	**0**	**0**	**2165**	**4**	**15**	**1**	**2185**
Percentage	**0.00%**	**0.00%**	**99.08%**	**0.18%**	**0.69%**	**0.05%**	
PM Peak	**12:00 PM**	**12:00 PM**	**12:00 PM**	**12:00 PM**	**10:15 PM**	**8:15 PM**	**12:00 PM**
Volume	**0**	**0**	**316**	**2**	**4**	**1**	**318**
Day Total	**1**	**1**	**3168**	**8**	**19**	**1**	**3198**
Percentage	**0.03%**	**0.03%**	**99.06%**	**0.25%**	**0.59%**	**0.03%**	

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Monday, January 29, 2024**
Direction: **EB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-B**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	6	0	0	0	6
12:15 AM	0	0	3	0	0	0	3
12:30 AM	0	0	2	1	1	0	4
12:45 AM	0	0	4	0	1	0	5
1:00 AM	0	0	3	0	1	0	4
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	2	0	0	0	2
1:45 AM	0	0	1	0	2	0	3
2:00 AM	0	0	1	0	1	0	2
2:15 AM	0	0	3	0	1	0	4
2:30 AM	0	0	4	0	1	0	5
2:45 AM	0	0	0	0	1	0	1
3:00 AM	0	0	3	0	2	0	5
3:15 AM	0	0	3	0	0	0	3
3:30 AM	0	0	5	0	1	1	7
3:45 AM	0	0	1	0	0	0	1
4:00 AM	0	0	2	0	1	0	3
4:15 AM	0	0	2	0	0	0	2
4:30 AM	0	0	5	0	0	0	5
4:45 AM	0	0	4	0	2	0	6
5:00 AM	0	0	1	0	1	0	2
5:15 AM	0	0	6	0	2	0	8
5:30 AM	0	0	11	0	1	0	12
5:45 AM	0	0	26	0	3	0	29
6:00 AM	0	0	14	0	0	1	15
6:15 AM	0	0	22	0	1	0	23
6:30 AM	0	0	40	1	2	0	43
6:45 AM	0	0	45	2	5	0	52
7:00 AM	0	0	55	0	2	1	58
7:15 AM	0	0	104	0	1	1	106
7:30 AM	0	0	196	0	1	0	197
7:45 AM	0	0	118	1	3	0	122
8:00 AM	0	0	92	0	1	0	93
8:15 AM	0	0	103	0	1	1	105
8:30 AM	0	0	84	2	3	0	89
8:45 AM	0	0	91	1	2	0	94
9:00 AM	0	0	89	0	4	0	93
9:15 AM	0	0	82	0	0	0	82
9:30 AM	0	0	63	0	1	0	64
9:45 AM	0	0	69	0	2	0	71
10:00 AM	0	0	53	0	3	1	57
10:15 AM	0	0	48	0	1	0	49
10:30 AM	0	0	57	0	3	0	60
10:45 AM	0	0	73	0	7	0	80
11:00 AM	0	0	77	0	2	0	79
11:15 AM	0	0	58	0	2	0	60
11:30 AM	0	0	87	0	4	0	91
11:45 AM	0	0	81	0	2	0	83
AM Total	**0**	**0**	**1900**	**8**	**75**	**6**	**1989**
Percentage	**0.00%**	**0.00%**	**95.53%**	**0.40%**	**3.77%**	**0.30%**	
AM Peak	**12:00 AM**	**12:00 AM**	**7:15 AM**	**6:00 AM**	**10:45 AM**	**6:30 AM**	**7:15 AM**
Volume	**0**	**0**	**510**	**3**	**15**	**2**	**518**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	81	0	2	0	83
12:15 PM	0	0	77	0	1	1	79
12:30 PM	0	0	72	0	3	0	75
12:45 PM	0	0	64	0	2	1	67
1:00 PM	0	0	71	0	2	0	73
1:15 PM	0	0	84	0	2	0	86
1:30 PM	0	0	82	0	1	0	83
1:45 PM	0	0	73	0	3	0	76
2:00 PM	0	0	86	0	3	0	89
2:15 PM	0	0	115	1	1	0	117
2:30 PM	0	0	100	0	0	0	100
2:45 PM	0	0	85	0	0	0	85
3:00 PM	0	0	92	0	0	0	92
3:15 PM	0	0	107	1	4	0	112
3:30 PM	0	0	106	1	0	0	107
3:45 PM	0	0	99	0	0	0	99
4:00 PM	0	0	100	0	1	0	101
4:15 PM	0	0	117	1	0	0	118
4:30 PM	0	0	113	0	0	0	113
4:45 PM	0	0	93	0	0	0	93
5:00 PM	0	0	101	0	1	0	102
5:15 PM	0	0	91	0	3	0	94
5:30 PM	1	0	108	0	0	0	109
5:45 PM	0	0	80	0	1	0	81
6:00 PM	0	0	94	0	0	0	94
6:15 PM	0	0	84	0	0	0	84
6:30 PM	0	0	91	1	1	0	93
6:45 PM	1	0	81	0	1	0	83
7:00 PM	0	0	59	0	0	0	59
7:15 PM	0	0	44	0	1	0	45
7:30 PM	0	0	48	0	0	0	48
7:45 PM	0	0	64	0	0	0	64
8:00 PM	0	0	47	0	0	0	47
8:15 PM	0	0	28	0	2	0	30
8:30 PM	0	0	36	0	0	0	36
8:45 PM	0	0	43	0	0	0	43
9:00 PM	0	0	44	0	0	0	44
9:15 PM	0	0	29	0	0	0	29
9:30 PM	0	0	12	0	0	0	12
9:45 PM	0	0	18	1	0	0	19
10:00 PM	0	0	8	0	0	0	8
10:15 PM	0	0	11	0	0	0	11
10:30 PM	0	0	11	0	0	0	11
10:45 PM	0	0	8	0	0	0	8
11:00 PM	0	0	17	0	0	0	17
11:15 PM	0	0	9	0	0	0	9
11:30 PM	0	0	9	0	0	0	9
11:45 PM	0	0	1	0	0	0	1
PM Total	**2**	**0**	**3093**	**6**	**35**	**2**	**3138**
Percentage	**0.06%**	**0.00%**	**98.57%**	**0.19%**	**1.12%**	**0.06%**	
PM Peak	**4:45 PM**	**12:00 PM**	**3:45 PM**	**2:45 PM**	**12:30 PM**	**12:00 PM**	**3:45 PM**
Volume	**1**	**0**	**429**	**2**	**9**	**2**	**431**
Day Total	**2**	**0**	**4993**	**14**	**110**	**8**	**5127**
Percentage	**0.04%**	**0.00%**	**97.39%**	**0.27%**	**2.15%**	**0.16%**	

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File # **239698 ATR-B**

Direction: **WB**

Weekly Report

Day	Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Monday		Week Ave	
Date	01/23/24		01/24/24		01/25/24		01/26/24		01/27/24		01/28/24		01/29/24			
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	5	100	1	75	4	85	1	100	7	113	8	58	2	93	4	89
12:15	1	79	4	108	1	90	2	99	9	100	7	69	1	91	4	91
12:30	2	96	1	96	1	97	3	101	6	113	5	69	4	77	3	93
12:45	0	96	1	89	1	80	1	88	3	96	7	77	2	97	2	89
1:00	0	92	3	83	2	86	2	91	1	132	4	66	1	79	2	90
1:15	2	81	2	84	1	72	4	95	0	99	3	65	4	68	2	81
1:30	1	86	0	90	3	102	2	89	0	103	2	70	1	67	1	87
1:45	0	93	0	79	1	79	1	107	3	118	2	81	5	86	2	92
2:00	1	97	2	82	0	72	1	86	0	97	2	52	2	83	1	81
2:15	1	100	3	99	0	74	0	104	1	105	4	73	3	87	2	92
2:30	1	132	2	107	1	105	3	127	0	91	0	85	8	101	2	107
2:45	2	141	2	137	1	105	1	140	2	107	1	74	5	130	2	119
3:00	0	114	0	114	0	100	1	117	1	109	0	69	11	107	2	104
3:15	0	128	4	116	1	83	0	125	2	85	1	49	5	102	2	98
3:30	1	94	1	108	0	104	2	99	1	106	1	62	5	104	2	97
3:45	5	107	3	114	3	85	4	133	3	93	3	62	2	98	3	99
4:00	2	105	3	112	4	90	2	105	2	83	0	57	5	82	3	91
4:15	4	103	5	86	1	63	2	102	0	79	2	49	1	89	2	82
4:30	2	127	5	106	5	109	2	118	1	80	2	50	3	81	3	96
4:45	3	108	6	100	7	95	9	103	3	78	5	64	8	99	6	92
5:00	6	108	8	122	7	113	8	107	6	100	2	43	10	93	7	98
5:15	18	105	18	107	16	125	14	130	3	67	4	37	20	106	13	97
5:30	34	120	21	98	26	106	21	118	4	72	3	59	24	108	19	97
5:45	28	90	42	109	37	147	31	118	13	75	9	51	29	101	27	99
6:00	23	93	21	110	19	108	22	89	17	85	7	40	18	88	18	88
6:15	40	88	38	72	38	87	41	104	16	76	12	57	51	77	34	80
6:30	38	69	42	79	37	78	49	94	19	78	14	48	53	78	36	75
6:45	76	77	66	75	56	71	57	107	21	63	16	51	50	76	49	74
7:00	43	72	54	67	42	60	44	73	31	56	16	38	43	78	39	63
7:15	87	55	77	78	82	78	81	73	35	64	18	48	82	54	66	64
7:30	112	50	108	56	104	45	119	64	52	46	19	26	116	54	90	49
7:45	158	44	135	56	151	46	141	61	55	50	26	31	160	51	118	48
8:00	134	37	142	39	128	58	116	47	50	33	30	25	148	41	107	40
8:15	136	48	135	49	108	53	139	60	74	33	37	30	134	35	109	44
8:30	122	34	128	35	115	30	128	40	57	37	35	24	125	28	101	33
8:45	139	36	130	25	127	49	139	36	68	25	38	20	93	31	105	32
9:00	125	46	90	33	114	46	86	39	79	34	58	17	98	43	93	37
9:15	121	25	110	31	105	43	76	31	84	36	56	11	92	19	92	28
9:30	103	19	112	33	84	33	104	35	78	22	57	9	71	14	87	24
9:45	94	13	90	16	107	15	97	30	107	32	47	10	77	18	88	19
10:00	83	12	74	30	76	16	73	38	122	28	66	9	76	10	81	20
10:15	83	8	80	8	100	17	73	19	119	19	49	6	55	8	80	12
10:30	96	10	67	11	89	14	67	22	102	17	71	10	69	11	80	14
10:45	87	11	78	9	90	15	85	21	104	20	54	7	71	7	81	13
11:00	73	6	83	3	87	10	94	9	96	12	92	10	78	6	86	8
11:15	94	3	80	11	78	5	91	12	95	14	56	3	68	6	80	8
11:30	81	3	101	5	85	6	96	10	115	18	82	2	75	4	91	7
11:45	82	12	114	6	83	4	95	13	114	17	81	4	81	2	93	8
Total	**2349**	**3373**	**2292**	**3358**	**2228**	**3254**	**2230**	**3729**	**1781**	**3216**	**1114**	**2027**	**2145**	**3068**	**2020**	**3146**
Day Total	**5722**		**5650**		**5482**		**5959**		**4997**		**3141**		**5213**		**5166**	
Peak HR	**7:45 AM**	**2:30 PM**	**7:45 AM**	**2:45 PM**	**7:45 AM**	**5:00 PM**	**7:45 AM**	**2:30 PM**	**9:45 AM**	**1:00 PM**	**11:00 AM**	**2:15 PM**	**7:45 AM**	**2:45 PM**	**7:45 AM**	**2:30 PM**
Volume	**550**	**515**	**540**	**475**	**502**	**491**	**524**	**509**	**450**	**452**	**311**	**301**	**567**	**443**	**435**	**429**

Great Plain Avenue (Route 135)
e/o Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File # **239698 ATR-B**

Direction: **EB**

Weekly Report

Day	Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Monday		Week Ave	
Date	01/23/24		01/24/24		01/25/24		01/26/24		01/27/24		01/28/24		01/29/24			
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	0	101	9	64	1	92	10	67	18	116	10	77	6	83	8	86
12:15	2	79	4	95	4	86	3	91	11	99	6	78	3	79	5	87
12:30	4	93	5	76	4	83	7	90	4	100	7	76	4	75	5	85
12:45	0	99	3	95	4	83	1	71	1	111	2	87	5	67	2	88
1:00	2	71	5	83	1	92	3	86	5	116	2	64	4	73	3	84
1:15	2	95	3	65	2	93	2	105	3	89	6	67	1	86	3	86
1:30	1	88	4	87	1	89	5	97	5	88	1	55	2	83	3	84
1:45	0	97	4	107	1	84	0	88	7	103	3	62	3	76	3	88
2:00	1	103	1	92	1	60	3	101	6	117	3	73	2	89	2	91
2:15	0	127	6	97	0	47	0	155	0	94	4	61	4	117	2	100
2:30	0	104	1	124	0	79	2	111	6	108	2	54	5	100	2	97
2:45	0	131	5	108	0	89	1	96	1	102	3	72	1	85	2	98
3:00	0	112	2	129	2	92	2	88	4	99	0	90	5	92	2	100
3:15	0	115	2	108	2	98	1	113	1	97	0	55	3	112	1	100
3:30	3	140	6	123	2	96	3	98	2	101	2	59	7	107	4	103
3:45	1	114	4	92	1	91	1	103	2	134	4	67	1	99	2	100
4:00	4	110	4	111	2	109	4	119	0	86	2	69	3	101	3	101
4:15	1	112	4	107	2	70	0	97	2	87	1	56	2	118	2	92
4:30	4	138	4	99	3	113	4	98	3	93	1	51	5	113	3	101
4:45	4	106	5	103	3	91	3	106	2	95	1	73	6	93	3	95
5:00	2	101	6	108	3	101	4	121	2	75	1	54	2	102	3	95
5:15	3	102	8	115	3	95	7	110	6	74	1	51	8	94	5	92
5:30	11	126	12	109	8	119	2	103	7	79	3	51	12	109	8	99
5:45	18	115	11	121	14	115	9	109	4	83	1	62	29	81	12	98
6:00	21	87	25	99	16	110	14	116	7	70	6	58	15	94	15	91
6:15	20	86	21	100	30	81	22	108	11	103	5	64	23	84	19	89
6:30	35	81	31	84	34	80	34	92	5	75	9	49	43	93	27	79
6:45	42	86	61	96	56	73	49	90	19	52	10	48	52	83	41	75
7:00	81	75	56	61	67	94	59	84	23	60	12	50	58	59	51	69
7:15	124	72	116	58	82	88	88	76	26	56	19	44	106	45	80	63
7:30	175	67	185	70	188	70	156	67	32	41	20	34	197	48	136	57
7:45	152	46	138	54	135	57	131	67	50	38	30	28	122	64	108	51
8:00	105	47	115	59	131	66	107	54	51	45	29	37	93	47	90	51
8:15	101	46	90	48	83	50	131	41	42	55	33	32	105	30	84	43
8:30	112	44	81	38	96	42	90	47	54	31	42	22	89	36	81	37
8:45	110	29	117	32	116	45	127	34	77	35	42	26	94	43	98	35
9:00	81	36	109	36	79	51	86	63	71	39	30	18	93	44	78	41
9:15	77	29	85	28	74	42	68	50	65	43	40	14	82	29	70	34
9:30	88	28	80	27	80	14	68	40	102	24	54	8	64	12	77	22
9:45	71	16	91	25	62	23	97	35	74	41	61	12	71	19	75	24
10:00	94	15	55	20	96	27	69	43	83	39	54	17	57	8	73	24
10:15	64	15	64	16	74	20	85	25	78	28	49	9	49	11	66	18
10:30	59	9	60	12	85	16	68	23	74	23	71	11	60	11	68	15
10:45	73	12	65	11	78	13	72	17	113	29	84	6	80	8	81	14
11:00	74	14	78	16	73	25	79	27	123	23	41	14	79	17	78	19
11:15	74	17	89	22	65	19	88	31	97	19	63	11	60	9	77	18
11:30	86	4	95	4	83	8	107	16	87	12	56	5	91	9	86	8
11:45	80	5	87	8	79	6	78	12	110	20	87	4	83	1	86	8
Total	**2062**	**3545**	**2112**	**3442**	**2026**	**3287**	**2050**	**3681**	**1576**	**3347**	**1013**	**2185**	**1989**	**3138**	**1833**	**3232**
Day Total	**5607**		**5554**		**5313**		**5731**		**4923**		**3198**		**5127**		**5065**	
Peak HR	**7:15 AM**	**2:45 PM**	**7:15 AM**	**2:30 PM**	**7:30 AM**	**5:15 PM**	**7:30 AM**	**2:00 PM**	**10:45 AM**	**3:00 PM**	**10:30 AM**	**12:00 PM**	**7:15 AM**	**3:45 PM**	**7:30 AM**	**3:15 PM**
Volume	**556**	**498**	**554**	**469**	**537**	**439**	**525**	**463**	**420**	**431**	**259**	**318**	**518**	**431**	**418**	**404**

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Tuesday, January 23, 2024**
Direction: **NB**

PDI File #: **239698 ATR-C**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	0	0	1
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	1	0	1	0	2
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	1	0	1	0	2
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	1	0	1
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	1	0	1
3:00 AM	0	0	1	0	0	0	1
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	0	0	0	0	0
3:45 AM	0	0	2	0	0	0	2
4:00 AM	0	0	3	0	0	0	3
4:15 AM	0	0	1	0	0	0	1
4:30 AM	0	0	0	0	0	0	0
4:45 AM	0	0	1	0	1	0	2
5:00 AM	0	0	3	0	0	0	3
5:15 AM	0	0	4	0	0	0	4
5:30 AM	0	0	5	0	1	0	6
5:45 AM	0	0	10	0	3	0	13
6:00 AM	0	0	13	0	0	0	13
6:15 AM	0	0	15	1	2	0	18
6:30 AM	0	0	16	0	1	0	17
6:45 AM	0	0	35	1	2	0	38
7:00 AM	0	0	41	0	2	0	43
7:15 AM	0	0	42	2	3	2	49
7:30 AM	0	0	50	0	5	1	56
7:45 AM	0	0	71	1	3	1	76
8:00 AM	0	0	49	1	2	2	54
8:15 AM	0	0	60	1	2	1	64
8:30 AM	0	0	79	0	3	0	82
8:45 AM	0	0	67	0	0	0	67
9:00 AM	0	0	54	1	2	0	57
9:15 AM	0	0	63	0	1	0	64
9:30 AM	0	0	66	1	2	0	69
9:45 AM	0	0	61	0	0	0	61
10:00 AM	0	0	44	1	3	0	48
10:15 AM	0	0	49	0	0	0	49
10:30 AM	0	0	42	0	2	0	44
10:45 AM	0	0	49	1	3	0	53
11:00 AM	0	0	45	0	2	0	47
11:15 AM	0	0	49	0	2	0	51
11:30 AM	0	0	49	1	1	0	51
11:45 AM	0	0	56	1	1	0	58
AM Total	**0**	**0**	**1202**	**13**	**53**	**7**	**1275**
Percentage	**0.00%**	**0.00%**	**94.27%**	**1.02%**	**4.16%**	**0.55%**	
AM Peak	**12:00 AM**	**12:00 AM**	**8:30 AM**	**7:15 AM**	**7:00 AM**	**7:15 AM**	**7:45 AM**
Volume	**0**	**0**	**263**	**4**	**13**	**6**	**276**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	59	0	2	0	61
12:15 PM	0	0	53	0	2	0	55
12:30 PM	0	0	52	1	1	0	54
12:45 PM	0	0	42	0	3	0	45
1:00 PM	0	0	48	0	1	0	49
1:15 PM	0	0	59	1	1	0	61
1:30 PM	0	0	78	0	1	0	79
1:45 PM	0	0	57	0	0	0	57
2:00 PM	0	0	44	0	4	1	49
2:15 PM	0	0	53	1	1	0	55
2:30 PM	0	0	55	0	1	0	56
2:45 PM	0	0	48	1	1	0	50
3:00 PM	0	0	57	1	0	0	58
3:15 PM	0	0	58	0	0	0	58
3:30 PM	0	0	45	0	3	0	48
3:45 PM	0	0	57	0	1	0	58
4:00 PM	0	0	66	1	1	0	68
4:15 PM	0	0	57	0	2	0	59
4:30 PM	0	0	48	0	1	0	49
4:45 PM	0	0	59	1	0	0	60
5:00 PM	0	0	62	0	1	0	63
5:15 PM	0	0	59	0	0	0	59
5:30 PM	0	0	40	1	1	0	42
5:45 PM	0	0	42	0	2	0	44
6:00 PM	0	0	37	1	0	0	38
6:15 PM	0	0	34	0	0	0	34
6:30 PM	0	0	29	0	1	0	30
6:45 PM	0	0	30	1	1	0	32
7:00 PM	0	0	34	0	0	0	34
7:15 PM	0	0	28	1	0	0	29
7:30 PM	0	0	26	0	1	0	27
7:45 PM	1	0	24	1	0	0	26
8:00 PM	0	0	18	0	0	0	18
8:15 PM	0	0	20	0	0	0	20
8:30 PM	0	0	12	0	0	0	12
8:45 PM	0	0	17	0	0	0	17
9:00 PM	0	0	13	0	0	0	13
9:15 PM	0	0	10	0	0	0	10
9:30 PM	0	0	9	0	0	0	9
9:45 PM	0	0	11	0	0	0	11
10:00 PM	0	0	1	0	0	0	1
10:15 PM	0	0	6	0	0	0	6
10:30 PM	0	0	2	0	0	0	2
10:45 PM	0	0	8	0	0	0	8
11:00 PM	0	0	6	0	0	0	6
11:15 PM	0	0	2	0	0	0	2
11:30 PM	0	0	5	0	0	0	5
11:45 PM	0	0	3	0	1	0	4
PM Total	**1**	**0**	**1683**	**12**	**34**	**1**	**1731**
Percentage	**0.06%**	**0.00%**	**97.23%**	**0.69%**	**1.96%**	**0.06%**	
PM Peak	**7:00 PM**	**12:00 PM**	**1:00 PM**	**2:15 PM**	**12:00 PM**	**1:15 PM**	**1:00 PM**
Volume	**1**	**0**	**242**	**3**	**8**	**1**	**246**
Day Total	**1**	**0**	**2885**	**25**	**87**	**8**	**3006**
Percentage	**0.03%**	**0.00%**	**95.97%**	**0.83%**	**2.89%**	**0.27%**	

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Wednesday, January 24, 2024**
Direction: **NB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-C**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	0	0	1
12:15 AM	0	0	2	0	0	0	2
12:30 AM	0	0	0	0	0	0	0
12:45 AM	0	0	2	0	0	0	2
1:00 AM	0	0	1	0	0	0	1
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	3	0	0	0	3
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	2	0	0	0	2
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	0	0	0	0	0
3:45 AM	0	0	2	0	0	0	2
4:00 AM	0	0	3	0	0	0	3
4:15 AM	0	0	1	0	0	0	1
4:30 AM	0	0	2	0	0	0	2
4:45 AM	0	0	2	0	0	0	2
5:00 AM	0	0	6	0	1	0	7
5:15 AM	0	0	5	0	2	1	8
5:30 AM	0	0	5	0	3	0	8
5:45 AM	0	0	12	0	3	1	16
6:00 AM	0	0	11	0	0	0	11
6:15 AM	0	0	18	1	1	0	20
6:30 AM	0	0	18	0	1	0	19
6:45 AM	0	0	31	1	4	0	36
7:00 AM	0	0	31	0	6	0	37
7:15 AM	0	0	47	1	7	0	55
7:30 AM	0	0	57	0	1	0	58
7:45 AM	0	0	72	2	3	2	79
8:00 AM	0	0	60	0	2	0	62
8:15 AM	0	0	63	1	0	0	64
8:30 AM	0	0	65	0	6	0	71
8:45 AM	0	0	64	0	4	0	68
9:00 AM	0	0	62	1	1	0	64
9:15 AM	0	0	50	0	4	0	54
9:30 AM	0	0	43	1	2	0	46
9:45 AM	0	0	59	0	2	0	61
10:00 AM	0	0	37	2	0	0	39
10:15 AM	0	0	48	0	3	0	51
10:30 AM	0	0	38	0	0	0	38
10:45 AM	0	0	50	1	3	1	55
11:00 AM	0	0	46	0	1	0	47
11:15 AM	0	0	41	0	3	0	44
11:30 AM	0	0	37	0	3	0	40
11:45 AM	0	0	65	1	2	0	68
AM Total	**0**	**0**	**1165**	**12**	**68**	**5**	**1250**
Percentage	**0.00%**	**0.00%**	**93.20%**	**0.96%**	**5.44%**	**0.40%**	
AM Peak	**12:00 AM**	**12:00 AM**	**7:45 AM**	**7:00 AM**	**6:30 AM**	**5:00 AM**	**7:45 AM**
Volume	**0**	**0**	**260**	**3**	**18**	**2**	**276**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	50	0	0	0	50
12:15 PM	0	0	49	0	2	0	51
12:30 PM	0	0	52	1	2	0	55
12:45 PM	0	0	48	0	2	1	51
1:00 PM	0	0	50	0	1	0	51
1:15 PM	0	0	59	1	2	0	62
1:30 PM	0	0	51	0	1	0	52
1:45 PM	0	0	41	0	0	0	41
2:00 PM	0	0	50	0	1	0	51
2:15 PM	0	0	59	1	1	0	61
2:30 PM	0	0	48	0	1	0	49
2:45 PM	0	0	47	0	1	0	48
3:00 PM	0	0	35	1	0	0	36
3:15 PM	0	0	41	0	1	0	42
3:30 PM	0	0	60	0	1	0	61
3:45 PM	0	0	52	0	1	1	54
4:00 PM	0	0	59	1	2	0	62
4:15 PM	0	0	46	0	0	0	46
4:30 PM	0	0	50	0	2	0	52
4:45 PM	0	0	52	1	1	0	54
5:00 PM	0	0	60	0	0	0	60
5:15 PM	0	0	44	0	0	0	44
5:30 PM	0	0	56	1	0	0	57
5:45 PM	0	0	41	0	1	0	42
6:00 PM	0	0	46	0	0	0	46
6:15 PM	0	0	42	1	0	0	43
6:30 PM	0	0	35	0	0	0	35
6:45 PM	0	0	34	1	1	0	36
7:00 PM	0	0	24	0	0	0	24
7:15 PM	0	0	32	1	1	0	34
7:30 PM	0	0	19	0	0	0	19
7:45 PM	0	0	28	1	0	0	29
8:00 PM	0	0	17	0	0	0	17
8:15 PM	0	0	14	0	0	0	14
8:30 PM	0	0	15	0	0	0	15
8:45 PM	0	0	21	0	0	0	21
9:00 PM	0	0	19	0	0	0	19
9:15 PM	0	0	13	0	0	0	13
9:30 PM	0	0	12	0	0	0	12
9:45 PM	0	0	9	0	0	0	9
10:00 PM	0	0	9	0	0	0	9
10:15 PM	0	0	11	0	0	0	11
10:30 PM	0	0	7	0	1	0	8
10:45 PM	0	0	1	0	0	0	1
11:00 PM	0	0	8	0	0	0	8
11:15 PM	0	0	4	0	0	0	4
11:30 PM	0	0	6	0	0	0	6
11:45 PM	0	0	5	0	0	0	5
PM Total	**0**	**0**	**1631**	**11**	**26**	**2**	**1670**
Percentage	**0.00%**	**0.00%**	**97.66%**	**0.66%**	**1.56%**	**0.12%**	
PM Peak	**12:00 PM**	**12:00 PM**	**3:30 PM**	**12:30 PM**	**12:15 PM**	**12:00 PM**	**3:30 PM**
Volume	**0**	**0**	**217**	**2**	**7**	**1**	**223**
Day Total	**0**	**0**	**2796**	**23**	**94**	**7**	**2920**
Percentage	**0.00%**	**0.00%**	**95.75%**	**0.79%**	**3.22%**	**0.24%**	

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Thursday, January 25, 2024**
Direction: **NB**

PDI File #: **239698 ATR-C**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	0	0	1
12:15 AM	0	0	3	0	0	0	3
12:30 AM	0	0	5	0	1	0	6
12:45 AM	0	0	1	0	0	0	1
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	2	0	0	0	2
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0
4:00 AM	0	0	3	0	1	0	4
4:15 AM	0	0	1	0	0	0	1
4:30 AM	0	0	1	0	0	0	1
4:45 AM	0	0	1	0	0	0	1
5:00 AM	0	0	2	0	2	0	4
5:15 AM	0	0	5	0	0	1	6
5:30 AM	0	0	7	0	1	0	8
5:45 AM	0	0	11	0	0	1	12
6:00 AM	0	0	10	0	2	0	12
6:15 AM	0	0	20	1	2	1	24
6:30 AM	0	0	19	0	1	1	21
6:45 AM	0	0	32	1	0	0	33
7:00 AM	0	0	34	0	2	0	36
7:15 AM	0	0	47	1	1	0	49
7:30 AM	0	0	67	0	2	2	71
7:45 AM	0	0	64	1	6	6	77
8:00 AM	0	0	63	1	4	0	68
8:15 AM	0	0	48	1	2	0	51
8:30 AM	0	0	73	0	4	0	77
8:45 AM	0	0	63	0	3	1	67
9:00 AM	0	0	67	2	1	0	70
9:15 AM	0	0	60	0	4	1	65
9:30 AM	0	0	54	1	1	0	56
9:45 AM	0	0	46	0	2	0	48
10:00 AM	0	0	34	1	1	0	36
10:15 AM	0	0	62	0	1	0	63
10:30 AM	0	0	47	0	1	0	48
10:45 AM	0	0	55	1	2	0	58
11:00 AM	0	0	46	0	1	0	47
11:15 AM	0	0	58	0	3	2	63
11:30 AM	0	0	52	0	1	0	53
11:45 AM	0	0	54	1	0	0	55
AM Total	**0**	**0**	**1220**	**12**	**52**	**16**	**1300**
Percentage	**0.00%**	**0.00%**	**93.85%**	**0.92%**	**4.00%**	**1.23%**	
AM Peak	**12:00 AM**	**12:00 AM**	**8:30 AM**	**7:15 AM**	**7:45 AM**	**7:00 AM**	**8:30 AM**
Volume	**0**	**0**	**263**	**3**	**16**	**8**	**279**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	59	0	1	0	60
12:15 PM	0	0	60	0	0	0	60
12:30 PM	0	0	69	1	1	0	71
12:45 PM	0	1	56	0	3	0	60
1:00 PM	0	0	46	0	2	1	49
1:15 PM	0	0	52	1	1	0	54
1:30 PM	0	0	58	0	2	0	60
1:45 PM	0	0	58	0	0	0	58
2:00 PM	0	0	52	0	1	0	53
2:15 PM	0	0	71	1	0	0	72
2:30 PM	0	0	62	0	0	1	63
2:45 PM	0	0	55	0	0	1	56
3:00 PM	0	0	64	1	0	0	65
3:15 PM	0	0	45	0	2	0	47
3:30 PM	0	0	52	0	2	0	54
3:45 PM	1	0	59	0	0	0	60
4:00 PM	0	0	53	1	1	0	55
4:15 PM	0	0	47	1	1	0	49
4:30 PM	0	0	52	0	1	0	53
4:45 PM	0	0	42	1	0	0	43
5:00 PM	0	0	42	0	0	0	42
5:15 PM	0	0	49	0	0	0	49
5:30 PM	0	0	45	2	0	1	48
5:45 PM	0	0	43	0	0	0	43
6:00 PM	0	0	50	1	0	0	51
6:15 PM	0	0	39	0	0	1	40
6:30 PM	0	0	42	0	0	0	42
6:45 PM	0	0	26	1	0	0	27
7:00 PM	0	0	38	0	1	0	39
7:15 PM	0	0	32	1	0	0	33
7:30 PM	0	0	42	0	0	0	42
7:45 PM	0	0	25	1	0	0	26
8:00 PM	0	0	14	0	0	0	14
8:15 PM	0	0	16	0	1	0	17
8:30 PM	0	0	23	0	0	0	23
8:45 PM	0	0	13	0	0	0	13
9:00 PM	0	0	23	0	0	0	23
9:15 PM	0	0	9	0	0	0	9
9:30 PM	0	0	8	0	0	0	8
9:45 PM	0	0	8	0	0	0	8
10:00 PM	0	0	7	0	0	0	7
10:15 PM	0	0	4	0	0	0	4
10:30 PM	0	0	8	0	0	0	8
10:45 PM	0	0	5	0	0	0	5
11:00 PM	0	0	3	0	0	0	3
11:15 PM	0	0	4	0	0	0	4
11:30 PM	0	0	3	0	0	0	3
11:45 PM	0	0	2	0	0	0	2
PM Total	**1**	**1**	**1735**	**13**	**20**	**5**	**1775**
Percentage	**0.06%**	**0.06%**	**97.75%**	**0.73%**	**1.13%**	**0.28%**	
PM Peak	**3:00 PM**	**12:00 PM**	**2:15 PM**	**4:00 PM**	**12:45 PM**	**2:00 PM**	**2:15 PM**
Volume	**1**	**1**	**252**	**3**	**8**	**2**	**256**
Day Total	**1**	**1**	**2955**	**25**	**72**	**21**	**3075**
Percentage	**0.03%**	**0.03%**	**96.10%**	**0.81%**	**2.34%**	**0.68%**	

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C

Count Date: Friday, January 26, 2024
Direction: NB

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	4	0	0	0	4
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	2	0	0	0	2
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	2	0	0	0	2
1:30 AM	0	0	3	0	0	0	3
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	1	0	1
2:15 AM	0	0	1	0	0	0	1
2:30 AM	0	0	1	0	1	0	2
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	0	0	1	0	1
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0
4:15 AM	0	0	1	0	0	0	1
4:30 AM	0	0	2	0	0	0	2
4:45 AM	0	0	2	0	0	0	2
5:00 AM	0	0	2	0	0	0	2
5:15 AM	0	0	5	0	0	1	6
5:30 AM	0	0	3	0	2	1	6
5:45 AM	0	0	8	0	1	1	10
6:00 AM	0	0	8	0	2	0	10
6:15 AM	0	0	14	1	0	1	16
6:30 AM	0	0	24	0	1	0	25
6:45 AM	0	0	30	1	2	0	33
7:00 AM	0	0	24	0	2	0	26
7:15 AM	0	0	44	1	1	3	49
7:30 AM	0	0	60	0	3	2	65
7:45 AM	0	0	47	2	2	1	52
8:00 AM	0	0	57	0	3	0	60
8:15 AM	0	0	73	1	2	0	76
8:30 AM	0	0	82	1	0	0	83
8:45 AM	0	0	73	1	0	0	74
9:00 AM	0	0	52	1	3	0	56
9:15 AM	0	0	55	0	1	0	56
9:30 AM	0	0	59	1	1	0	61
9:45 AM	0	0	57	0	4	0	61
10:00 AM	0	0	47	1	1	0	49
10:15 AM	0	0	54	0	3	0	57
10:30 AM	0	0	44	0	3	0	47
10:45 AM	0	0	66	1	1	1	69
11:00 AM	0	0	57	0	0	0	57
11:15 AM	0	0	37	0	2	0	39
11:30 AM	0	0	60	0	3	0	63
11:45 AM	0	0	59	1	0	0	60
AM Total	**0**	**0**	**1222**	**13**	**46**	**11**	**1292**
Percentage	**0.00%**	**0.00%**	**94.58%**	**1.01%**	**3.56%**	**0.85%**	
AM Peak	**12:00 AM**	**12:00 AM**	**8:00 AM**	**7:45 AM**	**9:45 AM**	**7:00 AM**	**8:00 AM**
Volume	**0**	**0**	**285**	**4**	**11**	**6**	**293**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	57	0	5	0	62
12:15 PM	0	0	71	0	0	0	71
12:30 PM	0	0	49	1	1	0	51
12:45 PM	0	0	57	0	1	0	58
1:00 PM	0	0	63	0	1	0	64
1:15 PM	0	0	66	0	1	0	67
1:30 PM	0	0	63	1	3	0	67
1:45 PM	0	0	57	0	2	0	59
2:00 PM	0	0	51	0	0	0	51
2:15 PM	0	0	48	1	1	0	50
2:30 PM	0	0	53	0	1	1	55
2:45 PM	0	0	66	0	1	0	67
3:00 PM	0	0	74	1	0	0	75
3:15 PM	0	0	58	0	1	0	59
3:30 PM	0	0	50	0	0	0	50
3:45 PM	0	0	49	0	0	0	49
4:00 PM	0	0	55	1	0	0	56
4:15 PM	0	0	52	0	0	0	52
4:30 PM	0	0	50	0	0	0	50
4:45 PM	0	0	45	1	0	0	46
5:00 PM	0	0	39	0	2	0	41
5:15 PM	0	0	61	0	0	0	61
5:30 PM	3	0	61	1	0	0	65
5:45 PM	0	0	56	0	0	0	56
6:00 PM	0	0	50	1	0	0	51
6:15 PM	0	0	47	0	0	0	47
6:30 PM	0	0	40	0	1	0	41
6:45 PM	0	0	48	1	1	0	50
7:00 PM	0	0	51	0	1	0	52
7:15 PM	0	0	38	1	0	0	39
7:30 PM	0	0	39	0	0	0	39
7:45 PM	0	0	27	1	0	0	28
8:00 PM	0	0	21	0	0	0	21
8:15 PM	0	0	22	0	0	0	22
8:30 PM	0	0	14	0	0	0	14
8:45 PM	0	0	14	0	0	0	14
9:00 PM	0	0	24	0	0	0	24
9:15 PM	0	0	21	0	0	0	21
9:30 PM	0	0	15	0	0	0	15
9:45 PM	0	0	12	0	0	0	12
10:00 PM	0	0	11	0	0	0	11
10:15 PM	0	0	6	0	0	0	6
10:30 PM	0	0	9	0	0	0	9
10:45 PM	0	0	3	0	0	0	3
11:00 PM	0	0	7	0	0	0	7
11:15 PM	0	0	6	0	0	0	6
11:30 PM	0	0	4	0	0	0	4
11:45 PM	0	0	7	0	0	0	7
PM Total	**3**	**0**	**1887**	**11**	**23**	**1**	**1925**
Percentage	**0.16%**	**0.00%**	**98.03%**	**0.57%**	**1.19%**	**0.05%**	
PM Peak	**4:45 PM**	**12:00 PM**	**2:30 PM**	**1:30 PM**	**12:00 PM**	**1:45 PM**	**1:00 PM**
Volume	**3**	**0**	**251**	**2**	**7**	**1**	**257**
Day Total	**3**	**0**	**3109**	**24**	**69**	**12**	**3217**
Percentage	**0.09%**	**0.00%**	**96.64%**	**0.75%**	**2.14%**	**0.37%**	

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Saturday, January 27, 2024**
Direction: **NB**

PDI File #: **239698 ATR-C**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	6	0	0	0	6
12:15 AM	0	0	4	0	0	0	4
12:30 AM	0	0	3	0	0	0	3
12:45 AM	0	0	2	0	0	0	2
1:00 AM	0	0	3	0	0	0	3
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	3	0	0	0	3
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	2	0	0	0	2
3:45 AM	0	0	1	0	0	0	1
4:00 AM	0	0	0	0	2	0	2
4:15 AM	0	0	1	0	0	0	1
4:30 AM	0	0	1	0	0	0	1
4:45 AM	0	0	0	0	0	0	0
5:00 AM	0	0	4	0	0	0	4
5:15 AM	0	0	1	0	1	0	2
5:30 AM	0	0	1	0	1	0	2
5:45 AM	0	0	3	0	0	0	3
6:00 AM	0	0	8	0	0	0	8
6:15 AM	0	0	3	0	0	0	3
6:30 AM	0	0	4	0	0	0	4
6:45 AM	0	0	13	0	1	0	14
7:00 AM	0	0	15	1	0	1	17
7:15 AM	0	0	16	0	0	0	16
7:30 AM	0	0	21	0	1	0	22
7:45 AM	0	0	21	0	0	0	21
8:00 AM	0	0	31	0	0	0	31
8:15 AM	0	0	38	0	3	0	41
8:30 AM	0	0	45	1	2	0	48
8:45 AM	0	0	42	0	1	0	43
9:00 AM	0	0	46	1	0	0	47
9:15 AM	0	0	47	0	0	0	47
9:30 AM	0	0	49	0	0	0	49
9:45 AM	0	0	37	0	0	0	37
10:00 AM	0	1	62	1	2	0	66
10:15 AM	0	0	86	0	1	0	87
10:30 AM	0	0	66	0	3	0	69
10:45 AM	0	0	48	0	0	0	48
11:00 AM	0	0	53	0	1	1	55
11:15 AM	0	0	66	0	0	0	66
11:30 AM	0	0	68	1	1	0	70
11:45 AM	0	0	59	0	1	0	60
AM Total	**0**	**1**	**981**	**5**	**21**	**2**	**1010**
Percentage	**0.00%**	**0.10%**	**97.13%**	**0.50%**	**2.08%**	**0.20%**	
AM Peak	**12:00 AM**	**9:15 AM**	**10:00 AM**	**8:15 AM**	**8:00 AM**	**6:15 AM**	**10:00 AM**
Volume	**0**	**1**	**262**	**2**	**6**	**1**	**270**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	1	0	65	0	0	0	66
12:15 PM	0	0	70	0	0	0	70
12:30 PM	2	0	59	0	0	1	62
12:45 PM	0	0	44	0	1	0	45
1:00 PM	0	0	54	0	0	0	54
1:15 PM	0	0	53	1	0	0	54
1:30 PM	0	0	59	0	1	0	60
1:45 PM	0	0	53	0	0	0	53
2:00 PM	0	0	48	0	0	0	48
2:15 PM	3	0	37	0	0	0	40
2:30 PM	0	0	58	1	1	0	60
2:45 PM	0	0	37	0	1	0	38
3:00 PM	0	0	53	0	0	1	54
3:15 PM	2	0	44	0	0	0	46
3:30 PM	0	0	39	0	0	0	39
3:45 PM	0	0	49	0	0	0	49
4:00 PM	0	0	47	0	0	0	47
4:15 PM	0	0	35	1	0	0	36
4:30 PM	0	0	37	0	0	0	37
4:45 PM	0	0	34	0	0	0	34
5:00 PM	0	0	43	0	0	0	43
5:15 PM	0	0	43	0	0	0	43
5:30 PM	0	0	34	0	0	0	34
5:45 PM	0	0	34	1	0	0	35
6:00 PM	0	0	44	0	0	0	44
6:15 PM	0	0	31	0	1	0	32
6:30 PM	0	0	37	0	0	1	38
6:45 PM	0	0	34	0	0	0	34
7:00 PM	0	0	35	1	0	0	36
7:15 PM	0	0	25	0	0	0	25
7:30 PM	0	0	21	0	0	0	21
7:45 PM	0	0	21	0	0	0	21
8:00 PM	0	0	23	0	0	0	23
8:15 PM	0	0	14	0	0	0	14
8:30 PM	0	0	13	0	0	0	13
8:45 PM	0	0	13	0	0	0	13
9:00 PM	0	0	14	0	0	0	14
9:15 PM	0	0	17	0	0	0	17
9:30 PM	0	0	14	0	0	0	14
9:45 PM	0	0	14	0	0	0	14
10:00 PM	0	0	10	0	0	0	10
10:15 PM	0	0	12	0	0	0	12
10:30 PM	0	0	3	0	0	0	3
10:45 PM	0	0	7	0	0	0	7
11:00 PM	0	0	7	0	0	0	7
11:15 PM	0	0	7	1	0	0	8
11:30 PM	0	0	8	0	0	0	8
11:45 PM	0	0	8	0	0	0	8
PM Total	**8**	**0**	**1561**	**6**	**5**	**3**	**1583**
Percentage	**0.51%**	**0.00%**	**98.61%**	**0.38%**	**0.32%**	**0.19%**	
PM Peak	**12:00 PM**	**12:00 PM**	**12:00 PM**	**12:30 PM**	**12:45 PM**	**12:00 PM**	**12:00 PM**
Volume	**3**	**0**	**238**	**1**	**2**	**1**	**243**
Day Total	**8**	**1**	**2542**	**11**	**26**	**5**	**2593**
Percentage	**0.31%**	**0.04%**	**98.03%**	**0.42%**	**1.00%**	**0.19%**	

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Sunday, January 28, 2024**
Direction: **NB**

PDI File #: **239698 ATR-C**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	7	0	0	0	7
12:15 AM	0	0	8	0	0	0	8
12:30 AM	0	0	1	0	0	0	1
12:45 AM	0	0	3	0	0	0	3
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	2	0	0	0	2
1:30 AM	0	0	2	0	0	0	2
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	1	0	0	0	1
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	1	0	0	0	1
3:45 AM	0	0	1	0	0	0	1
4:00 AM	0	0	1	0	0	0	1
4:15 AM	0	0	1	0	1	0	2
4:30 AM	0	0	0	0	0	0	0
4:45 AM	0	0	1	0	1	0	2
5:00 AM	0	0	3	0	0	0	3
5:15 AM	0	0	0	0	0	0	0
5:30 AM	0	0	2	0	0	0	2
5:45 AM	0	0	0	0	1	0	1
6:00 AM	0	0	5	0	0	0	5
6:15 AM	0	0	3	0	0	0	3
6:30 AM	0	0	6	0	0	0	6
6:45 AM	0	0	8	0	0	0	8
7:00 AM	0	0	4	0	0	0	4
7:15 AM	0	0	12	0	0	0	12
7:30 AM	0	0	14	0	1	0	15
7:45 AM	0	0	13	1	0	0	14
8:00 AM	0	0	17	0	0	0	17
8:15 AM	0	0	26	0	0	0	26
8:30 AM	0	0	23	0	0	0	23
8:45 AM	0	0	22	0	0	0	22
9:00 AM	0	0	18	0	0	0	18
9:15 AM	0	0	30	1	0	0	31
9:30 AM	0	0	43	0	0	0	43
9:45 AM	1	0	24	0	0	0	25
10:00 AM	0	0	39	0	0	0	39
10:15 AM	0	0	21	0	0	0	21
10:30 AM	0	0	43	0	0	0	43
10:45 AM	0	0	41	1	0	0	42
11:00 AM	0	0	22	0	0	0	22
11:15 AM	0	0	34	0	0	0	34
11:30 AM	0	0	46	0	0	0	46
11:45 AM	0	0	52	0	0	0	52
AM Total	**1**	**0**	**602**	**3**	**4**	**0**	**610**
Percentage	**0.16%**	**0.00%**	**98.69%**	**0.49%**	**0.66%**	**0.00%**	
AM Peak	**9:00 AM**	**12:00 AM**	**11:00 AM**	**7:00 AM**	**4:00 AM**	**12:00 AM**	**11:00 AM**
Volume	**1**	**0**	**154**	**1**	**2**	**0**	**154**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	42	0	0	0	42
12:15 PM	0	0	31	1	0	0	32
12:30 PM	0	0	37	0	0	0	37
12:45 PM	0	0	32	0	0	0	32
1:00 PM	0	0	38	0	0	0	38
1:15 PM	0	0	31	0	0	0	31
1:30 PM	0	0	46	0	0	0	46
1:45 PM	0	0	34	1	0	0	35
2:00 PM	0	0	42	0	1	0	43
2:15 PM	0	0	34	0	1	1	36
2:30 PM	0	0	31	0	0	0	31
2:45 PM	0	0	24	0	0	0	24
3:00 PM	0	0	30	0	0	0	30
3:15 PM	0	0	30	1	1	0	32
3:30 PM	0	0	28	0	0	0	28
3:45 PM	0	0	35	0	0	0	35
4:00 PM	0	0	18	0	1	0	19
4:15 PM	0	0	24	0	0	0	24
4:30 PM	0	0	21	0	0	0	21
4:45 PM	0	0	28	1	0	0	29
5:00 PM	0	0	21	0	0	0	21
5:15 PM	0	0	18	0	0	0	18
5:30 PM	0	0	17	0	0	0	17
5:45 PM	0	0	32	0	0	0	32
6:00 PM	0	0	23	0	0	0	23
6:15 PM	0	0	28	1	0	0	29
6:30 PM	0	0	20	0	0	0	20
6:45 PM	0	0	26	0	0	0	26
7:00 PM	0	0	17	0	0	0	17
7:15 PM	0	0	18	0	0	0	18
7:30 PM	0	0	21	0	0	0	21
7:45 PM	0	0	15	0	0	0	15
8:00 PM	0	0	9	0	0	0	9
8:15 PM	0	0	7	0	0	0	7
8:30 PM	0	0	16	0	0	0	16
8:45 PM	0	0	7	0	0	0	7
9:00 PM	0	0	11	0	0	0	11
9:15 PM	0	0	11	0	0	0	11
9:30 PM	0	0	4	0	0	0	4
9:45 PM	0	0	4	0	0	0	4
10:00 PM	0	0	5	0	0	0	5
10:15 PM	0	0	6	0	0	0	6
10:30 PM	0	0	3	0	0	0	3
10:45 PM	0	0	4	0	0	0	4
11:00 PM	0	0	6	0	0	0	6
11:15 PM	0	0	1	0	1	0	2
11:30 PM	0	0	3	0	0	0	3
11:45 PM	0	0	1	0	0	0	1
PM Total	**0**	**0**	**990**	**5**	**5**	**1**	**1001**
Percentage	**0.00%**	**0.00%**	**98.90%**	**0.50%**	**0.50%**	**0.10%**	
PM Peak	**12:00 PM**	**12:00 PM**	**1:30 PM**	**12:00 PM**	**1:30 PM**	**1:30 PM**	**1:30 PM**
Volume	**0**	**0**	**156**	**1**	**2**	**1**	**160**
Day Total	**1**	**0**	**1592**	**8**	**9**	**1**	**1611**
Percentage	**0.06%**	**0.00%**	**98.82%**	**0.50%**	**0.56%**	**0.06%**	

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PDI File #: 239698 ATR-C

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Count Date: **Monday, January 29, 2024**
Direction: **NB**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	3	0	0	0	3
12:15 AM	0	0	0	0	0	0	0
12:30 AM	0	0	2	0	2	0	4
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	1	0	1
1:30 AM	0	0	1	0	1	0	2
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	1	0	0	0	1
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	3	0	0	0	3
3:00 AM	0	0	5	1	0	0	6
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	2	0	0	0	2
3:45 AM	0	0	3	0	0	0	3
4:00 AM	0	0	1	0	0	0	1
4:15 AM	0	0	4	0	0	0	4
4:30 AM	0	0	2	0	0	0	2
4:45 AM	0	0	4	0	1	0	5
5:00 AM	0	0	6	0	0	0	6
5:15 AM	0	0	10	0	0	0	10
5:30 AM	0	0	6	0	2	1	9
5:45 AM	0	0	6	1	2	0	9
6:00 AM	0	0	10	0	1	0	11
6:15 AM	0	0	17	1	0	0	18
6:30 AM	0	0	22	0	1	0	23
6:45 AM	0	0	31	1	1	0	33
7:00 AM	0	0	26	0	4	2	32
7:15 AM	1	0	48	1	3	2	55
7:30 AM	0	0	62	0	1	1	64
7:45 AM	0	0	57	2	0	2	61
8:00 AM	0	0	55	0	3	0	58
8:15 AM	0	0	58	1	1	0	60
8:30 AM	0	0	84	0	3	0	87
8:45 AM	0	0	60	0	1	0	61
9:00 AM	0	0	44	1	3	0	48
9:15 AM	0	0	37	0	2	0	39
9:30 AM	0	0	48	1	3	0	52
9:45 AM	0	0	49	0	5	1	55
10:00 AM	0	0	37	1	2	0	40
10:15 AM	0	0	43	0	3	0	46
10:30 AM	0	0	39	0	1	0	40
10:45 AM	0	0	47	1	2	0	50
11:00 AM	0	0	46	0	2	0	48
11:15 AM	0	0	44	0	4	1	49
11:30 AM	0	0	60	0	0	0	60
11:45 AM	0	0	61	1	0	0	62
AM Total	**1**	**0**	**1145**	**13**	**55**	**10**	**1224**
Percentage	**0.08%**	**0.00%**	**93.55%**	**1.06%**	**4.49%**	**0.82%**	
AM Peak	**6:30 AM**	**12:00 AM**	**8:00 AM**	**7:00 AM**	**9:00 AM**	**7:00 AM**	**7:45 AM**
Volume	**1**	**0**	**257**	**3**	**13**	**7**	**266**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	58	0	1	0	59
12:15 PM	0	0	54	0	2	0	56
12:30 PM	0	0	62	1	4	0	67
12:45 PM	0	0	48	0	0	0	48
1:00 PM	0	0	44	0	0	0	44
1:15 PM	0	0	42	1	5	0	48
1:30 PM	0	0	42	0	1	0	43
1:45 PM	0	0	36	0	1	0	37
2:00 PM	0	0	47	0	1	0	48
2:15 PM	0	0	48	1	0	0	49
2:30 PM	0	0	44	0	2	0	46
2:45 PM	0	0	43	0	2	0	45
3:00 PM	0	0	49	1	1	0	51
3:15 PM	0	0	57	0	0	0	57
3:30 PM	0	0	52	0	0	0	52
3:45 PM	0	0	50	0	1	0	51
4:00 PM	0	0	50	1	2	0	53
4:15 PM	0	0	36	0	0	0	36
4:30 PM	0	0	42	0	0	0	42
4:45 PM	0	0	45	2	0	0	47
5:00 PM	0	0	54	0	0	0	54
5:15 PM	0	0	38	0	1	0	39
5:30 PM	0	0	38	1	1	0	40
5:45 PM	0	0	37	0	0	0	37
6:00 PM	0	0	43	1	0	0	44
6:15 PM	0	0	40	0	0	0	40
6:30 PM	0	0	31	0	1	0	32
6:45 PM	0	0	29	1	0	0	30
7:00 PM	0	0	36	0	0	0	36
7:15 PM	0	0	25	1	0	0	26
7:30 PM	0	0	15	0	0	0	15
7:45 PM	0	0	16	1	0	0	17
8:00 PM	0	0	23	0	0	0	23
8:15 PM	0	0	14	0	0	0	14
8:30 PM	0	0	18	0	0	0	18
8:45 PM	0	0	20	0	0	0	20
9:00 PM	0	0	10	0	0	0	10
9:15 PM	0	0	10	0	0	0	10
9:30 PM	0	0	2	0	0	0	2
9:45 PM	0	0	3	0	0	0	3
10:00 PM	0	0	4	0	0	0	4
10:15 PM	0	0	3	0	0	0	3
10:30 PM	0	0	4	0	0	0	4
10:45 PM	0	0	4	0	0	0	4
11:00 PM	0	0	4	0	0	0	4
11:15 PM	0	0	4	0	0	0	4
11:30 PM	0	0	1	0	0	0	1
11:45 PM	0	0	3	0	1	0	4
PM Total	**0**	**0**	**1478**	**12**	**27**	**0**	**1517**
Percentage	**0.00%**	**0.00%**	**97.43%**	**0.79%**	**1.78%**	**0.00%**	
PM Peak	**12:00 PM**	**12:00 PM**	**12:00 PM**	**4:00 PM**	**12:30 PM**	**12:00 PM**	**12:00 PM**
Volume	**0**	**0**	**222**	**3**	**9**	**0**	**230**

Day Total	**1**	**0**	**2623**	**25**	**82**	**10**	**2741**
Percentage	**0.04%**	**0.00%**	**95.70%**	**0.91%**	**2.99%**	**0.36%**	

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Tuesday, January 23, 2024**
Direction: **SB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-C**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	0	0	1
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	0	0	1	0	1
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	2	0	2
1:15 AM	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	1	0	1
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	1	0	0	0	1
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	1	0	0	0	1
3:45 AM	0	0	0	0	0	0	0
4:00 AM	0	0	3	0	0	0	3
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	1	0	1
4:45 AM	0	0	2	0	0	0	2
5:00 AM	0	0	1	0	1	0	2
5:15 AM	0	0	3	0	2	0	5
5:30 AM	0	0	6	0	0	0	6
5:45 AM	0	0	14	0	2	0	16
6:00 AM	0	0	8	1	0	0	9
6:15 AM	0	0	22	0	0	1	23
6:30 AM	0	0	19	1	0	0	20
6:45 AM	0	0	31	0	4	0	35
7:00 AM	0	0	33	1	1	0	35
7:15 AM	0	0	34	0	2	1	37
7:30 AM	0	0	47	1	2	0	50
7:45 AM	0	0	65	0	4	1	70
8:00 AM	0	0	46	2	3	0	51
8:15 AM	0	0	59	0	2	0	61
8:30 AM	0	0	51	2	2	0	55
8:45 AM	0	0	54	0	2	0	56
9:00 AM	0	0	41	0	1	0	42
9:15 AM	0	0	76	1	1	0	78
9:30 AM	0	0	57	1	0	0	58
9:45 AM	0	0	56	0	1	0	57
10:00 AM	0	0	56	1	3	0	60
10:15 AM	0	0	40	0	3	0	43
10:30 AM	0	0	53	1	3	2	59
10:45 AM	0	0	54	0	1	0	55
11:00 AM	0	0	62	0	1	0	63
11:15 AM	0	0	56	1	2	0	59
11:30 AM	0	0	65	0	2	1	68
11:45 AM	0	0	60	0	0	0	60
AM Total	**0**	**0**	**1179**	**13**	**50**	**6**	**1248**
Percentage	**0.00%**	**0.00%**	**94.47%**	**1.04%**	**4.01%**	**0.48%**	
AM Peak	**12:00 AM**	**12:00 AM**	**9:15 AM**	**7:45 AM**	**7:15 AM**	**7:00 AM**	**9:15 AM**
Volume	**0**	**0**	**245**	**4**	**11**	**2**	**253**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	86	0	1	0	87
12:15 PM	0	0	62	1	4	0	67
12:30 PM	0	0	62	0	2	0	64
12:45 PM	0	0	73	1	0	2	76
1:00 PM	0	0	64	1	3	0	68
1:15 PM	0	0	61	0	0	0	61
1:30 PM	0	0	56	1	1	0	58
1:45 PM	0	0	58	0	3	0	61
2:00 PM	0	0	77	1	1	0	79
2:15 PM	0	0	62	1	2	1	66
2:30 PM	1	0	75	0	0	1	77
2:45 PM	0	0	64	1	3	2	70
3:00 PM	0	0	86	0	2	0	88
3:15 PM	0	0	62	0	3	0	65
3:30 PM	0	0	66	1	0	0	67
3:45 PM	0	0	72	0	2	0	74
4:00 PM	0	0	85	1	1	0	87
4:15 PM	0	0	72	1	0	0	73
4:30 PM	1	0	60	1	2	1	65
4:45 PM	0	0	87	0	1	0	88
5:00 PM	0	0	64	1	0	0	65
5:15 PM	0	0	70	0	0	0	70
5:30 PM	0	0	37	0	3	0	40
5:45 PM	0	0	55	1	0	0	56
6:00 PM	0	0	52	2	0	0	54
6:15 PM	0	0	46	1	0	0	47
6:30 PM	0	0	46	1	0	0	47
6:45 PM	0	0	35	0	0	0	35
7:00 PM	0	0	43	1	0	0	44
7:15 PM	0	0	30	1	1	0	32
7:30 PM	0	0	32	0	0	0	32
7:45 PM	0	0	28	0	0	0	28
8:00 PM	0	0	24	0	0	0	24
8:15 PM	0	0	25	0	0	0	25
8:30 PM	0	0	17	0	0	0	17
8:45 PM	0	0	23	0	1	0	24
9:00 PM	0	0	13	0	0	0	13
9:15 PM	0	0	8	0	0	0	8
9:30 PM	1	0	16	0	1	0	18
9:45 PM	0	0	9	0	0	0	9
10:00 PM	0	0	5	0	0	0	5
10:15 PM	0	0	11	0	0	0	11
10:30 PM	0	0	6	0	0	0	6
10:45 PM	0	0	2	0	0	0	2
11:00 PM	0	0	0	0	0	0	0
11:15 PM	0	0	3	0	0	0	3
11:30 PM	0	0	5	0	1	0	6
11:45 PM	0	0	1	0	0	0	1
PM Total	**3**	**0**	**2096**	**19**	**38**	**7**	**2163**
Percentage	**0.14%**	**0.00%**	**96.90%**	**0.88%**	**1.76%**	**0.32%**	
PM Peak	**1:45 PM**	**12:00 PM**	**4:00 PM**	**5:45 PM**	**12:15 PM**	**2:00 PM**	**4:00 PM**
Volume	**1**	**0**	**304**	**5**	**9**	**4**	**313**
Day Total	**3**	**0**	**3275**	**32**	**88**	**13**	**3411**
Percentage	**0.09%**	**0.00%**	**96.01%**	**0.94%**	**2.58%**	**0.38%**	

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C

Count Date: Wednesday, January 24, 2024
Direction: SB

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	0	0	1	0	1
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	1	0	1
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	1	0	1
1:30 AM	0	0	2	0	1	0	3
1:45 AM	0	0	3	0	0	0	3
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	1	0	1
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	2	0	0	0	2
3:00 AM	0	0	2	0	1	0	3
3:15 AM	0	0	1	0	1	0	2
3:30 AM	0	0	0	0	1	1	2
3:45 AM	0	0	0	0	1	0	1
4:00 AM	0	0	0	0	1	0	1
4:15 AM	0	0	1	0	1	0	2
4:30 AM	0	0	0	0	0	0	0
4:45 AM	0	0	2	0	3	0	5
5:00 AM	0	0	4	0	2	0	6
5:15 AM	0	0	5	0	2	1	8
5:30 AM	0	0	6	0	2	0	8
5:45 AM	0	0	17	0	1	0	18
6:00 AM	0	0	19	0	1	0	20
6:15 AM	0	0	21	1	0	1	23
6:30 AM	0	0	23	1	3	0	27
6:45 AM	0	0	30	0	2	1	33
7:00 AM	0	0	24	1	2	1	28
7:15 AM	0	0	46	0	0	0	46
7:30 AM	0	0	42	1	3	0	46
7:45 AM	0	0	48	0	1	0	49
8:00 AM	0	0	70	2	2	0	74
8:15 AM	0	0	45	0	6	0	51
8:30 AM	0	0	61	0	2	0	63
8:45 AM	0	0	52	1	3	1	57
9:00 AM	0	0	59	0	3	0	62
9:15 AM	0	0	54	1	3	0	58
9:30 AM	0	0	44	0	3	0	47
9:45 AM	0	0	56	1	3	1	61
10:00 AM	0	0	53	0	3	0	56
10:15 AM	0	0	40	0	4	0	44
10:30 AM	0	0	49	1	1	1	52
10:45 AM	0	0	64	0	3	0	67
11:00 AM	0	0	59	0	2	0	61
11:15 AM	0	0	45	1	4	1	51
11:30 AM	0	0	58	0	3	0	61
11:45 AM	0	0	59	0	1	0	60
AM Total	**0**	**0**	**1167**	**11**	**79**	**9**	**1266**
Percentage	**0.00%**	**0.00%**	**92.18%**	**0.87%**	**6.24%**	**0.71%**	
AM Peak	**12:00 AM**	**12:00 AM**	**8:00 AM**	**6:15 AM**	**8:15 AM**	**6:15 AM**	**8:00 AM**
Volume	**0**	**0**	**228**	**3**	**14**	**3**	**245**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	62	0	2	0	64
12:15 PM	0	0	67	1	2	0	70
12:30 PM	0	0	64	0	2	0	66
12:45 PM	0	0	58	0	0	0	58
1:00 PM	0	0	56	1	1	0	58
1:15 PM	0	0	63	0	0	0	63
1:30 PM	0	0	76	0	0	0	76
1:45 PM	0	0	69	0	2	1	72
2:00 PM	0	0	68	1	1	0	70
2:15 PM	0	0	49	0	1	1	51
2:30 PM	0	0	74	0	3	0	77
2:45 PM	0	0	70	1	1	0	72
3:00 PM	0	0	72	0	2	0	74
3:15 PM	0	0	59	0	1	1	61
3:30 PM	0	0	57	0	1	0	58
3:45 PM	0	0	70	1	2	0	73
4:00 PM	0	0	81	0	0	0	81
4:15 PM	0	0	81	1	0	0	82
4:30 PM	0	0	64	1	0	0	65
4:45 PM	0	0	68	0	1	0	69
5:00 PM	0	0	55	0	0	0	55
5:15 PM	0	0	68	1	0	0	69
5:30 PM	0	0	71	1	1	0	73
5:45 PM	0	0	67	0	0	0	67
6:00 PM	0	0	58	0	0	0	58
6:15 PM	0	0	61	1	0	0	62
6:30 PM	0	0	53	0	0	0	53
6:45 PM	0	0	46	1	0	1	48
7:00 PM	0	0	33	1	1	0	35
7:15 PM	0	0	34	1	0	0	35
7:30 PM	0	0	44	0	0	0	44
7:45 PM	0	0	30	0	0	0	30
8:00 PM	0	0	37	0	0	0	37
8:15 PM	0	0	28	0	0	0	28
8:30 PM	0	0	27	0	0	0	27
8:45 PM	0	0	20	0	0	0	20
9:00 PM	0	0	21	0	0	0	21
9:15 PM	0	0	11	0	0	0	11
9:30 PM	0	0	13	0	0	0	13
9:45 PM	0	0	8	0	0	0	8
10:00 PM	0	0	17	0	1	0	18
10:15 PM	0	0	2	0	0	0	2
10:30 PM	0	0	5	0	0	0	5
10:45 PM	0	0	4	0	0	0	4
11:00 PM	0	0	1	0	0	0	1
11:15 PM	0	0	6	0	0	0	6
11:30 PM	0	0	4	0	0	0	4
11:45 PM	0	0	5	0	0	0	5
PM Total	**0**	**0**	**2157**	**13**	**25**	**4**	**2199**
Percentage	**0.00%**	**0.00%**	**98.09%**	**0.59%**	**1.14%**	**0.18%**	
PM Peak	**12:00 PM**	**12:00 PM**	**3:45 PM**	**3:45 PM**	**1:45 PM**	**1:30 PM**	**3:45 PM**
Volume	**0**	**0**	**296**	**3**	**7**	**2**	**301**

Day Total	**0**	**0**	**3324**	**24**	**104**	**13**	**3465**
Percentage	**0.00%**	**0.00%**	**95.93%**	**0.69%**	**3.00%**	**0.38%**	

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PDI File #: 239698 ATR-C

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Count Date: **Thursday, January 25, 2024**
Direction: **SB**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	0	0	0	0	0
12:15 AM	0	0	2	0	0	0	2
12:30 AM	0	0	1	0	0	0	1
12:45 AM	0	0	1	0	1	0	2
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	1	0	1	0	2
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	2	0	0	0	2
2:00 AM	0	0	0	0	1	0	1
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0
3:45 AM	0	0	1	0	0	0	1
4:00 AM	0	0	1	0	1	0	2
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0
4:45 AM	0	0	1	0	1	0	2
5:00 AM	0	0	1	0	0	0	1
5:15 AM	0	0	1	0	1	1	3
5:30 AM	0	0	8	0	0	1	9
5:45 AM	0	0	11	0	2	0	13
6:00 AM	0	0	15	1	1	2	19
6:15 AM	0	0	17	0	0	1	18
6:30 AM	0	0	17	1	2	0	20
6:45 AM	0	0	34	0	2	0	36
7:00 AM	0	0	23	1	0	1	25
7:15 AM	0	0	43	0	1	2	46
7:30 AM	0	0	41	1	4	1	47
7:45 AM	0	0	58	0	0	0	58
8:00 AM	0	0	53	2	4	0	59
8:15 AM	0	0	50	0	3	0	53
8:30 AM	0	0	55	0	1	1	57
8:45 AM	0	0	56	1	2	0	59
9:00 AM	0	0	46	0	4	1	51
9:15 AM	0	0	62	1	3	0	66
9:30 AM	0	0	45	0	1	0	46
9:45 AM	0	0	52	0	1	0	53
10:00 AM	0	0	54	1	1	0	56
10:15 AM	0	0	51	1	2	0	54
10:30 AM	0	0	45	1	2	1	49
10:45 AM	0	0	62	0	1	0	63
11:00 AM	0	0	49	1	1	0	51
11:15 AM	0	0	63	0	4	0	67
11:30 AM	0	0	56	1	2	0	59
11:45 AM	0	0	59	0	2	0	61
AM Total	**0**	**0**	**1138**	**13**	**52**	**12**	**1215**
Percentage	**0.00%**	**0.00%**	**93.66%**	**1.07%**	**4.28%**	**0.99%**	
AM Peak	**12:00 AM**	**12:00 AM**	**10:45 AM**	**7:15 AM**	**7:30 AM**	**5:15 AM**	**10:45 AM**
Volume	**0**	**0**	**230**	**3**	**11**	**4**	**240**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	78	0	2	0	80
12:15 PM	0	0	77	2	1	0	80
12:30 PM	0	0	61	0	2	0	63
12:45 PM	0	0	51	0	2	0	53
1:00 PM	0	0	60	1	1	0	62
1:15 PM	0	0	65	0	2	0	67
1:30 PM	0	0	68	0	0	0	68
1:45 PM	0	0	58	0	4	2	64
2:00 PM	0	0	75	1	1	0	77
2:15 PM	0	0	78	0	1	0	79
2:30 PM	0	0	56	0	0	0	56
2:45 PM	0	0	77	1	2	0	80
3:00 PM	1	0	56	0	0	0	57
3:15 PM	0	0	52	0	1	0	53
3:30 PM	0	0	70	1	1	0	72
3:45 PM	0	0	47	0	0	1	48
4:00 PM	0	0	76	1	0	0	77
4:15 PM	0	0	62	2	0	0	64
4:30 PM	0	0	68	1	1	0	70
4:45 PM	0	0	71	0	0	0	71
5:00 PM	0	0	62	0	0	0	62
5:15 PM	0	0	64	1	0	0	65
5:30 PM	0	0	66	0	1	0	67
5:45 PM	0	0	59	2	1	0	62
6:00 PM	0	0	66	0	1	1	68
6:15 PM	0	0	58	1	0	0	59
6:30 PM	0	0	47	0	0	0	47
6:45 PM	0	0	44	0	0	0	44
7:00 PM	0	0	46	1	0	0	47
7:15 PM	0	0	38	0	0	0	38
7:30 PM	0	0	28	1	0	0	29
7:45 PM	0	0	38	0	0	0	38
8:00 PM	0	0	39	1	0	0	40
8:15 PM	0	0	24	0	0	0	24
8:30 PM	0	0	22	0	0	0	22
8:45 PM	0	0	27	0	0	0	27
9:00 PM	0	0	20	0	0	0	20
9:15 PM	0	0	18	0	0	0	18
9:30 PM	0	0	9	0	0	0	9
9:45 PM	0	0	8	0	0	0	8
10:00 PM	0	0	15	0	0	0	15
10:15 PM	0	0	6	0	0	0	6
10:30 PM	0	0	9	0	0	0	9
10:45 PM	0	0	11	0	0	0	11
11:00 PM	0	0	6	0	0	0	6
11:15 PM	0	0	2	0	0	0	2
11:30 PM	0	0	1	0	0	0	1
11:45 PM	1	0	8	0	0	0	9
PM Total	**2**	**0**	**2147**	**17**	**24**	**4**	**2194**
Percentage	**0.09%**	**0.00%**	**97.86%**	**0.77%**	**1.09%**	**0.18%**	
PM Peak	**2:15 PM**	**12:00 PM**	**2:00 PM**	**3:30 PM**	**12:00 PM**	**1:00 PM**	**2:00 PM**
Volume	**1**	**0**	**286**	**4**	**7**	**2**	**292**
Day Total	**2**	**0**	**3285**	**30**	**76**	**16**	**3409**
Percentage	**0.06%**	**0.00%**	**96.36%**	**0.88%**	**2.23%**	**0.47%**	

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: Friday, January 26, 2024
Direction: SB

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	3	0	0	0	3
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	3	0	0	0	3
12:45 AM	0	0	2	0	0	0	2
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	2	1	3
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	0	0	1	0	1
2:00 AM	0	0	0	0	1	0	1
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	0	0	1	0	1
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	1	0	1
4:00 AM	0	0	0	0	1	0	1
4:15 AM	0	0	1	0	0	0	1
4:30 AM	0	0	0	0	2	0	2
4:45 AM	0	0	2	0	0	0	2
5:00 AM	0	0	0	0	1	0	1
5:15 AM	0	0	2	0	0	1	3
5:30 AM	0	0	8	0	1	0	9
5:45 AM	0	0	19	0	1	0	20
6:00 AM	0	0	13	0	3	0	16
6:15 AM	0	0	17	1	0	0	18
6:30 AM	0	0	26	1	2	0	29
6:45 AM	0	0	24	0	0	0	24
7:00 AM	0	0	22	1	1	1	25
7:15 AM	0	0	32	0	2	0	34
7:30 AM	0	0	43	1	3	1	48
7:45 AM	0	0	54	0	1	0	55
8:00 AM	0	0	50	3	1	1	55
8:15 AM	0	0	50	0	2	0	52
8:30 AM	0	0	60	0	4	0	64
8:45 AM	0	0	67	1	0	0	68
9:00 AM	0	0	61	0	1	0	62
9:15 AM	0	0	50	1	2	0	53
9:30 AM	0	0	59	0	0	0	59
9:45 AM	0	0	59	0	2	0	61
10:00 AM	0	0	54	1	2	0	57
10:15 AM	0	0	64	0	3	0	67
10:30 AM	0	0	56	1	2	0	59
10:45 AM	0	0	63	0	2	0	65
11:00 AM	0	0	69	0	4	0	73
11:15 AM	0	0	51	0	2	0	53
11:30 AM	0	0	60	1	4	0	65
11:45 AM	0	0	57	0	2	0	59
AM Total	**0**	**0**	**1204**	**12**	**57**	**5**	**1278**
Percentage	**0.00%**	**0.00%**	**94.21%**	**0.94%**	**4.46%**	**0.39%**	
AM Peak	**12:00 AM**	**12:00 AM**	**10:15 AM**	**7:15 AM**	**10:45 AM**	**6:45 AM**	**10:15 AM**
Volume	**0**	**0**	**252**	**4**	**12**	**2**	**264**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	80	0	0	0	80
12:15 PM	0	0	78	1	1	0	80
12:30 PM	0	0	79	0	5	0	84
12:45 PM	0	0	63	0	2	0	65
1:00 PM	0	0	78	0	1	1	80
1:15 PM	0	0	68	1	0	0	69
1:30 PM	0	0	76	0	1	1	78
1:45 PM	0	0	72	0	0	0	72
2:00 PM	0	0	68	2	3	0	73
2:15 PM	0	0	74	0	0	0	74
2:30 PM	0	0	79	1	1	1	82
2:45 PM	0	0	77	1	1	0	79
3:00 PM	0	0	90	0	0	0	90
3:15 PM	0	0	81	0	1	1	83
3:30 PM	0	0	71	0	0	0	71
3:45 PM	0	0	65	1	0	0	66
4:00 PM	0	0	68	0	0	0	68
4:15 PM	0	0	80	0	0	0	80
4:30 PM	0	0	63	1	0	0	64
4:45 PM	0	0	76	1	0	0	77
5:00 PM	0	0	69	0	0	0	69
5:15 PM	0	0	83	1	0	0	84
5:30 PM	0	0	71	0	1	0	72
5:45 PM	0	0	61	1	0	0	62
6:00 PM	0	0	51	0	0	0	51
6:15 PM	0	0	48	1	0	0	49
6:30 PM	0	0	46	0	0	0	46
6:45 PM	0	0	57	1	2	0	60
7:00 PM	0	0	41	0	1	0	42
7:15 PM	0	0	38	0	0	0	38
7:30 PM	0	0	49	1	0	0	50
7:45 PM	0	0	35	0	0	1	36
8:00 PM	0	0	30	0	1	0	31
8:15 PM	0	0	28	0	0	0	28
8:30 PM	0	0	26	0	0	0	26
8:45 PM	0	0	29	0	0	0	29
9:00 PM	0	0	26	0	0	0	26
9:15 PM	0	0	12	0	0	0	12
9:30 PM	0	0	18	0	0	0	18
9:45 PM	0	0	21	0	0	0	21
10:00 PM	0	0	20	0	0	0	20
10:15 PM	0	0	8	0	0	0	8
10:30 PM	0	0	11	0	0	0	11
10:45 PM	0	0	11	0	0	0	11
11:00 PM	0	0	8	0	0	0	8
11:15 PM	0	0	5	0	0	0	5
11:30 PM	0	0	8	0	0	0	8
11:45 PM	0	0	2	0	0	0	2
PM Total	**0**	**0**	**2398**	**14**	**21**	**5**	**2438**
Percentage	**0.00%**	**0.00%**	**98.36%**	**0.57%**	**0.86%**	**0.21%**	
PM Peak	**12:00 PM**	**12:00 PM**	**2:30 PM**	**2:00 PM**	**12:15 PM**	**12:45 PM**	**2:30 PM**
Volume	**0**	**0**	**327**	**4**	**9**	**2**	**334**
Day Total	**0**	**0**	**3602**	**26**	**78**	**10**	**3716**
Percentage	**0.00%**	**0.00%**	**96.93%**	**0.70%**	**2.10%**	**0.27%**	

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C

Count Date: Saturday, January 27, 2024
Direction: SB

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	3	0	0	0	3
12:15 AM	0	0	5	0	0	0	5
12:30 AM	0	0	1	0	0	0	1
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	2	0	0	0	2
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	5	0	1	0	6
2:00 AM	0	0	1	0	1	0	2
2:15 AM	0	0	2	0	0	0	2
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	1	0	0	0	1
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0
3:45 AM	0	0	1	0	0	0	1
4:00 AM	0	0	1	0	1	0	2
4:15 AM	0	0	1	0	0	0	1
4:30 AM	0	0	1	0	0	0	1
4:45 AM	0	0	0	0	0	0	0
5:00 AM	0	0	2	0	0	0	2
5:15 AM	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	1	0	1
5:45 AM	0	0	4	0	0	0	4
6:00 AM	0	0	5	0	1	0	6
6:15 AM	0	0	3	0	0	0	3
6:30 AM	0	0	5	0	1	1	7
6:45 AM	0	0	18	1	0	0	19
7:00 AM	0	0	18	0	2	1	21
7:15 AM	0	0	17	0	0	0	17
7:30 AM	0	0	24	0	1	1	26
7:45 AM	0	0	24	0	0	0	24
8:00 AM	0	0	27	0	2	0	29
8:15 AM	0	0	37	1	0	1	39
8:30 AM	0	0	34	3	0	0	37
8:45 AM	0	0	48	0	1	0	49
9:00 AM	0	0	39	0	1	0	40
9:15 AM	0	0	68	0	2	0	70
9:30 AM	0	0	42	0	0	0	42
9:45 AM	0	0	63	1	2	0	66
10:00 AM	0	0	50	0	0	0	50
10:15 AM	0	0	79	0	0	0	79
10:30 AM	0	0	67	0	1	0	68
10:45 AM	0	0	78	0	1	0	79
11:00 AM	0	0	54	0	0	0	54
11:15 AM	1	0	65	1	0	0	67
11:30 AM	0	0	85	0	0	0	85
11:45 AM	0	0	72	0	0	0	72
AM Total	**1**	**0**	**1054**	**7**	**19**	**4**	**1085**
Percentage	**0.09%**	**0.00%**	**97.14%**	**0.65%**	**1.75%**	**0.37%**	
AM Peak	**10:30 AM**	**12:00 AM**	**10:45 AM**	**7:45 AM**	**9:00 AM**	**6:15 AM**	**10:45 AM**
Volume	**1**	**0**	**282**	**4**	**5**	**2**	**285**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	79	0	0	0	79
12:15 PM	1	0	69	0	0	0	70
12:30 PM	0	0	66	0	0	0	66
12:45 PM	0	0	61	0	1	0	62
1:00 PM	0	0	65	1	0	0	66
1:15 PM	0	0	59	0	0	0	59
1:30 PM	0	0	82	0	0	0	82
1:45 PM	0	0	67	0	0	0	67
2:00 PM	0	0	56	0	1	0	57
2:15 PM	0	0	42	0	2	0	44
2:30 PM	0	0	72	1	0	0	73
2:45 PM	0	0	57	0	0	0	57
3:00 PM	0	0	53	0	0	0	53
3:15 PM	0	0	49	0	0	0	49
3:30 PM	0	0	53	0	0	0	53
3:45 PM	0	0	52	0	1	0	53
4:00 PM	0	0	48	1	0	0	49
4:15 PM	0	0	40	0	0	0	40
4:30 PM	0	0	52	0	0	0	52
4:45 PM	0	0	46	0	0	0	46
5:00 PM	0	0	48	1	0	0	49
5:15 PM	0	0	32	0	0	0	32
5:30 PM	1	0	35	1	0	0	37
5:45 PM	0	0	43	0	0	0	43
6:00 PM	0	0	41	0	0	0	41
6:15 PM	0	0	39	0	1	1	41
6:30 PM	0	0	50	0	0	0	50
6:45 PM	0	0	25	1	0	0	26
7:00 PM	0	0	27	0	0	0	27
7:15 PM	0	0	35	0	0	0	35
7:30 PM	0	0	23	0	0	0	23
7:45 PM	0	0	36	0	0	0	36
8:00 PM	0	0	15	0	0	0	15
8:15 PM	0	0	28	0	0	0	28
8:30 PM	0	0	28	0	0	0	28
8:45 PM	0	0	20	0	2	0	22
9:00 PM	0	0	25	0	0	0	25
9:15 PM	0	0	18	0	0	0	18
9:30 PM	0	0	9	0	0	0	9
9:45 PM	0	0	17	0	1	0	18
10:00 PM	0	0	15	0	0	0	15
10:15 PM	0	0	17	0	0	0	17
10:30 PM	0	0	18	0	0	0	18
10:45 PM	0	0	20	0	0	0	20
11:00 PM	0	0	3	0	0	0	3
11:15 PM	0	0	5	0	0	0	5
11:30 PM	0	0	8	0	0	0	8
11:45 PM	0	0	10	0	0	0	10
PM Total	**2**	**0**	**1858**	**6**	**9**	**1**	**1876**
Percentage	**0.11%**	**0.00%**	**99.04%**	**0.32%**	**0.48%**	**0.05%**	
PM Peak	**12:00 PM**	**12:00 PM**	**12:00 PM**	**4:45 PM**	**1:30 PM**	**5:30 PM**	**12:00 PM**
Volume	**1**	**0**	**275**	**2**	**3**	**1**	**277**
Day Total	**3**	**0**	**2912**	**13**	**28**	**5**	**2961**
Percentage	**0.10%**	**0.00%**	**98.35%**	**0.44%**	**0.95%**	**0.17%**	

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Sunday, January 28, 2024**
Direction: **SB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-C**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	6	0	0	0	6
12:15 AM	0	0	4	0	0	0	4
12:30 AM	0	0	4	0	0	0	4
12:45 AM	0	0	2	0	0	0	2
1:00 AM	0	0	1	0	1	0	2
1:15 AM	0	0	2	0	0	0	2
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	1	0	1	0	2
2:00 AM	0	0	2	0	0	0	2
2:15 AM	0	0	2	0	0	0	2
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	1	0	0	0	1
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	1	0	1
3:45 AM	0	0	0	0	0	0	0
4:00 AM	0	0	1	0	0	0	1
4:15 AM	0	0	0	0	0	1	1
4:30 AM	0	0	0	0	0	0	0
4:45 AM	0	0	2	0	0	0	2
5:00 AM	0	0	1	0	0	0	1
5:15 AM	0	0	1	0	0	0	1
5:30 AM	0	0	1	0	0	0	1
5:45 AM	0	0	4	0	0	0	4
6:00 AM	0	0	3	0	0	0	3
6:15 AM	0	0	0	0	0	0	0
6:30 AM	0	0	7	0	0	0	7
6:45 AM	0	0	11	0	0	0	11
7:00 AM	0	0	7	0	0	0	7
7:15 AM	0	0	12	0	0	0	12
7:30 AM	0	0	18	1	0	0	19
7:45 AM	0	0	14	0	1	0	15
8:00 AM	0	0	29	0	0	0	29
8:15 AM	0	0	18	0	0	0	18
8:30 AM	0	0	23	0	0	0	23
8:45 AM	0	0	29	0	0	0	29
9:00 AM	0	0	25	1	0	0	26
9:15 AM	0	0	17	0	0	0	17
9:30 AM	0	0	30	0	0	0	30
9:45 AM	0	0	34	0	0	0	34
10:00 AM	0	0	41	0	0	0	41
10:15 AM	0	0	43	0	0	0	43
10:30 AM	0	0	42	1	0	0	43
10:45 AM	0	0	41	0	0	0	41
11:00 AM	1	0	40	0	0	0	41
11:15 AM	0	0	36	0	0	0	36
11:30 AM	0	0	49	0	0	0	49
11:45 AM	0	0	55	0	0	0	55
AM Total	**1**	**0**	**659**	**3**	**4**	**1**	**668**
Percentage	**0.15%**	**0.00%**	**98.65%**	**0.45%**	**0.60%**	**0.15%**	
AM Peak	**10:15 AM**	**12:00 AM**	**11:00 AM**	**6:45 AM**	**1:00 AM**	**3:30 AM**	**11:00 AM**
Volume	**1**	**0**	**180**	**1**	**2**	**1**	**181**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	50	1	1	0	52
12:15 PM	0	0	47	0	0	0	47
12:30 PM	0	0	45	0	0	0	45
12:45 PM	0	0	46	0	0	0	46
1:00 PM	0	0	48	0	1	0	49
1:15 PM	0	0	43	0	0	0	43
1:30 PM	0	0	40	1	0	0	41
1:45 PM	0	0	41	0	0	0	41
2:00 PM	0	0	53	0	0	0	53
2:15 PM	0	0	31	0	1	0	32
2:30 PM	0	0	50	0	0	0	50
2:45 PM	0	0	50	0	1	0	51
3:00 PM	0	0	45	1	0	0	46
3:15 PM	0	0	38	0	1	0	39
3:30 PM	0	0	34	0	0	0	34
3:45 PM	0	0	38	0	0	0	38
4:00 PM	0	0	28	0	0	0	28
4:15 PM	0	0	28	0	0	0	28
4:30 PM	0	0	27	1	0	0	28
4:45 PM	0	0	30	0	0	0	30
5:00 PM	0	0	33	0	0	0	33
5:15 PM	0	0	26	0	0	0	26
5:30 PM	0	0	25	0	0	0	25
5:45 PM	0	0	37	0	0	0	37
6:00 PM	0	0	45	1	0	1	47
6:15 PM	0	0	30	0	1	0	31
6:30 PM	0	0	29	0	0	0	29
6:45 PM	0	0	25	0	0	0	25
7:00 PM	0	0	30	0	0	0	30
7:15 PM	0	0	18	1	0	0	19
7:30 PM	0	0	20	0	0	0	20
7:45 PM	0	0	20	0	0	0	20
8:00 PM	0	0	20	0	0	0	20
8:15 PM	0	0	16	0	0	0	16
8:30 PM	0	0	14	0	0	0	14
8:45 PM	0	0	10	0	0	0	10
9:00 PM	0	0	8	0	0	0	8
9:15 PM	0	0	9	0	0	0	9
9:30 PM	0	0	6	0	0	0	6
9:45 PM	0	0	9	0	0	0	9
10:00 PM	0	0	7	0	0	0	7
10:15 PM	0	0	12	0	1	0	13
10:30 PM	0	0	2	0	0	0	2
10:45 PM	0	0	1	0	0	0	1
11:00 PM	0	0	5	0	0	0	5
11:15 PM	0	0	1	0	1	0	2
11:30 PM	0	0	1	0	0	0	1
11:45 PM	0	0	2	0	0	0	2
PM Total	**0**	**0**	**1273**	**6**	**8**	**1**	**1288**
Percentage	**0.00%**	**0.00%**	**98.84%**	**0.47%**	**0.62%**	**0.08%**	
PM Peak	**12:00 PM**	**12:00 PM**	**12:00 PM**	**12:00 PM**	**2:00 PM**	**5:15 PM**	**12:00 PM**
Volume	**0**	**0**	**188**	**1**	**2**	**1**	**190**
Day Total	**1**	**0**	**1932**	**9**	**12**	**2**	**1956**
Percentage	**0.05%**	**0.00%**	**98.77%**	**0.46%**	**0.61%**	**0.10%**	

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Monday, January 29, 2024**
Direction: **SB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-C**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	0	0	1	0	1
12:15 AM	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	3	0	3
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	1	0	0	0	1
1:15 AM	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	1	0	1
1:45 AM	0	0	4	0	1	0	5
2:00 AM	0	0	1	0	0	0	1
2:15 AM	0	0	2	0	0	0	2
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	0	0	1	0	1
3:00 AM	0	0	2	0	1	0	3
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	1	0	1	0	2
3:45 AM	0	0	2	0	0	0	2
4:00 AM	0	0	2	0	0	0	2
4:15 AM	0	0	2	0	0	0	2
4:30 AM	0	0	4	0	1	0	5
4:45 AM	0	0	3	0	1	0	4
5:00 AM	0	0	7	0	0	1	8
5:15 AM	0	0	8	0	5	0	13
5:30 AM	0	0	8	0	2	1	11
5:45 AM	0	0	12	0	0	0	12
6:00 AM	0	0	17	1	1	0	19
6:15 AM	0	0	20	0	0	0	20
6:30 AM	0	0	29	1	1	0	31
6:45 AM	0	0	33	0	1	1	35
7:00 AM	0	0	26	1	0	0	27
7:15 AM	0	0	40	0	4	1	45
7:30 AM	0	0	46	1	3	0	50
7:45 AM	0	0	43	0	1	0	44
8:00 AM	0	0	62	2	2	1	67
8:15 AM	0	0	49	0	2	0	51
8:30 AM	0	0	50	0	0	1	51
8:45 AM	0	0	52	1	4	0	57
9:00 AM	0	0	39	0	1	0	40
9:15 AM	0	0	54	1	4	0	59
9:30 AM	0	0	47	1	4	1	53
9:45 AM	0	0	42	1	3	0	46
10:00 AM	0	0	50	0	2	0	52
10:15 AM	0	0	47	0	3	0	50
10:30 AM	0	0	61	1	0	0	62
10:45 AM	0	0	54	0	1	0	55
11:00 AM	0	0	52	0	0	0	52
11:15 AM	0	0	55	1	2	0	58
11:30 AM	0	0	55	0	2	0	57
11:45 AM	0	0	55	0	2	0	57
AM Total	**0**	**0**	**1138**	**12**	**61**	**7**	**1218**
Percentage	**0.00%**	**0.00%**	**93.43%**	**0.99%**	**5.01%**	**0.57%**	
AM Peak	**12:00 AM**	**12:00 AM**	**10:30 AM**	**7:15 AM**	**8:45 AM**	**4:45 AM**	**10:30 AM**
Volume	**0**	**0**	**222**	**3**	**13**	**2**	**227**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	51	0	0	0	51
12:15 PM	0	0	65	1	1	0	67
12:30 PM	0	0	62	0	2	0	64
12:45 PM	0	0	63	0	1	0	64
1:00 PM	1	0	54	1	1	0	57
1:15 PM	0	0	56	0	0	0	56
1:30 PM	0	0	55	0	1	0	56
1:45 PM	0	0	67	1	0	0	68
2:00 PM	0	0	58	1	1	0	60
2:15 PM	0	0	65	0	3	0	68
2:30 PM	0	0	70	1	2	0	73
2:45 PM	0	0	87	0	1	0	88
3:00 PM	0	0	79	1	2	0	82
3:15 PM	0	0	73	0	2	0	75
3:30 PM	0	0	67	1	0	0	68
3:45 PM	0	0	69	0	0	0	69
4:00 PM	0	0	74	0	1	0	75
4:15 PM	0	0	59	0	0	0	59
4:30 PM	0	0	55	1	1	0	57
4:45 PM	0	0	59	0	0	0	59
5:00 PM	0	0	65	0	2	0	67
5:15 PM	0	0	59	1	0	0	60
5:30 PM	0	0	68	1	0	0	69
5:45 PM	0	0	58	0	0	0	58
6:00 PM	0	0	56	0	0	0	56
6:15 PM	0	0	45	1	0	0	46
6:30 PM	0	0	42	1	0	0	43
6:45 PM	0	0	33	1	0	0	34
7:00 PM	0	0	33	0	0	0	33
7:15 PM	0	0	28	1	0	0	29
7:30 PM	0	0	20	0	0	0	20
7:45 PM	0	0	21	0	0	0	21
8:00 PM	0	0	30	0	0	0	30
8:15 PM	0	0	15	0	0	0	15
8:30 PM	0	0	23	0	0	0	23
8:45 PM	0	0	20	0	0	0	20
9:00 PM	0	0	15	0	0	0	15
9:15 PM	0	0	9	0	0	0	9
9:30 PM	0	0	5	0	0	0	5
9:45 PM	0	0	15	0	0	0	15
10:00 PM	0	0	2	0	0	0	2
10:15 PM	0	0	3	0	0	0	3
10:30 PM	0	0	2	0	0	0	2
10:45 PM	0	0	4	0	0	0	4
11:00 PM	0	0	4	0	0	0	4
11:15 PM	0	0	3	0	0	0	3
11:30 PM	0	0	3	0	0	0	3
11:45 PM	0	0	3	0	0	0	3
PM Total	**1**	**0**	**1972**	**14**	**21**	**0**	**2008**
Percentage	**0.05%**	**0.00%**	**98.21%**	**0.70%**	**1.05%**	**0.00%**	
PM Peak	**12:15 PM**	**12:00 PM**	**2:30 PM**	**1:45 PM**	**2:15 PM**	**12:00 PM**	**2:30 PM**
Volume	**1**	**0**	**309**	**3**	**8**	**0**	**318**
Day Total	**1**	**0**	**3110**	**26**	**82**	**7**	**3226**
Percentage	**0.03%**	**0.00%**	**96.40%**	**0.81%**	**2.54%**	**0.22%**	

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File # **239698 ATR-C**

Direction: **NB**

Weekly Report

Day	Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Monday		Week Ave	
Date	01/23/24		01/24/24		01/25/24		01/26/24		01/27/24		01/28/24		01/29/24			
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	1	61	1	50	1	60	4	62	6	66	7	42	3	59	3	57
12:15	1	55	2	51	3	60	1	71	4	70	8	32	0	56	3	56
12:30	2	54	0	55	6	71	2	51	3	62	1	37	4	67	3	57
12:45	0	45	2	51	1	60	0	58	2	45	3	32	0	48	1	48
1:00	0	49	1	51	0	49	0	64	3	54	0	38	0	44	1	50
1:15	2	61	1	62	1	54	2	67	1	54	2	31	1	48	1	54
1:30	1	79	1	52	2	60	3	67	3	60	2	46	2	43	2	58
1:45	1	57	3	41	1	58	0	59	0	53	1	35	1	37	1	49
2:00	0	49	0	51	0	53	1	51	0	48	0	43	0	48	0	49
2:15	1	55	0	61	0	72	1	50	0	40	0	36	1	49	0	52
2:30	0	56	0	49	0	63	2	55	1	60	0	31	0	46	0	51
2:45	1	50	0	48	0	56	1	67	0	38	0	24	3	45	1	47
3:00	1	58	2	36	0	65	1	75	0	54	1	30	6	51	2	53
3:15	1	58	1	42	0	47	1	59	0	46	1	32	0	57	1	49
3:30	0	48	0	61	0	54	0	50	2	39	1	28	2	52	1	47
3:45	2	58	2	54	0	60	0	49	1	49	1	35	3	51	1	51
4:00	3	68	3	62	4	55	0	56	2	47	1	19	1	53	2	51
4:15	1	59	1	46	1	49	1	52	1	36	2	24	4	36	2	43
4:30	0	49	2	52	1	53	2	50	1	37	0	21	2	42	1	43
4:45	2	60	2	54	1	43	2	46	0	34	2	29	5	47	2	45
5:00	3	63	7	60	4	42	2	41	4	43	3	21	6	54	4	46
5:15	4	59	8	44	6	49	6	61	2	43	0	18	10	39	5	45
5:30	6	42	8	57	8	48	6	65	2	34	2	17	9	40	6	43
5:45	13	44	16	42	12	43	10	56	3	35	1	32	9	37	9	41
6:00	13	38	11	46	12	51	10	51	8	44	5	23	11	44	10	42
6:15	18	34	20	43	24	40	16	47	3	32	3	29	18	40	15	38
6:30	17	30	19	35	21	42	25	41	4	38	6	20	23	32	16	34
6:45	38	32	36	36	33	27	33	50	14	34	8	26	33	30	28	34
7:00	43	34	37	24	36	39	26	52	17	36	4	17	32	36	28	34
7:15	49	29	55	34	49	33	49	39	16	25	12	18	55	26	41	29
7:30	56	27	58	19	71	42	65	39	22	21	15	21	64	15	50	26
7:45	76	26	79	29	77	26	52	28	21	21	14	15	61	17	54	23
8:00	54	18	62	17	68	14	60	21	31	23	17	9	58	23	50	18
8:15	64	20	64	14	51	17	76	22	41	14	26	7	60	14	55	15
8:30	82	12	71	15	77	23	83	14	48	13	23	16	87	18	67	16
8:45	67	17	68	21	67	13	74	14	43	13	22	7	61	20	57	15
9:00	57	13	64	19	70	23	56	24	47	14	18	11	48	10	51	16
9:15	64	10	54	13	65	9	56	21	47	17	31	11	39	10	51	13
9:30	69	9	46	12	56	8	61	15	49	14	43	4	52	2	54	9
9:45	61	11	61	9	48	8	61	12	37	14	25	4	55	3	50	9
10:00	48	1	39	9	36	7	49	11	66	10	39	5	40	4	45	7
10:15	49	6	51	11	63	4	57	6	87	12	21	6	46	3	53	7
10:30	44	2	38	8	48	8	47	9	69	3	43	3	40	4	47	5
10:45	53	8	55	1	58	5	69	3	48	7	42	4	50	4	54	5
11:00	47	6	47	8	47	3	57	7	55	7	22	6	48	4	46	6
11:15	51	2	44	4	63	4	39	6	66	8	34	2	49	4	49	4
11:30	51	5	40	6	53	3	63	4	70	8	46	3	60	1	55	4
11:45	58	4	68	5	55	2	60	7	60	8	52	1	62	4	59	4
Total	**1275**	**1731**	**1250**	**1670**	**1300**	**1775**	**1292**	**1925**	**1010**	**1583**	**610**	**1001**	**1224**	**1517**	**1137**	**1600**
Day Total	**3006**		**2920**		**3075**		**3217**		**2593**		**1611**		**2741**		**2738**	
Peak HR	**7:45 AM**	**1:00 PM**	**7:45 AM**	**3:30 PM**	**8:30 AM**	**2:15 PM**	**8:00 AM**	**1:00 PM**	**10:00 AM**	**12:00 PM**	**11:00 AM**	**1:30 PM**	**7:45 AM**	**12:00 PM**	**8:15 AM**	**12:00 PM**
Volume	**276**	**246**	**276**	**223**	**279**	**256**	**293**	**257**	**270**	**243**	**154**	**160**	**266**	**230**	**231**	**219**

Chapel Street
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File # **239698 ATR-C**

Direction: **SB**

Weekly Report

Day	Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Monday		Week Ave	
Date	01/23/24		01/24/24		01/25/24		01/26/24		01/27/24		01/28/24		01/29/24			
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	1	87	1	64	0	80	3	80	3	79	6	52	1	51	2	70
12:15	1	67	1	70	2	80	1	80	5	70	4	47	0	67	2	69
12:30	1	64	0	66	1	63	3	84	1	66	4	45	3	64	2	65
12:45	0	76	1	58	2	53	2	65	0	62	2	46	0	64	1	61
1:00	2	68	0	58	0	62	0	80	0	66	2	49	1	57	1	63
1:15	0	61	1	63	2	67	3	69	2	59	2	43	0	56	1	60
1:30	0	58	3	76	0	68	1	78	1	82	0	41	1	56	1	66
1:45	1	61	3	72	2	64	1	72	6	67	2	41	5	68	3	64
2:00	0	79	0	70	1	77	1	73	2	57	2	53	1	60	1	67
2:15	1	66	1	51	0	79	0	74	2	44	2	32	2	68	1	59
2:30	1	77	0	77	1	56	1	82	1	73	0	50	1	73	1	70
2:45	0	70	2	72	0	80	1	79	0	57	0	51	1	88	1	71
3:00	0	88	3	74	0	57	0	90	1	53	1	46	3	82	1	70
3:15	0	65	2	61	0	53	0	83	0	49	0	39	0	75	0	61
3:30	1	67	2	58	0	72	0	71	0	53	1	34	2	68	1	60
3:45	0	74	1	73	1	48	1	66	1	53	0	38	2	69	1	60
4:00	3	87	1	81	2	77	1	68	2	49	1	28	2	75	2	66
4:15	0	73	2	82	0	64	1	80	1	40	1	28	2	59	1	61
4:30	1	65	0	65	0	70	2	64	1	52	0	28	5	57	1	57
4:45	2	88	5	69	2	71	2	77	0	46	2	30	4	59	2	63
5:00	2	65	6	55	1	62	1	69	2	49	1	33	8	67	3	57
5:15	5	70	8	69	3	65	3	84	0	32	1	26	13	60	5	58
5:30	6	40	8	73	9	67	9	72	1	37	1	25	11	69	6	55
5:45	16	56	18	67	13	62	20	62	4	43	4	37	12	58	12	55
6:00	9	54	20	58	19	68	16	51	6	41	3	47	19	56	13	54
6:15	23	47	23	62	18	59	18	49	3	41	0	31	20	46	15	48
6:30	20	47	27	53	20	47	29	46	7	50	7	29	31	43	20	45
6:45	35	35	33	48	36	44	24	60	19	26	11	25	35	34	28	39
7:00	35	44	28	35	25	47	25	42	21	27	7	30	27	33	24	37
7:15	37	32	46	35	46	38	34	38	17	35	12	19	45	29	34	32
7:30	50	32	46	44	47	29	48	50	26	23	19	20	50	20	41	31
7:45	70	28	49	30	58	38	55	36	24	36	15	20	44	21	45	30
8:00	51	24	74	37	59	40	55	31	29	15	29	20	67	30	52	28
8:15	61	25	51	28	53	24	52	28	39	28	18	16	51	15	46	23
8:30	55	17	63	27	57	22	64	26	37	28	23	14	51	23	50	22
8:45	56	24	57	20	59	27	68	29	49	22	29	10	57	20	54	22
9:00	42	13	62	21	51	20	62	26	40	25	26	8	40	15	46	18
9:15	78	8	58	11	66	18	53	12	70	18	17	9	59	9	57	12
9:30	58	18	47	13	46	9	59	18	42	9	30	6	53	5	48	11
9:45	57	9	61	8	53	8	61	21	66	18	34	9	46	15	54	13
10:00	60	5	56	18	56	15	57	20	50	15	41	7	52	2	53	12
10:15	43	11	44	2	54	6	67	8	79	17	43	13	50	3	54	9
10:30	59	6	52	5	49	9	59	11	68	18	43	2	62	2	56	8
10:45	55	2	67	4	63	11	65	11	79	20	41	1	55	4	61	8
11:00	63	0	61	1	51	6	73	8	54	3	41	5	52	4	56	4
11:15	59	3	51	6	67	2	53	5	67	5	36	2	58	3	56	4
11:30	68	6	61	4	59	1	65	8	85	8	49	1	57	3	63	4
11:45	60	1	60	5	61	9	59	2	72	10	55	2	57	3	61	5
Total	**1248**	**2163**	**1266**	**2199**	**1215**	**2194**	**1278**	**2438**	**1085**	**1876**	**668**	**1288**	**1218**	**2008**	**1140**	**2024**
Day Total	**3411**		**3465**		**3409**		**3716**		**2961**		**1956**		**3226**		**3163**	
Peak HR	**9:15 AM**	**4:00 PM**	**8:00 AM**	**3:45 PM**	**10:45 AM**	**2:00 PM**	**10:15 AM**	**2:30 PM**	**10:45 AM**	**12:00 PM**	**11:00 AM**	**12:00 PM**	**10:30 AM**	**2:30 PM**	**10:45 AM**	**2:30 PM**
Volume	**253**	**313**	**245**	**301**	**240**	**292**	**264**	**334**	**285**	**277**	**181**	**190**	**227**	**318**	**236**	**271**

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: Tuesday, January 23, 2024
Direction: NB

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	0	0	1
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	2	0	0	0	2
12:45 AM	0	0	1	0	0	0	1
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	1	0	1
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	1	0	0	0	1
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	1	0	1
3:45 AM	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	1	1
4:15 AM	0	0	0	0	1	0	1
4:30 AM	0	0	3	0	0	0	3
4:45 AM	0	0	6	0	0	0	6
5:00 AM	0	0	1	0	0	0	1
5:15 AM	0	0	4	0	0	0	4
5:30 AM	0	0	7	0	0	0	7
5:45 AM	0	0	7	0	1	0	8
6:00 AM	0	0	11	0	1	0	12
6:15 AM	0	0	9	0	0	0	9
6:30 AM	0	0	16	0	0	0	16
6:45 AM	0	0	20	0	0	1	21
7:00 AM	0	0	25	0	0	0	25
7:15 AM	0	0	33	0	1	0	34
7:30 AM	0	0	46	0	1	0	47
7:45 AM	0	0	102	3	1	0	106
8:00 AM	0	0	73	1	0	0	74
8:15 AM	0	1	40	0	0	0	41
8:30 AM	0	0	52	0	2	0	54
8:45 AM	0	0	45	0	4	1	50
9:00 AM	0	0	41	0	1	0	42
9:15 AM	0	0	39	0	0	0	39
9:30 AM	0	0	51	0	2	1	54
9:45 AM	0	0	40	0	0	1	41
10:00 AM	0	0	28	0	2	0	30
10:15 AM	0	0	38	0	2	0	40
10:30 AM	0	0	47	0	1	1	49
10:45 AM	0	0	49	0	1	0	50
11:00 AM	0	0	39	0	1	0	40
11:15 AM	0	0	55	0	0	0	55
11:30 AM	0	0	55	0	0	0	55
11:45 AM	0	0	48	0	0	0	48
AM Total	**0**	**1**	**1037**	**4**	**24**	**6**	**1072**
Percentage	**0.00%**	**0.09%**	**96.74%**	**0.37%**	**2.24%**	**0.56%**	
AM Peak	**12:00 AM**	**7:30 AM**	**7:45 AM**	**7:15 AM**	**8:15 AM**	**8:45 AM**	**7:45 AM**
Volume	**0**	**1**	**267**	**4**	**7**	**2**	**275**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	52	0	1	0	53
12:15 PM	0	0	33	0	1	0	34
12:30 PM	0	0	37	0	0	0	37
12:45 PM	0	0	46	0	0	0	46
1:00 PM	0	0	38	0	1	0	39
1:15 PM	0	0	51	0	2	0	53
1:30 PM	0	0	26	0	0	0	26
1:45 PM	0	0	48	0	2	0	50
2:00 PM	0	0	47	0	0	0	47
2:15 PM	0	0	54	0	0	0	54
2:30 PM	0	0	43	0	0	0	43
2:45 PM	0	0	66	0	0	1	67
3:00 PM	0	0	53	0	0	0	53
3:15 PM	0	0	56	0	3	0	59
3:30 PM	0	0	64	0	0	0	64
3:45 PM	0	0	57	0	0	0	57
4:00 PM	0	0	47	0	1	0	48
4:15 PM	0	0	48	0	0	0	48
4:30 PM	0	0	58	0	0	0	58
4:45 PM	0	0	50	1	0	0	51
5:00 PM	0	0	47	0	0	0	47
5:15 PM	0	0	38	0	1	0	39
5:30 PM	0	0	48	0	0	0	48
5:45 PM	0	0	34	0	0	0	34
6:00 PM	0	0	31	0	0	0	31
6:15 PM	0	0	33	0	1	0	34
6:30 PM	0	0	33	0	0	0	33
6:45 PM	0	0	36	0	0	0	36
7:00 PM	0	0	31	0	0	0	31
7:15 PM	0	0	27	0	0	0	27
7:30 PM	0	0	8	0	0	0	8
7:45 PM	0	0	30	0	0	0	30
8:00 PM	0	0	15	0	0	0	15
8:15 PM	0	0	18	0	1	0	19
8:30 PM	0	0	17	0	0	0	17
8:45 PM	0	0	17	0	0	0	17
9:00 PM	0	0	15	0	0	0	15
9:15 PM	0	0	5	0	1	0	6
9:30 PM	0	0	4	0	0	0	4
9:45 PM	0	0	3	0	0	0	3
10:00 PM	0	0	9	0	0	0	9
10:15 PM	0	0	3	0	0	0	3
10:30 PM	0	0	1	0	0	0	1
10:45 PM	0	0	5	0	2	0	7
11:00 PM	0	0	2	0	0	0	2
11:15 PM	0	0	3	0	0	0	3
11:30 PM	0	0	3	0	0	0	3
11:45 PM	0	0	2	0	0	0	2
PM Total	**0**	**0**	**1492**	**1**	**17**	**1**	**1511**
Percentage	**0.00%**	**0.00%**	**98.74%**	**0.07%**	**1.13%**	**0.07%**	
PM Peak	**12:00 PM**	**12:00 PM**	**2:45 PM**	**4:00 PM**	**1:00 PM**	**2:00 PM**	**2:45 PM**
Volume	**0**	**0**	**239**	**1**	**5**	**1**	**243**
Day Total	**0**	**1**	**2529**	**5**	**41**	**7**	**2583**
Percentage	**0.00%**	**0.04%**	**97.91%**	**0.19%**	**1.59%**	**0.27%**	

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Wednesday, January 24, 2024**
Direction: **NB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-D**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	0	0	0	0	0
12:15 AM	0	0	2	0	0	0	2
12:30 AM	0	0	1	0	0	0	1
12:45 AM	0	0	2	0	0	1	3
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	1	0	1
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	1	0	0	0	1
2:30 AM	0	0	0	0	1	0	1
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	3	0	0	0	3
3:45 AM	0	0	5	0	0	0	5
4:00 AM	0	0	3	0	1	0	4
4:15 AM	0	0	3	0	0	1	4
4:30 AM	0	0	1	0	0	0	1
4:45 AM	0	0	2	0	4	0	6
5:00 AM	0	0	1	0	0	0	1
5:15 AM	0	0	7	0	1	0	8
5:30 AM	0	0	4	0	0	0	4
5:45 AM	0	0	12	0	1	1	14
6:00 AM	0	0	9	0	1	0	10
6:15 AM	0	0	14	0	1	1	16
6:30 AM	0	0	11	0	1	0	12
6:45 AM	0	0	18	0	0	0	18
7:00 AM	0	0	21	0	2	0	23
7:15 AM	0	0	33	0	1	0	34
7:30 AM	0	0	44	0	0	1	45
7:45 AM	0	0	99	2	0	0	101
8:00 AM	0	0	95	1	1	0	97
8:15 AM	0	0	49	0	0	0	49
8:30 AM	0	0	38	0	0	0	38
8:45 AM	0	0	45	0	2	0	47
9:00 AM	0	0	52	0	3	0	55
9:15 AM	0	0	35	0	1	0	36
9:30 AM	0	0	40	0	5	0	45
9:45 AM	0	0	47	0	2	0	49
10:00 AM	0	0	47	0	0	0	47
10:15 AM	0	0	45	0	0	0	45
10:30 AM	0	0	38	0	1	0	39
10:45 AM	0	0	43	0	1	0	44
11:00 AM	0	0	38	0	0	0	38
11:15 AM	0	0	58	0	2	0	60
11:30 AM	0	0	39	0	1	0	40
11:45 AM	0	0	55	0	1	0	56
AM Total	**0**	**0**	**1062**	**3**	**35**	**5**	**1105**
Percentage	**0.00%**	**0.00%**	**96.11%**	**0.27%**	**3.17%**	**0.45%**	
AM Peak	**12:00 AM**	**12:00 AM**	**7:30 AM**	**7:15 AM**	**8:45 AM**	**5:30 AM**	**7:30 AM**
Volume	**0**	**0**	**287**	**3**	**11**	**2**	**292**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	43	0	1	0	44
12:15 PM	0	0	54	0	0	0	54
12:30 PM	0	0	41	0	0	0	41
12:45 PM	0	0	52	0	0	0	52
1:00 PM	0	0	42	0	0	0	42
1:15 PM	0	0	44	0	0	0	44
1:30 PM	0	0	52	0	0	0	52
1:45 PM	0	0	51	0	0	0	51
2:00 PM	0	0	38	0	0	0	38
2:15 PM	0	0	48	0	0	0	48
2:30 PM	0	0	41	0	1	0	42
2:45 PM	0	0	50	1	1	0	52
3:00 PM	0	0	56	1	0	0	57
3:15 PM	0	0	43	0	1	0	44
3:30 PM	0	0	49	0	0	0	49
3:45 PM	0	0	59	0	0	0	59
4:00 PM	0	0	56	0	0	0	56
4:15 PM	0	0	37	1	1	0	39
4:30 PM	0	0	40	0	1	0	41
4:45 PM	0	0	44	0	1	0	45
5:00 PM	0	0	54	0	1	0	55
5:15 PM	0	0	45	0	1	0	46
5:30 PM	0	0	41	0	1	0	42
5:45 PM	0	0	41	0	0	0	41
6:00 PM	0	0	38	0	0	0	38
6:15 PM	0	0	27	0	0	0	27
6:30 PM	0	0	34	0	0	0	34
6:45 PM	0	0	44	1	0	0	45
7:00 PM	0	0	25	0	0	0	25
7:15 PM	0	0	25	0	0	0	25
7:30 PM	0	0	19	0	0	0	19
7:45 PM	0	0	35	0	0	0	35
8:00 PM	0	0	26	0	0	0	26
8:15 PM	0	0	14	0	0	0	14
8:30 PM	0	0	13	0	0	0	13
8:45 PM	0	0	18	0	0	0	18
9:00 PM	0	0	11	0	0	0	11
9:15 PM	0	0	12	0	0	0	12
9:30 PM	0	0	8	0	0	0	8
9:45 PM	0	0	7	0	0	0	7
10:00 PM	0	0	2	0	0	0	2
10:15 PM	0	0	4	0	0	0	4
10:30 PM	0	0	1	0	0	0	1
10:45 PM	0	0	1	0	0	0	1
11:00 PM	0	0	3	0	0	0	3
11:15 PM	0	0	0	0	0	0	0
11:30 PM	0	0	1	0	0	0	1
11:45 PM	0	0	3	0	0	0	3
PM Total	**0**	**0**	**1492**	**4**	**10**	**0**	**1506**
Percentage	**0.00%**	**0.00%**	**99.07%**	**0.27%**	**0.66%**	**0.00%**	
PM Peak	**12:00 PM**	**12:00 PM**	**3:00 PM**	**2:15 PM**	**4:15 PM**	**12:00 PM**	**3:00 PM**
Volume	**0**	**0**	**207**	**2**	**4**	**0**	**209**
Day Total	**0**	**0**	**2554**	**7**	**45**	**5**	**2611**
Percentage	**0.00%**	**0.00%**	**97.82%**	**0.27%**	**1.72%**	**0.19%**	

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: Thursday, January 25, 2024
Direction: NB

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	0	0	1
12:15 AM	0	0	0	0	0	0	0
12:30 AM	0	0	1	0	0	0	1
12:45 AM	0	0	1	0	0	0	1
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	2	0	0	0	2
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	2	0	0	0	2
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	1	1	0	0	2
3:30 AM	0	0	1	0	0	0	1
3:45 AM	0	0	2	0	0	0	2
4:00 AM	0	0	1	0	1	1	3
4:15 AM	0	0	1	0	0	1	2
4:30 AM	0	0	2	0	0	0	2
4:45 AM	0	0	3	0	0	1	4
5:00 AM	0	0	2	0	0	0	2
5:15 AM	0	0	3	0	1	0	4
5:30 AM	0	0	11	0	2	0	13
5:45 AM	0	0	8	0	0	1	9
6:00 AM	0	0	8	0	1	0	9
6:15 AM	0	0	11	0	2	0	13
6:30 AM	0	0	19	0	1	0	20
6:45 AM	0	0	24	0	0	0	24
7:00 AM	0	0	26	0	0	0	26
7:15 AM	0	0	25	0	1	0	26
7:30 AM	0	0	62	0	1	0	63
7:45 AM	0	0	112	2	0	0	114
8:00 AM	0	0	71	1	0	0	72
8:15 AM	0	0	44	0	0	0	44
8:30 AM	0	0	50	0	0	0	50
8:45 AM	0	0	46	0	1	0	47
9:00 AM	0	0	36	0	2	1	39
9:15 AM	0	0	38	0	1	0	39
9:30 AM	0	0	45	1	1	0	47
9:45 AM	0	0	36	0	2	0	38
10:00 AM	0	0	47	0	4	0	51
10:15 AM	0	0	38	0	4	1	43
10:30 AM	0	0	47	0	1	0	48
10:45 AM	0	0	35	0	2	0	37
11:00 AM	0	0	43	0	1	0	44
11:15 AM	0	0	44	0	0	0	44
11:30 AM	0	0	46	0	1	0	47
11:45 AM	0	0	37	0	0	0	37
AM Total	**0**	**0**	**1033**	**5**	**30**	**6**	**1074**
Percentage	**0.00%**	**0.00%**	**96.18%**	**0.47%**	**2.79%**	**0.56%**	
AM Peak	**12:00 AM**	**12:00 AM**	**7:30 AM**	**7:15 AM**	**9:30 AM**	**4:00 AM**	**7:30 AM**
Volume	**0**	**0**	**289**	**3**	**11**	**3**	**293**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	1	49	0	1	0	51
12:15 PM	0	0	44	0	0	0	44
12:30 PM	0	0	52	0	0	0	52
12:45 PM	0	0	51	0	0	0	51
1:00 PM	1	0	56	1	0	0	58
1:15 PM	0	0	40	0	2	0	42
1:30 PM	0	0	46	0	1	0	47
1:45 PM	0	0	40	0	2	0	42
2:00 PM	0	0	61	0	0	0	61
2:15 PM	0	0	62	0	0	1	63
2:30 PM	0	0	67	0	0	0	67
2:45 PM	0	0	59	1	0	0	60
3:00 PM	0	0	56	0	0	0	56
3:15 PM	0	0	46	1	0	0	47
3:30 PM	0	0	72	0	0	0	72
3:45 PM	0	0	56	1	0	0	57
4:00 PM	0	0	52	0	0	0	52
4:15 PM	0	0	58	0	0	0	58
4:30 PM	0	0	57	0	1	0	58
4:45 PM	0	0	50	0	0	0	50
5:00 PM	0	0	52	0	0	0	52
5:15 PM	0	0	51	0	0	0	51
5:30 PM	0	0	42	0	1	0	43
5:45 PM	0	0	38	1	0	0	39
6:00 PM	0	0	28	0	0	0	28
6:15 PM	0	0	34	0	0	0	34
6:30 PM	0	0	26	0	1	0	27
6:45 PM	0	0	32	0	0	0	32
7:00 PM	0	0	40	0	0	0	40
7:15 PM	0	0	28	0	0	0	28
7:30 PM	0	0	27	0	0	0	27
7:45 PM	0	0	31	0	0	0	31
8:00 PM	0	0	20	0	0	0	20
8:15 PM	0	0	10	0	0	0	10
8:30 PM	0	0	16	0	0	0	16
8:45 PM	0	0	16	0	0	0	16
9:00 PM	0	0	6	0	0	0	6
9:15 PM	0	0	14	0	0	0	14
9:30 PM	0	0	4	0	0	0	4
9:45 PM	0	0	4	0	0	1	5
10:00 PM	0	0	12	0	0	0	12
10:15 PM	0	0	1	0	0	0	1
10:30 PM	0	0	6	0	0	0	6
10:45 PM	0	0	4	0	0	0	4
11:00 PM	0	0	5	0	0	0	5
11:15 PM	0	0	6	0	0	0	6
11:30 PM	0	0	0	0	0	0	0
11:45 PM	0	0	1	0	0	0	1
PM Total	**1**	**1**	**1628**	**5**	**9**	**2**	**1646**
Percentage	**0.06%**	**0.06%**	**98.91%**	**0.30%**	**0.55%**	**0.12%**	
PM Peak	**12:15 PM**	**12:00 PM**	**2:00 PM**	**2:30 PM**	**1:00 PM**	**1:30 PM**	**2:00 PM**
Volume	**1**	**1**	**249**	**2**	**5**	**1**	**251**
Day Total	**1**	**1**	**2661**	**10**	**39**	**8**	**2720**
Percentage	**0.04%**	**0.04%**	**97.83%**	**0.37%**	**1.43%**	**0.29%**	

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: Friday, January 26, 2024
Direction: NB

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0
12:30 AM	0	0	2	0	0	0	2
12:45 AM	0	0	1	0	0	0	1
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	1	0	0	0	1
3:45 AM	0	0	0	0	0	0	0
4:00 AM	0	0	3	0	0	1	4
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	2	0	0	0	2
4:45 AM	0	0	4	0	0	0	4
5:00 AM	0	0	2	0	0	0	2
5:15 AM	0	0	1	0	1	0	2
5:30 AM	0	0	7	0	0	0	7
5:45 AM	0	0	6	0	1	0	7
6:00 AM	0	0	3	0	2	0	5
6:15 AM	0	0	15	0	0	0	15
6:30 AM	0	0	17	0	0	0	17
6:45 AM	0	0	18	0	1	0	19
7:00 AM	0	0	22	0	2	0	24
7:15 AM	0	0	18	0	0	0	18
7:30 AM	0	0	53	0	2	0	55
7:45 AM	0	0	106	3	0	1	110
8:00 AM	0	0	70	1	0	0	71
8:15 AM	0	0	62	0	1	0	63
8:30 AM	0	0	42	0	2	0	44
8:45 AM	0	0	57	1	2	0	60
9:00 AM	0	0	36	0	1	0	37
9:15 AM	0	0	40	1	5	0	46
9:30 AM	0	0	66	0	2	0	68
9:45 AM	0	0	45	0	1	0	46
10:00 AM	1	0	53	0	1	0	55
10:15 AM	0	0	40	0	1	0	41
10:30 AM	0	0	48	0	3	0	51
10:45 AM	0	0	43	1	0	0	44
11:00 AM	0	0	39	0	0	0	39
11:15 AM	0	0	57	0	1	0	58
11:30 AM	0	0	50	0	1	0	51
11:45 AM	0	0	51	0	1	0	52
AM Total	**1**	**0**	**1082**	**7**	**31**	**2**	**1123**
Percentage	**0.09%**	**0.00%**	**96.35%**	**0.62%**	**2.76%**	**0.18%**	
AM Peak	**9:15 AM**	**12:00 AM**	**7:30 AM**	**7:15 AM**	**8:30 AM**	**3:15 AM**	**7:30 AM**
Volume	**1**	**0**	**291**	**4**	**10**	**1**	**299**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	54	0	2	0	56
12:15 PM	0	0	54	0	0	0	54
12:30 PM	0	0	55	0	0	0	55
12:45 PM	0	0	48	0	1	0	49
1:00 PM	0	0	48	0	0	0	48
1:15 PM	0	0	50	0	1	0	51
1:30 PM	0	0	56	0	0	0	56
1:45 PM	0	0	78	0	0	0	78
2:00 PM	0	0	54	1	2	0	57
2:15 PM	0	0	55	0	0	0	55
2:30 PM	0	0	61	0	0	1	62
2:45 PM	0	0	53	0	0	0	53
3:00 PM	0	0	65	0	0	0	65
3:15 PM	0	0	37	0	0	0	37
3:30 PM	0	0	44	0	0	0	44
3:45 PM	0	0	57	0	0	0	57
4:00 PM	0	0	44	0	1	1	46
4:15 PM	0	0	41	0	0	0	41
4:30 PM	0	0	55	0	0	0	55
4:45 PM	0	0	51	0	0	0	51
5:00 PM	0	0	45	0	0	0	45
5:15 PM	0	0	35	0	0	0	35
5:30 PM	0	0	49	0	0	0	49
5:45 PM	0	1	49	0	0	0	50
6:00 PM	0	0	48	0	0	0	48
6:15 PM	0	0	31	0	0	0	31
6:30 PM	0	0	32	0	0	0	32
6:45 PM	0	0	48	0	0	0	48
7:00 PM	0	0	38	0	0	0	38
7:15 PM	0	0	23	0	0	0	23
7:30 PM	0	0	30	0	0	0	30
7:45 PM	0	0	30	0	0	0	30
8:00 PM	0	0	23	0	0	0	23
8:15 PM	0	0	15	0	0	1	16
8:30 PM	0	0	15	0	0	0	15
8:45 PM	0	0	10	0	0	0	10
9:00 PM	0	0	12	0	0	0	12
9:15 PM	0	0	8	0	0	0	8
9:30 PM	0	0	12	0	0	0	12
9:45 PM	0	0	18	0	0	0	18
10:00 PM	0	0	11	0	0	0	11
10:15 PM	0	0	4	0	0	0	4
10:30 PM	0	0	13	0	0	0	13
10:45 PM	0	0	4	0	0	0	4
11:00 PM	0	0	10	0	0	0	10
11:15 PM	0	0	3	0	0	0	3
11:30 PM	0	0	1	0	0	0	1
11:45 PM	0	0	1	0	0	0	1
PM Total	**0**	**1**	**1678**	**1**	**7**	**3**	**1690**
Percentage	**0.00%**	**0.06%**	**99.29%**	**0.06%**	**0.41%**	**0.18%**	
PM Peak	**12:00 PM**	**5:00 PM**	**1:45 PM**	**1:15 PM**	**12:00 PM**	**1:45 PM**	**1:45 PM**
Volume	**0**	**1**	**248**	**1**	**3**	**1**	**252**
Day Total	**1**	**1**	**2760**	**8**	**38**	**5**	**2813**
Percentage	**0.04%**	**0.04%**	**98.12%**	**0.28%**	**1.35%**	**0.18%**	

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Saturday, January 27, 2024**
Direction: **NB**

PDI File #: **239698 ATR-D**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	3	0	0	0	3
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	1	0	0	0	1
12:45 AM	0	0	2	0	0	0	2
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	3	0	0	0	3
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	2	0	0	0	2
2:00 AM	0	0	1	0	1	0	2
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	1	0	1
3:30 AM	0	0	3	0	0	0	3
3:45 AM	0	0	0	0	0	0	0
4:00 AM	0	0	1	0	0	0	1
4:15 AM	0	0	0	0	1	0	1
4:30 AM	0	0	1	0	0	0	1
4:45 AM	0	0	3	0	0	0	3
5:00 AM	0	0	3	0	0	0	3
5:15 AM	0	0	1	0	0	0	1
5:30 AM	0	0	4	0	2	2	8
5:45 AM	0	0	5	0	0	0	5
6:00 AM	0	0	2	0	1	0	3
6:15 AM	0	0	8	0	0	0	8
6:30 AM	0	0	4	0	0	0	4
6:45 AM	0	0	10	0	0	0	10
7:00 AM	0	0	6	0	1	0	7
7:15 AM	0	0	14	0	0	0	14
7:30 AM	0	0	21	0	0	0	21
7:45 AM	0	0	28	0	0	0	28
8:00 AM	0	0	20	0	0	0	20
8:15 AM	0	0	27	1	0	0	28
8:30 AM	0	0	20	0	0	0	20
8:45 AM	0	0	19	0	1	0	20
9:00 AM	0	0	26	0	0	0	26
9:15 AM	0	0	44	0	0	0	44
9:30 AM	0	0	41	0	0	0	41
9:45 AM	0	0	28	0	0	1	29
10:00 AM	0	0	37	0	1	0	38
10:15 AM	0	0	43	0	0	0	43
10:30 AM	0	0	42	0	0	0	42
10:45 AM	0	0	49	0	0	0	49
11:00 AM	0	0	54	0	0	0	54
11:15 AM	0	0	60	0	1	0	61
11:30 AM	0	0	48	0	0	0	48
11:45 AM	0	0	70	0	0	0	70
AM Total	**0**	**0**	**756**	**1**	**10**	**3**	**770**
Percentage	**0.00%**	**0.00%**	**98.18%**	**0.13%**	**1.30%**	**0.39%**	
AM Peak	**12:00 AM**	**12:00 AM**	**11:00 AM**	**7:30 AM**	**5:15 AM**	**4:45 AM**	**11:00 AM**
Volume	**0**	**0**	**232**	**1**	**3**	**2**	**233**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	48	0	0	0	48
12:15 PM	0	0	45	0	1	0	46
12:30 PM	0	0	52	0	0	0	52
12:45 PM	1	0	72	0	0	0	73
1:00 PM	0	0	68	0	1	0	69
1:15 PM	0	0	57	0	0	0	57
1:30 PM	0	0	57	0	0	0	57
1:45 PM	0	0	48	0	0	0	48
2:00 PM	0	0	70	0	0	0	70
2:15 PM	0	0	51	0	0	0	51
2:30 PM	0	0	48	0	1	0	49
2:45 PM	0	0	53	0	0	0	53
3:00 PM	0	0	32	0	0	0	32
3:15 PM	0	0	44	0	0	0	44
3:30 PM	0	0	50	1	0	0	51
3:45 PM	0	0	54	0	0	0	54
4:00 PM	0	0	56	0	0	0	56
4:15 PM	0	0	41	0	0	0	41
4:30 PM	0	0	28	0	0	0	28
4:45 PM	0	0	34	0	1	0	35
5:00 PM	0	0	36	1	0	0	37
5:15 PM	0	0	24	0	0	0	24
5:30 PM	0	0	35	0	0	0	35
5:45 PM	0	0	36	0	0	0	36
6:00 PM	0	1	36	0	0	0	37
6:15 PM	0	0	25	0	0	0	25
6:30 PM	0	0	30	0	0	0	30
6:45 PM	0	0	25	0	0	0	25
7:00 PM	0	0	23	0	0	0	23
7:15 PM	0	0	26	0	0	1	27
7:30 PM	0	0	22	0	0	0	22
7:45 PM	0	0	17	0	0	0	17
8:00 PM	0	0	17	0	0	0	17
8:15 PM	0	0	16	0	0	0	16
8:30 PM	0	0	21	0	0	0	21
8:45 PM	0	0	15	0	2	0	17
9:00 PM	0	0	13	0	0	0	13
9:15 PM	0	0	9	0	0	0	9
9:30 PM	0	0	10	0	0	0	10
9:45 PM	0	0	7	0	0	0	7
10:00 PM	0	0	9	0	0	0	9
10:15 PM	0	0	4	1	0	0	5
10:30 PM	0	0	9	0	0	0	9
10:45 PM	0	0	3	0	0	0	3
11:00 PM	0	0	8	0	0	0	8
11:15 PM	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0
11:45 PM	0	0	6	0	0	0	6
PM Total	**1**	**1**	**1490**	**3**	**6**	**1**	**1502**
Percentage	**0.07%**	**0.07%**	**99.20%**	**0.20%**	**0.40%**	**0.07%**	
PM Peak	**12:00 PM**	**5:15 PM**	**12:45 PM**	**2:45 PM**	**12:15 PM**	**6:30 PM**	**12:45 PM**
Volume	**1**	**1**	**254**	**1**	**2**	**1**	**256**
Day Total	**1**	**1**	**2246**	**4**	**16**	**4**	**2272**
Percentage	**0.04%**	**0.04%**	**98.86%**	**0.18%**	**0.70%**	**0.18%**	

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Sunday, January 28, 2024**
Direction: **NB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-D**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	0	0	0	0	0
12:15 AM	0	0	7	0	0	0	7
12:30 AM	0	0	2	0	0	0	2
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	3	0	0	0	3
2:00 AM	0	0	2	0	0	0	2
2:15 AM	0	0	1	0	0	0	1
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	1	0	0	0	1
3:45 AM	0	0	1	0	0	0	1
4:00 AM	0	0	0	0	0	0	0
4:15 AM	0	0	1	0	0	0	1
4:30 AM	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0
5:00 AM	0	0	1	0	0	0	1
5:15 AM	0	0	0	0	0	0	0
5:30 AM	0	0	3	0	0	0	3
5:45 AM	0	0	3	0	1	0	4
6:00 AM	0	0	2	0	0	0	2
6:15 AM	0	0	3	0	0	0	3
6:30 AM	0	0	5	0	0	0	5
6:45 AM	0	0	9	0	0	0	9
7:00 AM	0	0	1	0	0	0	1
7:15 AM	0	0	16	0	0	0	16
7:30 AM	0	0	6	0	0	0	6
7:45 AM	0	0	20	0	0	0	20
8:00 AM	0	0	14	0	0	0	14
8:15 AM	0	0	20	0	0	0	20
8:30 AM	0	0	13	0	0	0	13
8:45 AM	0	0	19	0	0	0	19
9:00 AM	0	0	17	0	0	0	17
9:15 AM	0	0	32	0	0	0	32
9:30 AM	0	0	31	0	0	0	31
9:45 AM	0	0	16	0	0	0	16
10:00 AM	0	0	31	0	0	0	31
10:15 AM	0	0	20	0	0	0	20
10:30 AM	0	0	24	0	0	0	24
10:45 AM	0	0	46	0	0	0	46
11:00 AM	0	0	35	0	0	0	35
11:15 AM	0	0	27	0	0	0	27
11:30 AM	0	0	28	0	0	0	28
11:45 AM	0	0	45	0	0	0	45
AM Total	**0**	**0**	**506**	**0**	**1**	**0**	**507**
Percentage	**0.00%**	**0.00%**	**99.80%**	**0.00%**	**0.20%**	**0.00%**	
AM Peak	**12:00 AM**	**12:00 AM**	**10:45 AM**	**12:00 AM**	**5:00 AM**	**12:00 AM**	**10:45 AM**
Volume	**0**	**0**	**136**	**0**	**1**	**0**	**136**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	20	0	0	0	20
12:15 PM	0	0	39	0	0	0	39
12:30 PM	0	0	27	0	0	0	27
12:45 PM	0	0	32	0	0	0	32
1:00 PM	0	0	34	0	1	0	35
1:15 PM	0	0	41	0	0	0	41
1:30 PM	0	0	41	0	0	0	41
1:45 PM	0	0	37	0	0	0	37
2:00 PM	0	0	27	0	0	0	27
2:15 PM	0	0	26	0	3	0	29
2:30 PM	0	0	27	0	0	0	27
2:45 PM	0	0	31	0	0	0	31
3:00 PM	0	0	34	0	0	0	34
3:15 PM	0	0	29	0	1	0	30
3:30 PM	0	0	22	0	0	0	22
3:45 PM	0	0	20	0	0	0	20
4:00 PM	0	0	17	0	0	0	17
4:15 PM	0	0	17	0	0	0	17
4:30 PM	0	0	17	0	0	0	17
4:45 PM	0	0	28	0	0	0	28
5:00 PM	0	0	26	0	0	0	26
5:15 PM	0	0	20	0	0	0	20
5:30 PM	0	0	20	0	0	0	20
5:45 PM	0	0	24	0	0	0	24
6:00 PM	0	0	32	0	0	0	32
6:15 PM	0	0	25	0	0	0	25
6:30 PM	0	0	19	0	0	0	19
6:45 PM	0	0	36	0	0	0	36
7:00 PM	0	0	19	0	0	0	19
7:15 PM	0	0	24	0	0	0	24
7:30 PM	0	0	16	0	0	0	16
7:45 PM	0	0	10	0	0	0	10
8:00 PM	0	0	6	1	0	0	7
8:15 PM	0	0	5	0	0	0	5
8:30 PM	0	0	6	0	0	0	6
8:45 PM	0	0	2	0	1	0	3
9:00 PM	0	0	3	0	0	1	4
9:15 PM	0	0	4	0	0	0	4
9:30 PM	0	0	1	0	0	0	1
9:45 PM	0	0	2	0	1	0	3
10:00 PM	0	0	7	0	0	0	7
10:15 PM	0	0	7	0	1	1	9
10:30 PM	0	0	6	0	1	0	7
10:45 PM	0	0	1	0	0	0	1
11:00 PM	0	0	2	0	0	0	2
11:15 PM	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0
PM Total	**0**	**0**	**889**	**1**	**9**	**2**	**901**
Percentage	**0.00%**	**0.00%**	**98.67%**	**0.11%**	**1.00%**	**0.22%**	
PM Peak	**12:00 PM**	**12:00 PM**	**1:00 PM**	**7:15 PM**	**1:30 PM**	**8:15 PM**	**1:00 PM**
Volume	**0**	**0**	**153**	**1**	**3**	**1**	**154**
Day Total	**0**	**0**	**1395**	**1**	**10**	**2**	**1408**
Percentage	**0.00%**	**0.00%**	**99.08%**	**0.07%**	**0.71%**	**0.14%**	

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: Monday, January 29, 2024
Direction: NB

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	0	0	2	0	2
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	1	0	1	0	2
1:15 AM	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	2	0	0	0	2
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	2	0	3	0	5
3:15 AM	0	0	0	0	1	0	1
3:30 AM	0	0	1	0	1	1	3
3:45 AM	0	0	3	0	2	0	5
4:00 AM	0	0	0	0	1	0	1
4:15 AM	0	0	2	0	0	0	2
4:30 AM	0	0	3	0	0	0	3
4:45 AM	0	0	6	0	3	0	9
5:00 AM	0	0	5	0	1	0	6
5:15 AM	0	0	5	0	2	0	7
5:30 AM	0	0	10	0	1	0	11
5:45 AM	0	0	11	0	2	0	13
6:00 AM	0	0	9	0	1	0	10
6:15 AM	0	0	15	0	0	0	15
6:30 AM	0	0	15	0	0	0	15
6:45 AM	0	0	31	0	1	0	32
7:00 AM	0	0	25	0	1	0	26
7:15 AM	0	0	38	0	2	0	40
7:30 AM	0	0	55	0	0	0	55
7:45 AM	0	0	118	2	2	0	122
8:00 AM	0	0	72	1	2	0	75
8:15 AM	0	0	48	0	1	1	50
8:30 AM	0	0	45	0	1	0	46
8:45 AM	0	0	27	0	2	0	29
9:00 AM	0	0	50	0	0	0	50
9:15 AM	0	0	41	0	1	0	42
9:30 AM	0	0	48	0	1	0	49
9:45 AM	0	0	36	0	2	0	38
10:00 AM	0	0	35	0	0	0	35
10:15 AM	0	0	27	0	0	0	27
10:30 AM	0	0	32	1	1	0	34
10:45 AM	0	0	31	0	1	0	32
11:00 AM	0	0	34	0	0	0	34
11:15 AM	0	0	40	0	1	0	41
11:30 AM	0	0	30	0	2	0	32
11:45 AM	0	0	43	0	3	0	46
AM Total	**0**	**0**	**999**	**4**	**45**	**2**	**1050**
Percentage	**0.00%**	**0.00%**	**95.14%**	**0.38%**	**4.29%**	**0.19%**	
AM Peak	**12:00 AM**	**12:00 AM**	**7:30 AM**	**7:15 AM**	**3:00 AM**	**2:45 AM**	**7:30 AM**
Volume	**0**	**0**	**293**	**3**	**7**	**1**	**302**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	40	0	1	0	41
12:15 PM	0	0	46	0	0	0	46
12:30 PM	0	0	53	0	0	0	53
12:45 PM	0	0	49	0	0	0	49
1:00 PM	0	0	46	0	3	0	49
1:15 PM	0	0	49	0	0	0	49
1:30 PM	0	0	43	0	1	0	44
1:45 PM	0	0	42	0	1	0	43
2:00 PM	0	0	33	0	0	0	33
2:15 PM	0	0	62	0	0	0	62
2:30 PM	0	0	62	1	1	0	64
2:45 PM	0	0	43	0	1	0	44
3:00 PM	1	0	42	0	0	0	43
3:15 PM	0	0	54	0	0	0	54
3:30 PM	0	0	53	0	0	0	53
3:45 PM	0	0	44	0	0	0	44
4:00 PM	0	0	69	0	0	0	69
4:15 PM	0	0	53	0	1	0	54
4:30 PM	0	0	51	0	0	0	51
4:45 PM	0	0	44	1	0	0	45
5:00 PM	0	0	52	0	1	0	53
5:15 PM	0	0	38	0	0	0	38
5:30 PM	0	0	42	0	0	0	42
5:45 PM	0	0	44	0	0	0	44
6:00 PM	0	0	37	0	0	0	37
6:15 PM	0	0	42	0	0	0	42
6:30 PM	0	0	28	1	0	0	29
6:45 PM	0	0	42	0	1	0	43
7:00 PM	0	0	29	0	0	0	29
7:15 PM	0	0	14	0	0	0	14
7:30 PM	0	0	20	0	0	0	20
7:45 PM	0	0	27	0	0	0	27
8:00 PM	0	0	19	0	0	0	19
8:15 PM	0	0	9	0	0	0	9
8:30 PM	0	0	15	0	0	0	15
8:45 PM	0	0	14	0	0	0	14
9:00 PM	0	0	7	0	0	0	7
9:15 PM	0	0	12	0	0	0	12
9:30 PM	0	0	3	0	0	0	3
9:45 PM	0	0	3	0	0	0	3
10:00 PM	0	0	4	0	0	0	4
10:15 PM	0	0	5	0	0	0	5
10:30 PM	0	0	5	0	0	0	5
10:45 PM	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0
11:30 PM	0	0	2	0	0	0	2
11:45 PM	0	0	0	0	0	0	0
PM Total	**1**	**0**	**1491**	**3**	**11**	**0**	**1506**
Percentage	**0.07%**	**0.00%**	**99.00%**	**0.20%**	**0.73%**	**0.00%**	
PM Peak	**2:15 PM**	**12:00 PM**	**3:15 PM**	**1:45 PM**	**1:00 PM**	**12:00 PM**	**3:15 PM**
Volume	**1**	**0**	**220**	**1**	**5**	**0**	**220**
Day Total	**1**	**0**	**2490**	**7**	**56**	**2**	**2556**
Percentage	**0.04%**	**0.00%**	**97.42%**	**0.27%**	**2.19%**	**0.08%**	

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: Tuesday, January 23, 2024
Direction: SB

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	0	0	1
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	2	0	0	0	2
12:45 AM	0	0	1	0	0	0	1
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	2	0	0	0	2
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	1	0	0	0	1
3:15 AM	0	0	2	0	0	0	2
3:30 AM	0	0	0	0	0	0	0
3:45 AM	0	0	1	0	0	1	2
4:00 AM	0	0	0	0	0	0	0
4:15 AM	0	0	1	0	0	0	1
4:30 AM	0	0	1	0	0	0	1
4:45 AM	0	0	1	0	0	0	1
5:00 AM	0	0	1	0	0	0	1
5:15 AM	0	0	2	0	0	0	2
5:30 AM	0	0	2	0	0	0	2
5:45 AM	0	0	4	0	1	0	5
6:00 AM	0	0	0	1	0	0	1
6:15 AM	0	0	6	1	2	0	9
6:30 AM	0	0	11	0	0	0	11
6:45 AM	0	0	11	0	0	0	11
7:00 AM	0	0	16	1	1	0	18
7:15 AM	0	0	31	0	0	0	31
7:30 AM	0	0	28	0	1	1	30
7:45 AM	0	0	32	0	0	0	32
8:00 AM	0	0	35	0	0	0	35
8:15 AM	0	0	39	0	0	0	39
8:30 AM	0	0	43	0	0	0	43
8:45 AM	0	0	38	0	0	0	38
9:00 AM	0	0	41	0	1	0	42
9:15 AM	0	0	42	0	3	1	46
9:30 AM	0	0	35	0	1	1	37
9:45 AM	0	0	40	0	0	0	40
10:00 AM	0	0	39	0	0	0	39
10:15 AM	0	0	38	0	0	0	38
10:30 AM	0	0	45	0	4	0	49
10:45 AM	0	0	35	0	2	0	37
11:00 AM	0	0	52	0	2	0	54
11:15 AM	0	0	42	1	2	0	45
11:30 AM	0	0	44	0	2	0	46
11:45 AM	0	0	62	0	2	0	64
AM Total	**0**	**0**	**831**	**4**	**24**	**4**	**863**
Percentage	**0.00%**	**0.00%**	**96.29%**	**0.46%**	**2.78%**	**0.46%**	
AM Peak	**12:00 AM**	**12:00 AM**	**11:00 AM**	**5:30 AM**	**10:30 AM**	**8:45 AM**	**11:00 AM**
Volume	**0**	**0**	**200**	**2**	**10**	**2**	**209**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	44	0	1	0	45
12:15 PM	0	0	49	0	1	0	50
12:30 PM	0	0	45	0	0	0	45
12:45 PM	0	0	48	0	0	0	48
1:00 PM	0	0	46	0	1	0	47
1:15 PM	0	0	44	0	2	0	46
1:30 PM	0	0	42	0	3	0	45
1:45 PM	0	0	52	0	4	0	56
2:00 PM	0	0	70	0	0	0	70
2:15 PM	0	0	62	0	0	0	62
2:30 PM	0	0	65	0	2	0	67
2:45 PM	0	0	74	0	1	0	75
3:00 PM	0	0	77	0	0	0	77
3:15 PM	0	0	52	0	0	1	53
3:30 PM	0	0	71	0	1	0	72
3:45 PM	0	0	62	0	1	0	63
4:00 PM	0	0	78	0	0	0	78
4:15 PM	0	0	75	0	0	0	75
4:30 PM	0	0	47	0	0	0	47
4:45 PM	0	0	61	0	0	0	61
5:00 PM	0	0	63	0	1	0	64
5:15 PM	0	0	41	0	0	0	41
5:30 PM	0	0	60	0	1	0	61
5:45 PM	0	0	40	0	0	0	40
6:00 PM	0	0	37	0	0	0	37
6:15 PM	0	0	34	0	0	0	34
6:30 PM	0	0	45	0	0	0	45
6:45 PM	0	0	21	0	0	0	21
7:00 PM	0	0	45	0	0	0	45
7:15 PM	0	0	24	0	0	0	24
7:30 PM	0	0	20	0	0	0	20
7:45 PM	0	0	15	0	0	0	15
8:00 PM	0	0	21	0	0	0	21
8:15 PM	0	0	16	0	0	0	16
8:30 PM	0	0	16	0	0	0	16
8:45 PM	0	0	17	0	0	0	17
9:00 PM	0	0	20	0	0	0	20
9:15 PM	0	0	10	0	0	0	10
9:30 PM	0	0	4	0	0	0	4
9:45 PM	0	0	1	0	0	0	1
10:00 PM	0	0	3	0	0	0	3
10:15 PM	0	0	1	0	0	0	1
10:30 PM	0	0	1	0	0	0	1
10:45 PM	0	0	3	0	0	0	3
11:00 PM	0	0	3	0	0	0	3
11:15 PM	0	0	5	0	0	0	5
11:30 PM	0	0	2	0	0	0	2
11:45 PM	0	0	4	0	1	0	5
PM Total	**0**	**0**	**1736**	**0**	**20**	**1**	**1757**
Percentage	**0.00%**	**0.00%**	**98.80%**	**0.00%**	**1.14%**	**0.06%**	
PM Peak	**12:00 PM**	**12:00 PM**	**3:30 PM**	**12:00 PM**	**1:00 PM**	**2:30 PM**	**3:30 PM**
Volume	**0**	**0**	**286**	**0**	**10**	**1**	**288**
Day Total	**0**	**0**	**2567**	**4**	**44**	**5**	**2620**
Percentage	**0.00%**	**0.00%**	**97.98%**	**0.15%**	**1.68%**	**0.19%**	

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Wednesday, January 24, 2024**
Direction: **SB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-D**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0
12:30 AM	0	0	1	0	0	0	1
12:45 AM	0	0	1	0	0	0	1
1:00 AM	0	0	1	0	1	0	2
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	1	0	1
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	2	0	0	1	3
3:45 AM	0	0	1	0	0	1	2
4:00 AM	0	0	1	0	0	0	1
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	5	0	0	0	5
4:45 AM	0	0	1	0	0	0	1
5:00 AM	0	0	3	0	2	0	5
5:15 AM	0	0	3	0	1	0	4
5:30 AM	0	0	2	0	1	0	3
5:45 AM	0	0	6	0	2	0	8
6:00 AM	0	0	4	0	1	0	5
6:15 AM	0	0	12	1	0	0	13
6:30 AM	0	0	8	0	1	0	9
6:45 AM	0	0	17	0	0	0	17
7:00 AM	0	0	10	0	0	1	11
7:15 AM	0	0	22	0	0	0	22
7:30 AM	0	0	41	0	0	2	43
7:45 AM	0	0	28	0	0	0	28
8:00 AM	0	0	40	0	0	0	40
8:15 AM	0	0	34	0	1	0	35
8:30 AM	0	0	29	0	0	0	29
8:45 AM	0	0	33	0	1	0	34
9:00 AM	0	0	29	0	1	0	30
9:15 AM	0	0	36	1	0	0	37
9:30 AM	0	0	40	0	0	0	40
9:45 AM	0	0	28	1	2	0	31
10:00 AM	0	0	37	0	1	0	38
10:15 AM	0	0	35	0	3	0	38
10:30 AM	0	0	40	0	1	0	41
10:45 AM	0	0	40	0	0	0	40
11:00 AM	0	0	35	0	1	0	36
11:15 AM	0	0	33	0	4	0	37
11:30 AM	0	0	56	0	0	0	56
11:45 AM	0	0	50	0	3	0	53
AM Total	**0**	**0**	**770**	**3**	**28**	**5**	**806**
Percentage	**0.00%**	**0.00%**	**95.53%**	**0.37%**	**3.47%**	**0.62%**	
AM Peak	**12:00 AM**	**12:00 AM**	**11:00 AM**	**9:00 AM**	**11:00 AM**	**6:45 AM**	**11:00 AM**
Volume	**0**	**0**	**174**	**2**	**8**	**3**	**182**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	56	0	2	0	58
12:15 PM	0	0	55	1	0	1	57
12:30 PM	0	0	40	1	1	0	42
12:45 PM	0	0	48	0	0	0	48
1:00 PM	0	0	43	0	0	0	43
1:15 PM	0	0	47	0	0	1	48
1:30 PM	0	0	46	0	1	0	47
1:45 PM	0	0	46	0	1	0	47
2:00 PM	0	0	43	1	0	0	44
2:15 PM	0	0	55	0	1	0	56
2:30 PM	0	0	68	0	1	0	69
2:45 PM	0	0	85	0	1	0	86
3:00 PM	0	0	44	1	0	0	45
3:15 PM	0	0	63	0	0	0	63
3:30 PM	0	0	54	0	0	0	54
3:45 PM	0	0	68	0	0	0	68
4:00 PM	0	0	57	0	1	0	58
4:15 PM	0	0	68	0	1	0	69
4:30 PM	0	0	65	0	0	0	65
4:45 PM	0	0	59	0	1	0	60
5:00 PM	0	0	65	0	1	0	66
5:15 PM	0	0	67	0	2	0	69
5:30 PM	0	0	63	0	1	0	64
5:45 PM	0	0	57	0	0	0	57
6:00 PM	0	0	41	0	1	0	42
6:15 PM	0	0	33	0	0	0	33
6:30 PM	0	0	44	0	0	0	44
6:45 PM	0	0	32	0	0	0	32
7:00 PM	0	0	31	0	0	0	31
7:15 PM	0	0	32	0	0	0	32
7:30 PM	0	0	16	0	0	0	16
7:45 PM	0	0	22	0	0	0	22
8:00 PM	0	0	24	0	0	0	24
8:15 PM	0	0	19	0	0	0	19
8:30 PM	0	0	11	0	0	0	11
8:45 PM	0	0	11	0	0	0	11
9:00 PM	0	0	17	0	0	0	17
9:15 PM	0	0	9	0	0	0	9
9:30 PM	0	0	8	0	0	0	8
9:45 PM	0	0	7	0	0	0	7
10:00 PM	0	0	6	0	0	0	6
10:15 PM	0	0	1	0	0	0	1
10:30 PM	0	0	1	0	0	0	1
10:45 PM	0	0	5	0	0	0	5
11:00 PM	0	0	2	0	0	0	2
11:15 PM	0	0	3	0	0	0	3
11:30 PM	0	0	1	0	0	0	1
11:45 PM	0	0	5	0	0	0	5
PM Total	**0**	**0**	**1743**	**4**	**16**	**2**	**1765**
Percentage	**0.00%**	**0.00%**	**98.75%**	**0.23%**	**0.91%**	**0.11%**	
PM Peak	**12:00 PM**	**12:00 PM**	**2:30 PM**	**12:00 PM**	**4:45 PM**	**12:00 PM**	**2:30 PM**
Volume	**0**	**0**	**260**	**2**	**5**	**1**	**263**
Day Total	**0**	**0**	**2513**	**7**	**44**	**7**	**2571**
Percentage	**0.00%**	**0.00%**	**97.74%**	**0.27%**	**1.71%**	**0.27%**	

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: Thursday, January 25, 2024
Direction: SB

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	1	0	0	0	1
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	3	0	0	0	3
12:45 AM	0	0	1	0	0	0	1
1:00 AM	0	0	1	0	0	0	1
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	1	1
4:00 AM	0	0	1	0	0	0	1
4:15 AM	0	0	1	0	0	0	1
4:30 AM	0	0	1	0	0	0	1
4:45 AM	0	0	2	0	0	0	2
5:00 AM	0	0	3	0	0	0	3
5:15 AM	0	0	2	0	1	0	3
5:30 AM	0	0	7	0	0	0	7
5:45 AM	0	0	1	0	1	0	2
6:00 AM	0	0	7	0	1	0	8
6:15 AM	0	0	6	1	0	0	7
6:30 AM	0	0	14	0	0	0	14
6:45 AM	0	0	14	0	0	1	15
7:00 AM	0	0	12	0	1	0	13
7:15 AM	0	0	25	0	0	0	25
7:30 AM	0	0	35	0	0	0	35
7:45 AM	0	0	32	0	0	0	32
8:00 AM	0	0	41	0	1	0	42
8:15 AM	0	0	24	0	0	1	25
8:30 AM	0	0	37	0	0	0	37
8:45 AM	0	0	33	0	2	0	35
9:00 AM	0	0	33	1	5	0	39
9:15 AM	0	0	41	0	1	1	43
9:30 AM	0	0	34	0	1	0	35
9:45 AM	0	0	37	0	3	0	40
10:00 AM	0	0	41	0	1	0	42
10:15 AM	0	0	40	0	1	0	41
10:30 AM	0	0	40	0	0	0	40
10:45 AM	0	0	46	0	0	0	46
11:00 AM	0	0	42	1	3	0	46
11:15 AM	0	0	37	0	0	0	37
11:30 AM	0	0	54	1	2	0	57
11:45 AM	0	0	44	0	0	0	44
AM Total	**0**	**0**	**796**	**4**	**24**	**4**	**828**
Percentage	**0.00%**	**0.00%**	**96.14%**	**0.48%**	**2.90%**	**0.48%**	
AM Peak	**12:00 AM**	**12:00 AM**	**10:45 AM**	**10:45 AM**	**9:00 AM**	**3:00 AM**	**10:45 AM**
Volume	**0**	**0**	**179**	**2**	**10**	**1**	**186**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	58	0	1	0	59
12:15 PM	0	0	52	0	1	0	53
12:30 PM	0	0	54	0	0	0	54
12:45 PM	0	0	48	0	2	0	50
1:00 PM	0	0	43	0	0	0	43
1:15 PM	0	0	41	1	1	0	43
1:30 PM	0	0	49	0	1	0	50
1:45 PM	0	0	58	0	1	0	59
2:00 PM	0	0	55	0	0	0	55
2:15 PM	0	0	68	0	1	0	69
2:30 PM	0	0	69	0	1	0	70
2:45 PM	0	0	60	0	1	0	61
3:00 PM	0	0	62	0	2	0	64
3:15 PM	0	0	74	0	1	1	76
3:30 PM	0	0	54	0	1	0	55
3:45 PM	0	0	70	0	2	0	72
4:00 PM	0	0	83	0	2	0	85
4:15 PM	0	0	56	0	0	0	56
4:30 PM	0	0	67	0	1	0	68
4:45 PM	0	0	58	0	2	0	60
5:00 PM	0	0	63	1	1	0	65
5:15 PM	0	0	64	0	0	1	65
5:30 PM	0	0	61	0	1	1	63
5:45 PM	0	0	70	0	0	0	70
6:00 PM	0	0	50	0	0	0	50
6:15 PM	0	0	42	0	0	0	42
6:30 PM	0	0	39	0	0	0	39
6:45 PM	0	0	38	0	0	1	39
7:00 PM	0	0	40	0	0	0	40
7:15 PM	1	0	33	0	0	0	34
7:30 PM	0	0	25	0	0	0	25
7:45 PM	0	0	26	0	0	0	26
8:00 PM	0	0	22	0	0	0	22
8:15 PM	0	0	16	0	0	0	16
8:30 PM	0	0	12	0	0	0	12
8:45 PM	0	0	15	0	0	0	15
9:00 PM	0	0	28	0	0	0	28
9:15 PM	0	0	12	0	0	0	12
9:30 PM	0	0	6	0	0	0	6
9:45 PM	0	0	6	0	0	0	6
10:00 PM	0	0	4	0	0	0	4
10:15 PM	0	0	5	0	0	0	5
10:30 PM	0	0	2	0	0	0	2
10:45 PM	0	0	2	0	0	0	2
11:00 PM	0	0	5	0	0	0	5
11:15 PM	0	0	4	0	0	0	4
11:30 PM	0	0	5	0	0	0	5
11:45 PM	0	0	3	0	0	0	3
PM Total	**1**	**0**	**1877**	**2**	**23**	**4**	**1907**
Percentage	**0.05%**	**0.00%**	**98.43%**	**0.10%**	**1.21%**	**0.21%**	
PM Peak	**6:30 PM**	**12:00 PM**	**3:15 PM**	**12:30 PM**	**3:00 PM**	**4:45 PM**	**3:15 PM**
Volume	**1**	**0**	**281**	**1**	**6**	**2**	**288**
Day Total	**1**	**0**	**2673**	**6**	**47**	**8**	**2735**
Percentage	**0.04%**	**0.00%**	**97.73%**	**0.22%**	**1.72%**	**0.29%**	

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: Friday, January 26, 2024
Direction: SB

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0
12:45 AM	0	0	2	0	0	0	2
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	1	0	0	0	1
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	1	1
4:00 AM	0	0	2	0	0	0	2
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	3	0	0	0	3
4:45 AM	0	0	3	0	0	0	3
5:00 AM	0	0	3	0	0	0	3
5:15 AM	0	0	3	0	0	1	4
5:30 AM	0	0	4	0	1	0	5
5:45 AM	0	0	2	0	0	0	2
6:00 AM	0	0	7	0	0	0	7
6:15 AM	0	0	8	1	2	0	11
6:30 AM	0	0	9	0	0	0	9
6:45 AM	0	0	17	0	0	0	17
7:00 AM	0	0	15	0	1	0	16
7:15 AM	0	0	28	0	2	0	30
7:30 AM	0	0	23	0	1	0	24
7:45 AM	0	0	29	0	1	0	30
8:00 AM	0	0	35	0	0	0	35
8:15 AM	0	0	49	0	0	0	49
8:30 AM	0	0	49	0	2	0	51
8:45 AM	0	0	47	0	0	0	47
9:00 AM	0	0	27	0	6	0	33
9:15 AM	0	0	49	0	0	0	49
9:30 AM	0	0	43	0	2	0	45
9:45 AM	0	0	45	0	0	0	45
10:00 AM	0	0	28	1	0	0	29
10:15 AM	0	0	25	0	1	0	26
10:30 AM	0	0	46	0	0	0	46
10:45 AM	0	0	66	0	1	1	68
11:00 AM	0	0	43	0	2	0	45
11:15 AM	0	0	62	1	2	0	65
11:30 AM	0	0	60	0	3	0	63
11:45 AM	0	0	62	0	0	0	62
AM Total	**0**	**0**	**896**	**3**	**27**	**3**	**929**
Percentage	**0.00%**	**0.00%**	**96.45%**	**0.32%**	**2.91%**	**0.32%**	
AM Peak	**12:00 AM**	**12:00 AM**	**10:45 AM**	**5:30 AM**	**8:15 AM**	**3:00 AM**	**10:45 AM**
Volume	**0**	**0**	**231**	**1**	**8**	**1**	**241**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	59	0	0	0	59
12:15 PM	0	0	54	0	1	0	55
12:30 PM	0	0	58	0	1	0	59
12:45 PM	0	0	58	0	0	0	58
1:00 PM	0	0	49	0	0	0	49
1:15 PM	0	0	49	0	1	0	50
1:30 PM	0	0	43	0	1	0	44
1:45 PM	0	0	52	0	1	0	53
2:00 PM	0	0	74	0	0	0	74
2:15 PM	0	0	70	0	0	0	70
2:30 PM	0	0	75	1	0	0	76
2:45 PM	0	0	73	0	1	1	75
3:00 PM	0	0	60	1	1	0	62
3:15 PM	0	0	60	0	0	0	60
3:30 PM	0	0	53	0	0	0	53
3:45 PM	0	0	53	0	0	0	53
4:00 PM	0	0	48	0	0	0	48
4:15 PM	0	0	61	0	0	3	64
4:30 PM	0	0	57	0	0	0	57
4:45 PM	0	0	64	0	0	0	64
5:00 PM	0	0	60	0	1	0	61
5:15 PM	0	0	63	0	1	0	64
5:30 PM	0	0	68	0	0	0	68
5:45 PM	0	0	43	0	0	0	43
6:00 PM	0	0	45	0	0	0	45
6:15 PM	0	0	38	0	0	0	38
6:30 PM	0	0	35	0	0	0	35
6:45 PM	0	0	45	0	0	0	45
7:00 PM	0	0	37	0	0	0	37
7:15 PM	0	0	25	0	0	0	25
7:30 PM	0	0	42	0	0	0	42
7:45 PM	0	0	27	0	0	0	27
8:00 PM	0	0	19	0	0	0	19
8:15 PM	0	0	24	0	0	0	24
8:30 PM	0	0	24	0	0	0	24
8:45 PM	0	0	14	0	0	0	14
9:00 PM	0	0	25	0	0	0	25
9:15 PM	0	0	13	0	0	0	13
9:30 PM	0	0	16	0	0	0	16
9:45 PM	0	0	15	0	0	0	15
10:00 PM	0	0	10	0	0	0	10
10:15 PM	0	0	5	0	0	0	5
10:30 PM	0	0	9	0	0	0	9
10:45 PM	0	0	5	0	0	0	5
11:00 PM	0	0	4	0	0	0	4
11:15 PM	0	0	5	0	0	0	5
11:30 PM	0	0	2	0	0	0	2
11:45 PM	0	0	3	0	0	0	3
PM Total	**0**	**0**	**1891**	**2**	**9**	**4**	**1906**
Percentage	**0.00%**	**0.00%**	**99.21%**	**0.10%**	**0.47%**	**0.21%**	
PM Peak	**12:00 PM**	**12:00 PM**	**2:00 PM**	**2:15 PM**	**1:00 PM**	**3:30 PM**	**2:00 PM**
Volume	**0**	**0**	**292**	**2**	**3**	**3**	**295**
Day Total	**0**	**0**	**2787**	**5**	**36**	**7**	**2835**
Percentage	**0.00%**	**0.00%**	**98.31%**	**0.18%**	**1.27%**	**0.25%**	

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Saturday, January 27, 2024**
Direction: **SB**

PDI File #: **239698 ATR-D**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	3	0	0	0	3
12:15 AM	0	0	2	0	0	0	2
12:30 AM	0	0	2	0	0	0	2
12:45 AM	0	0	2	0	0	0	2
1:00 AM	0	0	3	0	0	0	3
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	2	0	0	0	2
2:15 AM	0	0	0	0	1	0	1
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	1	0	0	0	1
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	1	1	2
4:00 AM	0	0	1	0	0	0	1
4:15 AM	0	0	0	0	1	0	1
4:30 AM	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	1	0	1
5:00 AM	0	0	1	0	0	0	1
5:15 AM	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0
6:00 AM	0	0	2	0	0	0	2
6:15 AM	0	0	2	0	0	0	2
6:30 AM	0	0	3	0	0	0	3
6:45 AM	0	0	3	0	0	0	3
7:00 AM	0	0	5	0	0	0	5
7:15 AM	0	0	10	0	0	0	10
7:30 AM	0	0	13	0	0	0	13
7:45 AM	0	0	10	0	0	0	10
8:00 AM	0	1	15	0	0	0	16
8:15 AM	0	0	17	0	0	0	17
8:30 AM	0	0	20	0	0	1	21
8:45 AM	0	0	30	0	0	0	30
9:00 AM	0	0	21	0	0	0	21
9:15 AM	0	0	28	0	0	0	28
9:30 AM	0	0	39	0	1	0	40
9:45 AM	0	0	55	0	0	0	55
10:00 AM	0	0	38	0	1	0	39
10:15 AM	0	0	34	0	0	0	34
10:30 AM	0	0	54	0	0	0	54
10:45 AM	0	0	35	0	1	0	36
11:00 AM	0	0	51	0	0	0	51
11:15 AM	0	0	49	0	0	0	49
11:30 AM	0	0	51	0	0	0	51
11:45 AM	0	0	59	0	0	0	59
AM Total	**0**	**1**	**664**	**0**	**7**	**2**	**674**
Percentage	**0.00%**	**0.15%**	**98.52%**	**0.00%**	**1.04%**	**0.30%**	
AM Peak	**12:00 AM**	**7:15 AM**	**11:00 AM**	**12:00 AM**	**3:30 AM**	**3:00 AM**	**11:00 AM**
Volume	**0**	**1**	**210**	**0**	**2**	**1**	**210**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	38	0	0	0	38
12:15 PM	0	0	63	0	0	0	63
12:30 PM	0	0	55	0	1	1	57
12:45 PM	0	0	60	0	0	0	60
1:00 PM	0	0	41	0	1	0	42
1:15 PM	0	0	42	0	0	0	42
1:30 PM	0	0	59	0	0	0	59
1:45 PM	0	0	64	0	0	0	64
2:00 PM	0	0	43	0	0	0	43
2:15 PM	0	0	48	0	0	0	48
2:30 PM	0	0	58	0	0	1	59
2:45 PM	0	0	43	0	0	0	43
3:00 PM	0	0	57	0	0	0	57
3:15 PM	0	0	49	0	1	0	50
3:30 PM	0	0	41	0	0	0	41
3:45 PM	0	0	45	0	0	0	45
4:00 PM	0	0	32	0	2	0	34
4:15 PM	0	0	39	0	0	0	39
4:30 PM	0	0	27	0	0	0	27
4:45 PM	0	0	33	0	0	0	33
5:00 PM	0	0	35	0	0	0	35
5:15 PM	0	0	40	0	0	0	40
5:30 PM	0	0	28	0	0	0	28
5:45 PM	0	0	33	0	0	0	33
6:00 PM	0	0	25	0	0	0	25
6:15 PM	0	0	42	1	1	0	44
6:30 PM	0	0	36	0	0	0	36
6:45 PM	0	0	32	0	0	0	32
7:00 PM	0	0	19	0	1	0	20
7:15 PM	0	0	18	0	0	0	18
7:30 PM	0	0	17	0	0	0	17
7:45 PM	0	0	21	0	0	0	21
8:00 PM	0	0	21	0	0	0	21
8:15 PM	0	0	12	0	0	0	12
8:30 PM	0	0	15	0	0	0	15
8:45 PM	0	0	15	0	0	0	15
9:00 PM	0	0	18	0	0	0	18
9:15 PM	0	0	7	0	0	0	7
9:30 PM	0	0	11	0	0	0	11
9:45 PM	0	0	12	0	0	0	12
10:00 PM	0	0	7	0	0	0	7
10:15 PM	0	0	6	0	0	0	6
10:30 PM	0	0	4	0	0	0	4
10:45 PM	0	0	2	0	0	0	2
11:00 PM	0	0	2	0	0	0	2
11:15 PM	0	0	4	0	0	0	4
11:30 PM	0	0	7	0	0	0	7
11:45 PM	0	0	1	0	0	0	1
PM Total	**0**	**0**	**1427**	**1**	**7**	**2**	**1437**
Percentage	**0.00%**	**0.00%**	**99.30%**	**0.07%**	**0.49%**	**0.14%**	
PM Peak	**12:00 PM**	**12:00 PM**	**12:15 PM**	**5:30 PM**	**3:15 PM**	**12:00 PM**	**12:15 PM**
Volume	**0**	**0**	**219**	**1**	**3**	**1**	**222**

Day Total	**0**	**1**	**2091**	**1**	**14**	**4**	**2111**
Percentage	**0.00%**	**0.05%**	**99.05%**	**0.05%**	**0.66%**	**0.19%**	

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: **Sunday, January 28, 2024**
Direction: **SB**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **239698 ATR-D**

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	4	0	0	0	4
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	0	0	0	0	0
12:45 AM	0	0	2	0	0	0	2
1:00 AM	0	0	1	0	0	0	1
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	1	0	0	0	1
3:30 AM	0	0	1	0	0	0	1
3:45 AM	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	2	0	0	1	3
4:45 AM	0	0	1	0	0	0	1
5:00 AM	0	0	0	0	1	0	1
5:15 AM	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0
6:00 AM	0	0	1	0	0	0	1
6:15 AM	0	0	3	0	0	0	3
6:30 AM	0	0	6	0	0	1	7
6:45 AM	0	0	7	0	0	0	7
7:00 AM	0	0	7	0	0	0	7
7:15 AM	0	0	2	0	0	0	2
7:30 AM	0	0	14	0	0	0	14
7:45 AM	0	0	6	0	0	0	6
8:00 AM	0	0	8	0	0	0	8
8:15 AM	0	0	18	0	0	0	18
8:30 AM	0	0	15	0	0	0	15
8:45 AM	0	0	18	0	0	0	18
9:00 AM	0	0	16	0	0	0	16
9:15 AM	0	0	22	0	0	0	22
9:30 AM	0	0	24	0	0	0	24
9:45 AM	0	0	31	0	0	0	31
10:00 AM	0	0	18	0	0	0	18
10:15 AM	0	0	27	0	0	0	27
10:30 AM	0	0	34	0	0	0	34
10:45 AM	0	0	31	0	0	0	31
11:00 AM	0	0	29	0	1	0	30
11:15 AM	0	0	32	0	0	0	32
11:30 AM	0	0	23	0	0	0	23
11:45 AM	0	0	47	0	0	0	47
AM Total	**0**	**0**	**454**	**0**	**2**	**2**	**458**
Percentage	**0.00%**	**0.00%**	**99.13%**	**0.00%**	**0.44%**	**0.44%**	
AM Peak	**12:00 AM**	**12:00 AM**	**11:00 AM**	**12:00 AM**	**4:15 AM**	**3:45 AM**	**11:00 AM**
Volume	**0**	**0**	**131**	**0**	**1**	**1**	**132**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	33	0	0	0	33
12:15 PM	0	0	32	0	0	0	32
12:30 PM	0	0	38	0	0	0	38
12:45 PM	0	0	30	0	0	0	30
1:00 PM	0	0	33	0	0	0	33
1:15 PM	0	0	23	0	0	0	23
1:30 PM	0	0	36	0	1	0	37
1:45 PM	0	0	38	0	0	0	38
2:00 PM	0	0	31	0	0	0	31
2:15 PM	0	0	30	0	0	0	30
2:30 PM	0	0	32	0	0	0	32
2:45 PM	0	0	32	0	1	0	33
3:00 PM	0	0	29	0	0	0	29
3:15 PM	0	0	28	0	0	0	28
3:30 PM	0	0	38	0	0	0	38
3:45 PM	0	0	32	0	0	0	32
4:00 PM	0	0	39	0	0	0	39
4:15 PM	0	0	26	0	0	0	26
4:30 PM	0	0	22	0	0	0	22
4:45 PM	0	0	28	0	0	0	28
5:00 PM	0	0	28	0	0	0	28
5:15 PM	0	0	25	0	0	0	25
5:30 PM	0	0	27	0	0	0	27
5:45 PM	0	0	34	0	0	0	34
6:00 PM	0	0	31	0	0	0	31
6:15 PM	0	0	18	0	0	0	18
6:30 PM	0	0	17	0	0	0	17
6:45 PM	0	0	16	0	0	0	16
7:00 PM	0	0	12	0	0	0	12
7:15 PM	0	0	20	1	0	0	21
7:30 PM	0	0	16	0	0	0	16
7:45 PM	0	0	13	0	0	0	13
8:00 PM	0	0	20	0	0	0	20
8:15 PM	0	0	12	0	0	0	12
8:30 PM	0	0	12	0	0	0	12
8:45 PM	0	0	5	0	0	0	5
9:00 PM	0	0	5	0	0	0	5
9:15 PM	0	0	4	0	0	0	4
9:30 PM	0	0	4	0	0	0	4
9:45 PM	0	0	3	0	0	0	3
10:00 PM	0	0	4	0	0	0	4
10:15 PM	0	0	1	0	0	0	1
10:30 PM	0	0	0	0	1	0	1
10:45 PM	0	0	6	0	0	0	6
11:00 PM	0	0	5	0	0	0	5
11:15 PM	0	0	3	0	0	0	3
11:30 PM	0	0	2	0	0	0	2
11:45 PM	0	0	1	0	0	0	1
PM Total	**0**	**0**	**974**	**1**	**3**	**0**	**978**
Percentage	**0.00%**	**0.00%**	**99.59%**	**0.10%**	**0.31%**	**0.00%**	
PM Peak	**12:00 PM**	**12:00 PM**	**3:15 PM**	**6:30 PM**	**12:45 PM**	**12:00 PM**	**3:15 PM**
Volume	**0**	**0**	**137**	**1**	**1**	**0**	**137**
Day Total	**0**	**0**	**1428**	**1**	**5**	**2**	**1436**
Percentage	**0.00%**	**0.00%**	**99.44%**	**0.07%**	**0.35%**	**0.14%**	

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

Count Date: Monday, January 29, 2024
Direction: SB

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	0	0	1	0	1
12:15 AM	0	0	0	0	0	0	0
12:30 AM	0	0	1	0	1	0	2
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	2	0	0	0	2
2:00 AM	0	0	0	0	1	0	1
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	3	0	0	0	3
3:00 AM	0	0	4	0	2	0	6
3:15 AM	0	0	4	0	1	0	5
3:30 AM	0	0	2	0	0	0	2
3:45 AM	0	0	0	0	0	0	0
4:00 AM	0	0	1	0	0	0	1
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	4	0	1	0	5
4:45 AM	0	0	0	0	1	0	1
5:00 AM	0	0	3	0	1	0	4
5:15 AM	0	0	3	0	0	0	3
5:30 AM	0	0	5	0	0	0	5
5:45 AM	0	0	4	0	4	0	8
6:00 AM	0	0	6	0	0	0	6
6:15 AM	0	0	7	1	1	0	9
6:30 AM	0	0	15	0	1	0	16
6:45 AM	0	0	12	0	0	0	12
7:00 AM	0	0	17	0	2	0	19
7:15 AM	0	0	28	0	0	0	28
7:30 AM	0	0	34	0	2	0	36
7:45 AM	0	0	31	0	0	0	31
8:00 AM	0	0	33	0	1	0	34
8:15 AM	0	0	34	0	1	0	35
8:30 AM	0	0	32	0	0	1	33
8:45 AM	0	0	32	0	0	0	32
9:00 AM	0	0	22	0	2	1	25
9:15 AM	0	0	38	0	0	0	38
9:30 AM	0	0	35	0	0	0	35
9:45 AM	0	0	30	0	0	0	30
10:00 AM	0	0	31	0	1	0	32
10:15 AM	0	0	28	0	1	0	29
10:30 AM	0	0	28	0	1	0	29
10:45 AM	0	0	37	0	2	0	39
11:00 AM	0	0	37	0	0	0	37
11:15 AM	0	0	39	0	0	0	39
11:30 AM	0	0	47	0	4	0	51
11:45 AM	0	0	35	0	3	0	38
AM Total	**0**	**0**	**725**	**1**	**35**	**2**	**763**
Percentage	**0.00%**	**0.00%**	**95.02%**	**0.13%**	**4.59%**	**0.26%**	
AM Peak	**12:00 AM**	**12:00 AM**	**10:45 AM**	**5:30 AM**	**11:00 AM**	**8:15 AM**	**10:45 AM**
Volume	**0**	**0**	**160**	**1**	**7**	**2**	**166**

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	39	0	0	0	39
12:15 PM	0	0	50	0	0	0	50
12:30 PM	0	0	45	0	0	0	45
12:45 PM	0	0	49	0	0	0	49
1:00 PM	0	0	38	0	2	0	40
1:15 PM	0	0	43	1	4	0	48
1:30 PM	0	0	38	0	0	0	38
1:45 PM	0	0	52	0	0	0	52
2:00 PM	0	0	48	0	0	0	48
2:15 PM	0	0	57	0	0	0	57
2:30 PM	0	0	65	0	0	0	65
2:45 PM	0	0	49	0	0	0	49
3:00 PM	0	0	57	0	0	0	57
3:15 PM	0	0	55	0	2	0	57
3:30 PM	0	0	58	0	1	0	59
3:45 PM	0	0	57	0	2	0	59
4:00 PM	0	0	64	0	1	0	65
4:15 PM	0	0	57	0	0	0	57
4:30 PM	0	0	61	0	2	0	63
4:45 PM	0	1	40	0	0	0	41
5:00 PM	0	0	79	0	0	0	79
5:15 PM	0	0	60	0	1	0	61
5:30 PM	0	0	50	0	0	0	50
5:45 PM	0	0	50	0	0	0	50
6:00 PM	0	0	40	0	0	0	40
6:15 PM	1	0	34	0	0	0	35
6:30 PM	0	0	28	0	0	0	28
6:45 PM	0	0	29	0	0	0	29
7:00 PM	0	0	37	0	0	0	37
7:15 PM	0	0	19	0	0	0	19
7:30 PM	0	0	14	0	0	0	14
7:45 PM	0	0	14	0	0	0	14
8:00 PM	0	0	26	0	0	0	26
8:15 PM	0	0	13	0	0	0	13
8:30 PM	0	0	9	0	0	0	9
8:45 PM	0	0	11	0	0	0	11
9:00 PM	0	0	15	0	0	0	15
9:15 PM	0	0	6	0	0	0	6
9:30 PM	0	0	5	0	0	0	5
9:45 PM	0	0	5	0	0	0	5
10:00 PM	0	0	2	0	0	0	2
10:15 PM	0	0	2	0	0	0	2
10:30 PM	0	0	1	0	0	0	1
10:45 PM	0	0	1	0	0	0	1
11:00 PM	0	0	1	0	1	0	2
11:15 PM	0	0	2	0	0	0	2
11:30 PM	0	0	3	0	0	0	3
11:45 PM	0	0	0	0	0	0	0
PM Total	**1**	**1**	**1578**	**1**	**16**	**0**	**1597**
Percentage	**0.06%**	**0.06%**	**98.81%**	**0.06%**	**1.00%**	**0.00%**	
PM Peak	**5:30 PM**	**4:00 PM**	**4:30 PM**	**12:30 PM**	**12:30 PM**	**12:00 PM**	**3:45 PM**
Volume	**1**	**1**	**240**	**1**	**6**	**0**	**244**
Day Total	**1**	**1**	**2303**	**2**	**51**	**2**	**2360**
Percentage	**0.04%**	**0.04%**	**97.58%**	**0.08%**	**2.16%**	**0.08%**	

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File # **239698 ATR-D**

Direction: **NB**

Weekly Report

Day	Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Monday		Week	
Date	01/23/24		01/24/24		01/25/24		01/26/24		01/27/24		01/28/24		01/29/24		Ave	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	1	53	0	44	1	51	0	56	3	48	0	20	2	41	1	45
12:15	1	34	2	54	0	44	0	54	1	46	7	39	1	46	2	45
12:30	2	37	1	41	1	52	2	55	1	52	2	27	0	53	1	45
12:45	1	46	3	52	1	51	1	49	2	73	0	32	0	49	1	50
1:00	0	39	0	42	0	58	0	48	0	69	0	35	2	49	0	49
1:15	1	53	1	44	2	42	0	51	3	57	0	41	0	49	1	48
1:30	1	26	0	52	0	47	1	56	1	57	0	41	0	44	0	46
1:45	0	50	1	51	1	42	0	78	2	48	3	37	0	43	1	50
2:00	0	47	0	38	0	61	0	57	2	70	2	27	0	33	1	48
2:15	0	54	1	48	0	63	0	55	0	51	1	29	2	62	1	52
2:30	0	43	1	42	0	67	0	62	0	49	0	27	1	64	0	51
2:45	0	67	1	52	2	60	1	53	0	53	0	31	1	44	1	51
3:00	1	53	0	57	0	56	0	65	0	32	0	34	5	43	1	49
3:15	0	59	0	44	2	47	0	37	1	44	1	30	1	54	1	45
3:30	1	64	3	49	1	72	1	44	3	51	1	22	3	53	2	51
3:45	0	57	5	59	2	57	0	57	0	54	1	20	5	44	2	50
4:00	1	48	4	56	3	52	4	46	1	56	0	17	1	69	2	49
4:15	1	48	4	39	2	58	0	41	1	41	1	17	2	54	2	43
4:30	3	58	1	41	2	58	2	55	1	28	0	17	3	51	2	44
4:45	6	51	6	45	4	50	4	51	3	35	0	28	9	45	5	44
5:00	1	47	1	55	2	52	2	45	3	37	1	26	6	53	2	45
5:15	4	39	8	46	4	51	2	35	1	24	0	20	7	38	4	36
5:30	7	48	4	42	13	43	7	49	8	35	3	20	11	42	8	40
5:45	8	34	14	41	9	39	7	50	5	36	4	24	13	44	9	38
6:00	12	31	10	38	9	28	5	48	3	37	2	32	10	37	7	36
6:15	9	34	16	27	13	34	15	31	8	25	3	25	15	42	11	31
6:30	16	33	12	34	20	27	17	32	4	30	5	19	15	29	13	29
6:45	21	36	18	45	24	32	19	48	10	25	9	36	32	43	19	38
7:00	25	31	23	25	26	40	24	38	7	23	1	19	26	29	19	29
7:15	34	27	34	25	26	28	18	23	14	27	16	24	40	14	26	24
7:30	47	8	45	19	63	27	55	30	21	22	6	16	55	20	42	20
7:45	106	30	101	35	114	31	110	30	28	17	20	10	122	27	86	26
8:00	74	15	97	26	72	20	71	23	20	17	14	7	75	19	60	18
8:15	41	19	49	14	44	10	63	16	28	16	20	5	50	9	42	13
8:30	54	17	38	13	50	16	44	15	20	21	13	6	46	15	38	15
8:45	50	17	47	18	47	16	60	10	20	17	19	3	29	14	39	14
9:00	42	15	55	11	39	6	37	12	26	13	17	4	50	7	38	10
9:15	39	6	36	12	39	14	46	8	44	9	32	4	42	12	40	9
9:30	54	4	45	8	47	4	68	12	41	10	31	1	49	3	48	6
9:45	41	3	49	7	38	5	46	18	29	7	16	3	38	3	37	7
10:00	30	9	47	2	51	12	55	11	38	9	31	7	35	4	41	8
10:15	40	3	45	4	43	1	41	4	43	5	20	9	27	5	37	4
10:30	49	1	39	1	48	6	51	13	42	9	24	7	34	5	41	6
10:45	50	7	44	1	37	4	44	4	49	3	46	1	32	0	43	3
11:00	40	2	38	3	44	5	39	10	54	8	35	2	34	0	41	4
11:15	55	3	60	0	44	6	58	3	61	0	27	0	41	0	49	2
11:30	55	3	40	1	47	0	51	1	48	0	28	0	32	2	43	1
11:45	48	2	56	3	37	1	52	1	70	6	45	0	46	0	51	2
Total	**1072**	**1511**	**1105**	**1506**	**1074**	**1646**	**1123**	**1690**	**770**	**1502**	**507**	**901**	**1050**	**1506**	**957**	**1466**
Day Total	**2583**		**2611**		**2720**		**2813**		**2272**		**1408**		**2556**		**2423**	
Peak HR	**7:45 AM**	**2:45 PM**	**7:30 AM**	**3:00 PM**	**7:30 AM**	**2:00 PM**	**7:30 AM**	**1:45 PM**	**11:00 AM**	**12:45 PM**	**10:45 AM**	**1:00 PM**	**7:30 AM**	**3:15 PM**	**7:30 AM**	**2:15 PM**
Volume	**275**	**243**	**292**	**209**	**293**	**251**	**299**	**252**	**233**	**256**	**136**	**154**	**302**	**220**	**230**	**202**

Highland Avenue
n/o Great Plain Avenue
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File # **239698 ATR-D**

Direction: **SB**

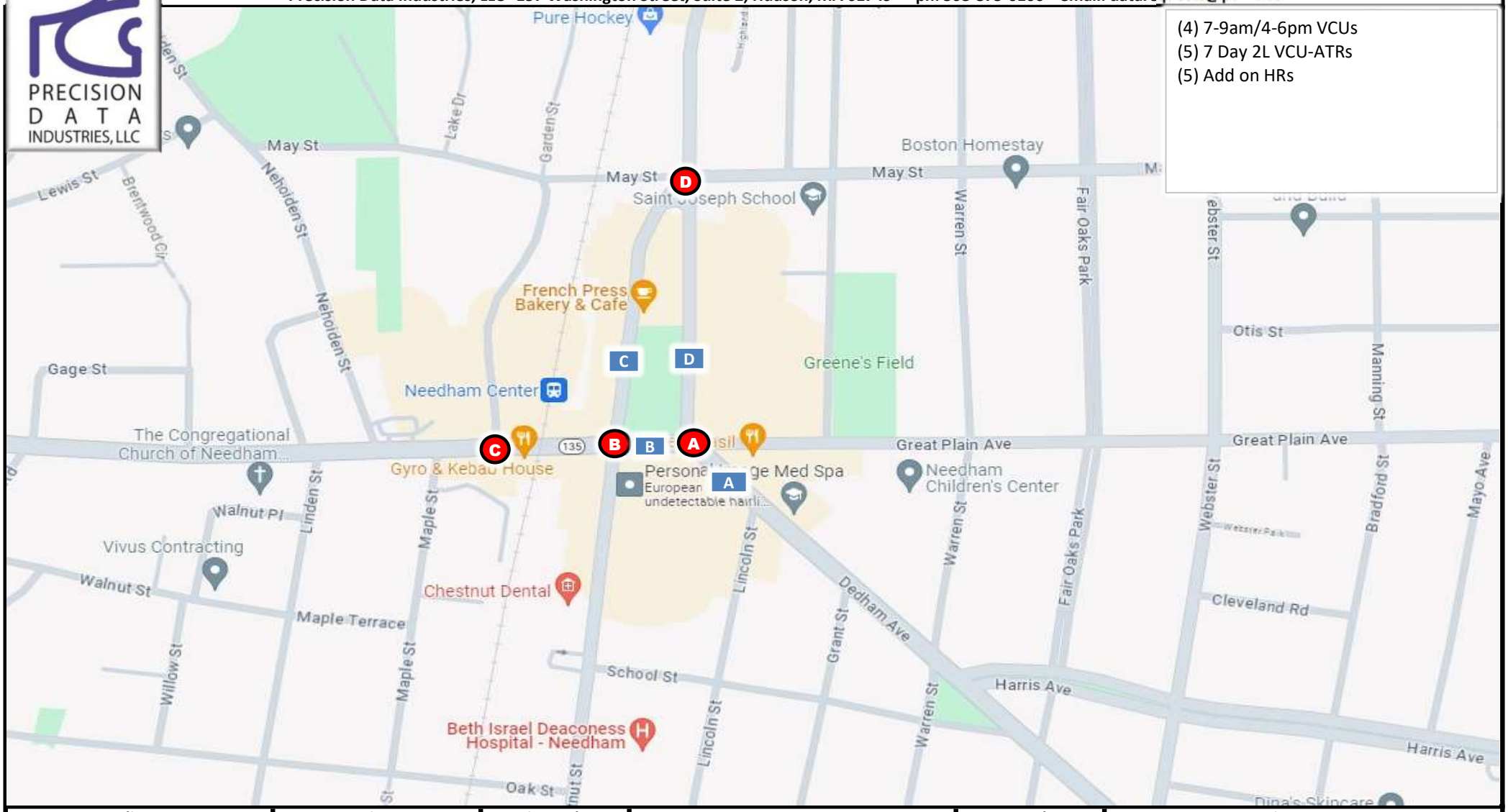
Weekly Report

Day	Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Monday		Week	
Date	01/23/24		01/24/24		01/25/24		01/26/24		01/27/24		01/28/24		01/29/24		Ave	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	1	45	0	58	1	59	0	59	3	38	4	33	1	39	1	47
12:15	1	50	0	57	1	53	0	55	2	63	1	32	0	50	1	51
12:30	2	45	1	42	3	54	0	59	2	57	0	38	2	45	1	49
12:45	1	48	1	48	1	50	2	58	2	60	2	30	0	49	1	49
1:00	0	47	2	43	1	43	0	49	3	42	1	33	0	40	1	42
1:15	1	46	1	48	1	43	0	50	1	42	1	23	1	48	1	43
1:30	1	45	1	47	0	50	0	44	1	59	0	37	0	38	0	46
1:45	1	56	1	47	0	59	0	53	0	64	0	38	2	52	1	53
2:00	0	70	0	44	0	55	1	74	2	43	0	31	1	48	1	52
2:15	2	62	1	56	0	69	0	70	1	48	0	30	0	57	1	56
2:30	0	67	1	69	0	70	0	76	0	59	1	32	0	65	0	63
2:45	0	75	1	86	0	61	1	75	1	43	0	33	3	49	1	60
3:00	1	77	0	45	0	64	0	62	1	57	0	29	6	57	1	56
3:15	2	53	1	63	1	76	0	60	0	50	1	28	5	57	1	55
3:30	0	72	3	54	0	55	0	53	0	41	1	38	2	59	1	53
3:45	2	63	2	68	1	72	1	53	2	45	0	32	0	59	1	56
4:00	0	78	1	58	1	85	2	48	1	34	0	39	1	65	1	58
4:15	1	75	0	69	1	56	0	64	1	39	0	26	0	57	0	55
4:30	1	47	5	65	1	68	3	57	0	27	3	22	5	63	3	50
4:45	1	61	1	60	2	60	3	64	1	33	1	28	1	41	1	50
5:00	1	64	5	66	3	65	3	61	1	35	1	28	4	79	3	57
5:15	2	41	4	69	3	65	4	64	0	40	0	25	3	61	2	52
5:30	2	61	3	64	7	63	5	68	0	28	0	27	5	50	3	52
5:45	5	40	8	57	2	70	2	43	0	33	0	34	8	50	4	47
6:00	1	37	5	42	8	50	7	45	2	25	1	31	6	40	4	39
6:15	9	34	13	33	7	42	11	38	2	44	3	18	9	35	8	35
6:30	11	45	9	44	14	39	9	35	3	36	7	17	16	28	10	35
6:45	11	21	17	32	15	39	17	45	3	32	7	16	12	29	12	31
7:00	18	45	11	31	13	40	16	37	5	20	7	12	19	37	13	32
7:15	31	24	22	32	25	34	30	25	10	18	2	21	28	19	21	25
7:30	30	20	43	16	35	25	24	42	13	17	14	16	36	14	28	21
7:45	32	15	28	22	32	26	30	27	10	21	6	13	31	14	24	20
8:00	35	21	40	24	42	22	35	19	16	21	8	20	34	26	30	22
8:15	39	16	35	19	25	16	49	24	17	12	18	12	35	13	31	16
8:30	43	16	29	11	37	12	51	24	21	15	15	12	33	9	33	14
8:45	38	17	34	11	35	15	47	14	30	15	18	5	32	11	33	13
9:00	42	20	30	17	39	28	33	25	21	18	16	5	25	15	29	18
9:15	46	10	37	9	43	12	49	13	28	7	22	4	38	6	38	9
9:30	37	4	40	8	35	6	45	16	40	11	24	4	35	5	37	8
9:45	40	1	31	7	40	6	45	15	55	12	31	3	30	5	39	7
10:00	39	3	38	6	42	4	29	10	39	7	18	4	32	2	34	5
10:15	38	1	38	1	41	5	26	5	34	6	27	1	29	2	33	3
10:30	49	1	41	1	40	2	46	9	54	4	34	1	29	1	42	3
10:45	37	3	40	5	46	2	68	5	36	2	31	6	39	1	42	3
11:00	54	3	36	2	46	5	45	4	51	2	30	5	37	2	43	3
11:15	45	5	37	3	37	4	65	5	49	4	32	3	39	2	43	4
11:30	46	2	56	1	57	5	63	2	51	7	23	2	51	3	50	3
11:45	64	5	53	5	44	3	62	3	59	1	47	1	38	0	52	3
Total	**863**	**1757**	**806**	**1765**	**828**	**1907**	**929**	**1906**	**674**	**1437**	**458**	**978**	**763**	**1597**	**760**	**1621**
Day Total	**2620**		**2571**		**2735**		**2835**		**2111**		**1436**		**2360**		**2381**	
Peak HR	**11:00 AM**	**3:30 PM**	**11:00 AM**	**2:30 PM**	**10:45 AM**	**3:15 PM**	**10:45 AM**	**2:00 PM**	**11:00 AM**	**12:15 PM**	**11:00 AM**	**3:15 PM**	**10:45 AM**	**3:45 PM**	**11:00 AM**	**2:15 PM**
Volume	**209**	**288**	**182**	**263**	**186**	**288**	**241**	**295**	**210**	**222**	**132**	**137**	**166**	**244**	**188**	**235**

Location Map: 239698 Needham, MA

Precision Data Industries, LLC 157 Washington Street, Suite 2, Hudson, MA 01749 ph: 508-875-0100 email: datareguests@pdillc.com

(4) 7-9am/4-6pm VCUs
(5) 7 Day 2L VCU-ATRs
(5) Add on HRs



Client:	Engineer:	Site Code:	Date:	PDI Job #	City, State:
Nitsch	B. Zimolka	TBD	Tues 1/23/24 - Mon 1/29/24	239698	Needham, MA

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Tuesday, January 23, 2024

Speed (60-minute)

NB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	1	3	0	0	0	0	0	0	0	4	35.6	34.5
1:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	2	28.0	25.5
2:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	2	36.3	34.5
3:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	35.0	35.0
4:00 AM	0	0	0	0	0	2	3	0	0	0	0	0	0	5	42.4	39.4
5:00 AM	0	0	0	3	19	21	2	0	0	0	0	0	0	45	38.0	34.6
6:00 AM	0	0	1	24	49	9	2	0	0	0	0	0	0	85	34.0	31.4
7:00 AM	19	14	21	60	25	13	1	0	0	0	0	0	0	153	32.2	24.8
8:00 AM	16	14	29	56	39	3	1	0	0	0	0	0	0	158	32.0	25.0
9:00 AM	9	4	26	74	64	13	1	0	0	0	0	0	0	191	33.0	27.6
10:00 AM	1	5	15	50	39	12	1	0	0	0	0	0	0	123	34.0	28.7
11:00 AM	0	1	21	47	46	17	2	0	0	0	0	0	0	134	34.0	29.3
12:00 PM	2	0	10	37	34	7	1	0	0	0	0	0	0	91	33.5	29.1
1:00 PM	1	1	23	36	40	8	0	0	0	0	0	0	0	109	34.0	28.4
2:00 PM	5	3	23	79	46	4	0	0	0	0	0	0	0	160	31.0	27.2
3:00 PM	3	3	18	56	50	12	2	0	0	0	0	0	0	144	33.0	28.7
4:00 PM	1	9	16	77	52	8	1	0	0	0	0	0	0	164	33.0	28.5
5:00 PM	3	2	19	60	41	5	0	0	0	0	0	0	0	130	31.0	27.6
6:00 PM	0	0	4	36	29	10	0	0	0	0	0	0	0	79	34.0	30.1
7:00 PM	1	2	5	21	21	5	0	0	0	0	0	0	0	55	33.0	28.9
8:00 PM	1	0	0	12	21	7	0	0	0	0	0	0	0	41	35.0	30.7
9:00 PM	0	1	2	10	18	5	0	0	0	0	0	0	0	36	34.0	30.5
10:00 PM	1	0	0	4	6	7	1	0	0	0	0	0	0	19	37.0	32.1
11:00 PM	0	0	2	1	2	2	0	0	0	0	0	0	0	7	36.3	30.6
Total	63	59	236	744	643	175	18	0	0	0	0	0	0	1938	33.0	28.3
Percent	3.25%	3.04%	12.18%	38.39%	33.18%	9.03%	0.93%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	7:00 AM	7:00 AM	8:00 AM	9:00 AM	9:00 AM	5:00 AM	4:00 AM							9:00 AM		
Volume	19	14	29	74	64	21	3	0	0	0	0	0	0	191		
PM Peak	2:00 PM	4:00 PM	1:00 PM	2:00 PM	4:00 PM	3:00 PM	3:00 PM							4:00 PM		
Volume	5	9	23	79	52	12	2	0	0	0	0	0	0	164		

15th Percentile:	24.0 MPH	Average Speed:	28.3 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	29.0 MPH	10 MPH Pace:	24 to 33 MPH	Number of Vehicles > 25 MPH:	1466
85th Percentile:	33.0 MPH	Number in Pace:	1395	Percent of Vehicles > 25 MPH:	75.6%
95th Percentile:	36.0 MPH	Percent in Pace:	72.0%		

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Tuesday, January 23, 2024

Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	1	0	2	2	0	0	0	0	0	0	0	5	35.4	31.6
1:00 AM	0	0	1	2	2	1	0	0	0	0	0	0	0	6	34.8	30.7
2:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	2	32.7	32.0
3:00 AM	1	0	0	0	2	0	0	0	0	0	0	0	0	3	33.0	26.3
4:00 AM	1	0	1	2	3	1	1	0	0	0	0	0	0	9	34.6	29.9
5:00 AM	0	0	3	2	13	8	1	0	0	0	0	0	0	27	37.0	32.1
6:00 AM	1	1	9	25	33	17	0	0	0	0	0	0	0	86	35.0	30.2
7:00 AM	7	13	32	85	102	28	2	1	0	0	0	0	0	270	33.0	28.5
8:00 AM	36	23	31	92	64	18	0	0	0	0	0	0	0	264	32.0	25.4
9:00 AM	11	32	23	50	61	19	1	0	0	0	0	0	0	197	33.6	26.5
10:00 AM	5	27	23	81	69	15	3	1	1	0	0	0	0	225	33.0	27.7
11:00 AM	3	11	32	73	94	20	1	0	0	0	0	0	0	234	33.0	28.5
12:00 PM	6	18	25	86	76	17	1	0	0	0	0	0	0	229	33.0	27.9
1:00 PM	7	20	32	82	88	18	0	0	0	0	0	0	0	247	33.0	27.6
2:00 PM	26	46	70	157	110	18	1	1	0	0	0	0	0	429	32.0	25.9
3:00 PM	5	19	48	134	109	27	2	0	0	0	0	0	0	344	33.0	28.1
4:00 PM	17	36	63	130	117	20	0	0	0	0	0	0	0	383	32.0	26.4
5:00 PM	13	26	64	145	112	7	1	0	0	0	0	0	0	368	32.0	26.7
6:00 PM	4	10	37	101	92	14	2	0	0	0	0	0	0	260	32.0	28.1
7:00 PM	1	6	36	72	72	15	1	0	0	0	0	0	0	203	33.0	28.4
8:00 PM	3	3	16	30	73	19	5	0	0	0	0	0	0	149	35.0	30.1
9:00 PM	2	5	6	25	44	18	0	1	0	0	0	0	0	101	35.0	29.8
10:00 PM	0	0	2	9	15	7	4	0	0	0	0	0	0	37	36.6	31.9
11:00 PM	0	1	2	13	10	13	3	0	0	0	0	0	0	42	37.9	32.0
Total	149	297	557	1396	1365	322	29	4	1	0	0	0	0	4120	33.0	27.6
Percent	3.62%	7.21%	13.52%	33.88%	33.13%	7.82%	0.70%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	9:00 AM	7:00 AM	8:00 AM	7:00 AM	7:00 AM	10:00 AM	7:00 AM	10:00 AM					7:00 AM		
Volume	36	32	32	92	102	28	3	1	1	0	0	0	0	270		
PM Peak	2:00 PM	2:00 PM	2:00 PM	2:00 PM	4:00 PM	3:00 PM	8:00 PM	2:00 PM						2:00 PM		
Volume	26	46	70	157	117	27	5	1	0	0	0	0	0	429		

15th Percentile:	22.0 MPH	Average Speed:	27.6 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	28.0 MPH	10 MPH Pace:	24 to 33 MPH	Number of Vehicles > 25 MPH:	2925
85th Percentile:	33.0 MPH	Number in Pace:	2803	Percent of Vehicles > 25 MPH:	71.0%
95th Percentile:	36.0 MPH	Percent in Pace:	68.0%		

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Tuesday, January 23, 2024

Speed (60-minute)

Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	1	0	3	5	0	0	0	0	0	0	0	9	35.8	32.9
1:00 AM	0	0	2	3	2	1	0	0	0	0	0	0	0	8	34.0	29.4
2:00 AM	0	0	0	0	3	1	0	0	0	0	0	0	0	4	35.2	33.3
3:00 AM	1	0	0	0	2	1	0	0	0	0	0	0	0	4	34.1	28.5
4:00 AM	1	0	1	2	3	3	4	0	0	0	0	0	0	14	42.1	33.3
5:00 AM	0	0	3	5	32	29	3	0	0	0	0	0	0	72	38.0	33.7
6:00 AM	1	1	10	49	82	26	2	0	0	0	0	0	0	171	35.0	30.7
7:00 AM	26	27	53	145	127	41	3	1	0	0	0	0	0	423	33.0	27.2
8:00 AM	52	37	60	148	103	21	1	0	0	0	0	0	0	422	32.0	25.3
9:00 AM	20	36	49	124	125	32	2	0	0	0	0	0	0	388	33.0	27.1
10:00 AM	6	32	38	131	108	27	4	1	1	0	0	0	0	348	33.0	28.0
11:00 AM	3	12	53	120	140	37	3	0	0	0	0	0	0	368	33.0	28.8
12:00 PM	8	18	35	123	110	24	2	0	0	0	0	0	0	320	33.0	28.2
1:00 PM	8	21	55	118	128	26	0	0	0	0	0	0	0	356	33.0	27.9
2:00 PM	31	49	93	236	156	22	1	1	0	0	0	0	0	589	31.0	26.2
3:00 PM	8	22	66	190	159	39	4	0	0	0	0	0	0	488	33.0	28.3
4:00 PM	18	45	79	207	169	28	1	0	0	0	0	0	0	547	32.0	27.0
5:00 PM	16	28	83	205	153	12	1	0	0	0	0	0	0	498	32.0	26.9
6:00 PM	4	10	41	137	121	24	2	0	0	0	0	0	0	339	33.0	28.5
7:00 PM	2	8	41	93	93	20	1	0	0	0	0	0	0	258	33.0	28.5
8:00 PM	4	3	16	42	94	26	5	0	0	0	0	0	0	190	35.0	30.3
9:00 PM	2	6	8	35	62	23	0	1	0	0	0	0	0	137	35.0	29.9
10:00 PM	1	0	2	13	21	14	5	0	0	0	0	0	0	56	37.0	32.0
11:00 PM	0	1	4	14	12	15	3	0	0	0	0	0	0	49	37.8	31.8
Total	212	356	793	2140	2008	497	47	4	1	0	0	0	0	6058	33.0	27.8
Percent	3.50%	5.88%	13.09%	35.33%	33.15%	8.20%	0.78%	0.07%	0.02%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	8:00 AM	8:00 AM	8:00 AM	11:00 AM	7:00 AM	4:00 AM	7:00 AM	10:00 AM					7:00 AM		
Volume	52	37	60	148	140	41	4	1	1	0	0	0	0	423		
PM Peak	2:00 PM	2:00 PM	2:00 PM	2:00 PM	4:00 PM	3:00 PM	8:00 PM	2:00 PM						2:00 PM		
Volume	31	49	93	236	169	39	5	1	0	0	0	0	0	589		

15th Percentile:	22.0 MPH	Average Speed:	27.8 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	29.0 MPH	10 MPH Pace:	24 to 33 MPH	Number of Vehicles > 25 MPH:	4391
85th Percentile:	33.0 MPH	Number in Pace:	4198	Percent of Vehicles > 25 MPH:	72.5%
95th Percentile:	36.0 MPH	Percent in Pace:	69.3%		

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Wednesday, January 24, 2024

Speed (60-minute)

NB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	2	41.1	39.0
1:00 AM	0	0	2	1	0	1	0	0	0	0	0	0	0	4	32.5	27.0
2:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	2	26.9	26.5
3:00 AM	0	1	2	1	1	3	0	0	0	0	0	0	0	8	37.9	28.5
4:00 AM	2	2	2	4	6	2	1	0	0	0	0	0	0	19	34.6	26.8
5:00 AM	0	0	3	10	19	6	0	0	0	0	0	0	0	38	34.5	30.5
6:00 AM	0	0	5	30	28	12	1	0	1	0	0	0	0	77	35.0	30.9
7:00 AM	4	8	21	58	48	4	2	0	0	0	0	0	0	145	32.0	27.5
8:00 AM	10	12	41	59	45	11	3	0	0	0	0	0	0	181	32.0	26.3
9:00 AM	0	5	10	42	57	13	2	0	0	0	0	0	0	129	34.0	30.0
10:00 AM	3	5	8	26	36	10	1	0	0	0	0	0	0	89	34.0	28.9
11:00 AM	7	5	6	29	39	14	3	0	0	0	0	0	0	103	35.0	28.4
12:00 PM	1	0	1	5	1	0	0	0	0	0	0	0	0	8	29.0	25.5
1:00 PM	8	5	4	19	21	5	0	0	0	0	0	0	0	62	32.9	25.9
2:00 PM	0	0	10	49	44	6	1	0	0	0	0	0	0	110	33.0	29.3
3:00 PM	0	1	7	39	53	7	1	1	0	0	0	0	0	109	33.0	29.9
4:00 PM	0	2	7	36	32	5	1	0	0	0	0	0	0	83	33.0	29.3
5:00 PM	1	1	21	37	32	7	1	0	0	0	0	0	0	100	33.0	28.2
6:00 PM	3	2	25	30	14	1	0	0	0	0	0	0	0	75	30.0	25.8
7:00 PM	0	0	5	14	13	6	0	0	0	0	0	0	0	38	34.5	29.4
8:00 PM	0	0	2	9	14	3	2	0	0	0	0	0	0	30	34.3	30.7
9:00 PM	0	1	0	5	15	1	1	0	0	0	0	0	0	23	34.0	31.3
10:00 PM	0	0	1	8	6	1	0	0	0	0	0	0	0	16	32.0	29.3
11:00 PM	0	0	0	0	2	3	2	0	0	0	0	0	0	7	43.1	37.6
Total	39	50	183	513	526	122	23	1	1	0	0	0	0	1458	33.0	28.5
Percent	2.67%	3.43%	12.55%	35.19%	36.08%	8.37%	1.58%	0.07%	0.07%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	8:00 AM	8:00 AM	8:00 AM	9:00 AM	11:00 AM	8:00 AM		6:00 AM					8:00 AM		
Volume	10	12	41	59	57	14	3	0	1	0	0	0	0	181		
PM Peak	1:00 PM	1:00 PM	6:00 PM	2:00 PM	3:00 PM	3:00 PM	8:00 PM	3:00 PM						2:00 PM		
Volume	8	5	25	49	53	7	2	1	0	0	0	0	0	110		

15th Percentile:	24.0 MPH	Average Speed:	28.5 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	29.0 MPH	10 MPH Pace:	24 to 33 MPH	Number of Vehicles > 25 MPH:	1125
85th Percentile:	33.0 MPH	Number in Pace:	1043	Percent of Vehicles > 25 MPH:	77.2%
95th Percentile:	36.0 MPH	Percent in Pace:	71.5%		

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

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Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Wednesday, January 24, 2024

Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	2	2	4	4	0	0	0	0	0	0	0	12	37.0	31.3
1:00 AM	0	1	6	4	5	0	0	0	0	0	0	0	0	16	30.8	26.1
2:00 AM	0	2	1	3	3	0	0	0	0	0	0	0	0	9	32.4	26.2
3:00 AM	0	2	1	8	2	2	0	0	0	0	0	0	0	15	30.9	27.1
4:00 AM	0	0	0	2	9	0	0	0	0	0	0	0	0	11	33.5	31.5
5:00 AM	0	0	5	8	11	3	0	0	0	0	0	0	0	27	34.0	29.4
6:00 AM	1	9	9	22	28	16	1	0	1	0	0	0	0	87	35.0	29.4
7:00 AM	18	28	40	83	117	14	1	0	0	0	0	0	0	301	32.0	26.8
8:00 AM	17	29	34	76	94	17	1	0	0	0	0	0	0	268	32.0	26.6
9:00 AM	13	23	30	63	79	19	5	0	0	0	0	0	0	232	33.4	27.5
10:00 AM	6	14	22	54	67	12	2	1	1	0	0	0	0	179	33.0	28.0
11:00 AM	16	37	38	88	83	15	1	0	0	0	0	0	0	278	32.0	26.1
12:00 PM	31	38	63	66	65	6	0	0	0	0	0	0	0	269	31.8	24.1
1:00 PM	15	21	31	90	73	12	1	1	0	0	0	0	0	244	32.0	26.6
2:00 PM	7	17	41	106	128	32	2	1	0	0	0	0	0	334	33.1	28.6
3:00 PM	11	23	50	119	131	29	3	0	0	0	0	0	0	366	33.0	27.9
4:00 PM	17	23	62	149	117	22	0	0	0	0	0	0	0	390	32.0	26.9
5:00 PM	23	32	56	150	103	8	0	0	0	0	0	0	0	372	31.0	25.8
6:00 PM	16	19	60	122	64	12	0	0	0	0	0	0	0	293	31.0	26.1
7:00 PM	3	14	28	58	53	17	2	0	0	0	0	0	0	175	33.0	27.7
8:00 PM	4	8	34	41	57	17	2	0	0	0	0	0	0	163	34.0	27.9
9:00 PM	1	0	6	32	48	11	2	0	0	0	0	0	0	100	33.2	30.1
10:00 PM	0	1	5	18	23	8	1	0	0	0	0	0	0	56	34.8	30.3
11:00 PM	1	0	1	10	18	11	3	1	0	0	0	0	0	45	37.4	32.6
Total	200	341	625	1374	1382	287	27	4	2	0	0	0	0	4242	33.0	27.1
Percent	4.71%	8.04%	14.73%	32.39%	32.58%	6.77%	0.64%	0.09%	0.05%	0.00%	0.00%	0.00%	0.00%			
AM Peak	7:00 AM	11:00 AM	7:00 AM	11:00 AM	7:00 AM	9:00 AM	9:00 AM	10:00 AM	6:00 AM					7:00 AM		
Volume	18	37	40	88	117	19	5	1	1	0	0	0	0	301		
PM Peak	12:00 PM	12:00 PM	12:00 PM	5:00 PM	3:00 PM	2:00 PM	3:00 PM	1:00 PM						4:00 PM		
Volume	31	38	63	150	131	32	3	1	0	0	0	0	0	390		

15th Percentile:	20.2 MPH	Average Speed:	27.1 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	28.0 MPH	10 MPH Pace:	24 to 33 MPH	Number of Vehicles > 25 MPH:	2876
85th Percentile:	33.0 MPH	Number in Pace:	2764	Percent of Vehicles > 25 MPH:	67.8%
95th Percentile:	36.0 MPH	Percent in Pace:	65.2%		

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Wednesday, January 24, 2024

Speed (60-minute)

Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	2	2	4	5	1	0	0	0	0	0	0	14	37.1	32.4
1:00 AM	0	1	8	5	5	1	0	0	0	0	0	0	0	20	31.2	26.3
2:00 AM	0	2	1	5	3	0	0	0	0	0	0	0	0	11	31.5	26.3
3:00 AM	0	3	3	9	3	5	0	0	0	0	0	0	0	23	35.7	27.6
4:00 AM	2	2	2	6	15	2	1	0	0	0	0	0	0	30	34.0	28.5
5:00 AM	0	0	8	18	30	9	0	0	0	0	0	0	0	65	34.0	30.0
6:00 AM	1	9	14	52	56	28	2	0	2	0	0	0	0	164	35.0	30.1
7:00 AM	22	36	61	141	165	18	3	0	0	0	0	0	0	446	32.0	27.0
8:00 AM	27	41	75	135	139	28	4	0	0	0	0	0	0	449	32.0	26.5
9:00 AM	13	28	40	105	136	32	7	0	0	0	0	0	0	361	34.0	28.4
10:00 AM	9	19	30	80	103	22	3	1	1	0	0	0	0	268	33.0	28.3
11:00 AM	23	42	44	117	122	29	4	0	0	0	0	0	0	381	33.0	26.8
12:00 PM	32	38	64	71	66	6	0	0	0	0	0	0	0	277	31.0	24.1
1:00 PM	23	26	35	109	94	17	1	1	0	0	0	0	0	306	32.0	26.5
2:00 PM	7	17	51	155	172	38	3	1	0	0	0	0	0	444	33.0	28.8
3:00 PM	11	24	57	158	184	36	4	1	0	0	0	0	0	475	33.0	28.3
4:00 PM	17	25	69	185	149	27	1	0	0	0	0	0	0	473	32.0	27.3
5:00 PM	24	33	77	187	135	15	1	0	0	0	0	0	0	472	32.0	26.3
6:00 PM	19	21	85	152	78	13	0	0	0	0	0	0	0	368	31.0	26.0
7:00 PM	3	14	33	72	66	23	2	0	0	0	0	0	0	213	33.0	28.0
8:00 PM	4	8	36	50	71	20	4	0	0	0	0	0	0	193	34.0	28.3
9:00 PM	1	1	6	37	63	12	3	0	0	0	0	0	0	123	34.0	30.3
10:00 PM	0	1	6	26	29	9	1	0	0	0	0	0	0	72	34.0	30.0
11:00 PM	1	0	1	10	20	14	5	1	0	0	0	0	0	52	39.0	33.2
Total	239	391	808	1887	1908	409	50	5	3	0	0	0	0	5700	33.0	27.5
Percent	4.19%	6.86%	14.18%	33.11%	33.47%	7.18%	0.88%	0.09%	0.05%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	11:00 AM	8:00 AM	7:00 AM	7:00 AM	9:00 AM	9:00 AM	10:00 AM	6:00 AM					8:00 AM		
Volume	27	42	75	141	165	32	7	1	2	0	0	0	0	449		
PM Peak	12:00 PM	12:00 PM	6:00 PM	5:00 PM	3:00 PM	2:00 PM	11:00 PM	1:00 PM						3:00 PM		
Volume	32	38	85	187	184	38	5	1	0	0	0	0	0	475		

15th Percentile:	21.0 MPH	Average Speed:	27.5 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	28.0 MPH	10 MPH Pace:	24 to 33 MPH	Number of Vehicles > 25 MPH:	4001
85th Percentile:	33.0 MPH	Number in Pace:	3807	Percent of Vehicles > 25 MPH:	70.2%
95th Percentile:	36.0 MPH	Percent in Pace:	66.8%		

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Thursday, January 25, 2024

Speed (60-minute)

NB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	2	0	2	0	0	0	0	0	0	0	4	35.0	30.8
1:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	33.1	31.0
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	33.0	33.0
3:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	44.0	44.0
4:00 AM	1	0	0	3	2	0	1	0	0	0	0	0	0	7	33.8	28.7
5:00 AM	1	0	1	5	16	7	3	0	0	0	0	0	0	33	37.0	32.0
6:00 AM	0	0	0	12	21	16	3	1	0	0	0	0	0	53	38.0	33.6
7:00 AM	2	3	11	45	47	4	1	0	0	0	0	0	0	113	32.0	28.4
8:00 AM	3	4	23	62	42	12	0	0	0	0	0	0	0	146	33.0	27.7
9:00 AM	8	8	15	42	38	4	0	0	0	0	0	0	0	115	32.0	26.4
10:00 AM	3	6	7	44	45	11	1	0	0	0	0	0	0	117	33.0	28.7
11:00 AM	1	1	6	37	48	16	2	1	0	0	0	0	0	112	35.0	30.5
12:00 PM	1	1	10	30	44	13	0	0	0	0	0	0	0	99	34.0	29.7
1:00 PM	1	5	4	44	46	9	3	0	0	0	0	0	0	112	33.0	29.3
2:00 PM	8	4	17	39	21	10	2	0	0	0	0	0	0	101	32.0	26.8
3:00 PM	5	7	9	24	8	2	0	0	0	0	0	0	0	55	30.0	24.7
4:00 PM	1	4	21	53	40	10	1	0	0	0	0	0	0	130	33.0	28.2
5:00 PM	3	4	11	38	15	2	0	0	0	0	0	0	0	73	31.0	26.4
6:00 PM	0	0	4	5	4	1	0	0	0	0	0	0	0	14	31.1	27.3
7:00 PM	1	0	10	26	26	4	0	0	0	0	0	0	0	67	33.0	28.7
8:00 PM	0	0	3	14	21	8	0	0	0	0	0	0	0	46	35.0	30.6
9:00 PM	0	0	5	10	29	5	1	0	0	0	0	0	0	50	34.0	31.1
10:00 PM	0	0	0	3	10	7	0	0	0	0	0	0	0	20	36.0	32.9
11:00 PM	0	0	0	1	7	5	3	0	0	0	0	0	0	16	39.5	35.1
Total	39	47	157	540	532	148	22	2	0	0	0	0	0	1487	34.0	28.7
Percent	2.62%	3.16%	10.56%	36.31%	35.78%	9.95%	1.48%	0.13%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	9:00 AM	9:00 AM	8:00 AM	8:00 AM	11:00 AM	6:00 AM	5:00 AM	6:00 AM						8:00 AM		
Volume	8	8	23	62	48	16	3	1	0	0	0	0	0	146		
PM Peak	2:00 PM	3:00 PM	4:00 PM	4:00 PM	1:00 PM	12:00 PM	1:00 PM							4:00 PM		
Volume	8	7	21	53	46	13	3	0	0	0	0	0	0	130		

15th Percentile:	24.0 MPH	Average Speed:	28.7 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	29.0 MPH	10 MPH Pace:	25 to 34 MPH	Number of Vehicles > 25 MPH:	1151
85th Percentile:	34.0 MPH	Number in Pace:	1072	Percent of Vehicles > 25 MPH:	77.4%
95th Percentile:	36.0 MPH	Percent in Pace:	72.1%		

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Thursday, January 25, 2024

Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	1	1	7	5	1	0	0	0	0	0	0	15	37.9	33.3
1:00 AM	0	0	1	0	0	3	0	0	0	0	0	0	0	4	38.1	33.8
2:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	2	27.1	25.0
3:00 AM	0	0	1	2	2	0	0	0	0	0	0	0	0	5	32.2	28.6
4:00 AM	1	0	0	3	1	4	0	0	0	0	0	0	0	9	35.0	29.8
5:00 AM	1	2	0	2	8	3	0	0	0	0	0	0	0	16	34.8	29.1
6:00 AM	2	3	5	19	43	16	1	0	0	0	0	0	0	89	35.0	30.2
7:00 AM	16	40	31	73	78	14	1	1	0	0	0	0	0	254	32.0	26.0
8:00 AM	19	54	75	82	88	15	0	0	0	0	0	0	0	333	32.0	25.2
9:00 AM	16	24	23	75	54	14	2	0	0	0	0	0	0	208	32.0	26.2
10:00 AM	11	24	38	80	78	15	0	0	0	0	0	0	0	246	33.0	26.9
11:00 AM	6	26	40	78	95	16	2	0	0	0	0	0	0	263	33.0	27.4
12:00 PM	9	27	59	89	70	17	1	0	0	0	0	0	0	272	32.0	26.4
1:00 PM	6	19	47	92	84	19	0	1	0	0	0	0	0	268	33.0	27.4
2:00 PM	9	13	34	85	75	12	2	0	0	0	0	0	0	230	32.7	27.4
3:00 PM	8	6	24	63	38	6	0	0	0	0	0	0	0	145	32.0	26.7
4:00 PM	25	39	73	118	79	23	1	2	0	0	0	0	0	360	32.0	25.6
5:00 PM	5	13	75	110	50	5	1	0	0	0	0	0	0	259	30.0	25.9
6:00 PM	8	18	65	92	44	6	0	1	0	0	0	0	0	234	30.0	25.8
7:00 PM	1	14	38	95	69	11	2	0	0	0	0	0	0	230	33.0	27.7
8:00 PM	3	4	23	67	71	16	0	0	0	0	0	0	0	184	33.0	28.7
9:00 PM	2	5	11	56	37	7	6	0	0	0	0	0	0	124	34.0	28.7
10:00 PM	0	1	4	17	28	16	2	0	0	0	0	0	0	68	35.0	31.3
11:00 PM	0	1	1	9	22	16	2	1	0	0	0	0	0	52	36.4	32.8
Total	148	333	670	1309	1121	259	24	6	0	0	0	0	0	3870	33.0	26.9
Percent	3.82%	8.60%	17.31%	33.82%	28.97%	6.69%	0.62%	0.16%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	8:00 AM	8:00 AM	8:00 AM	11:00 AM	6:00 AM	9:00 AM	7:00 AM						8:00 AM		
Volume	19	54	75	82	95	16	2	1	0	0	0	0	0	333		
PM Peak	4:00 PM	4:00 PM	5:00 PM	4:00 PM	1:00 PM	4:00 PM	9:00 PM	4:00 PM						4:00 PM		
Volume	25	39	75	118	84	23	6	2	0	0	0	0	0	360		

15th Percentile:	21.0 MPH	Average Speed:	26.9 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	28.0 MPH	10 MPH Pace:	24 to 33 MPH	Number of Vehicles > 25 MPH:	2500
85th Percentile:	33.0 MPH	Number in Pace:	2493	Percent of Vehicles > 25 MPH:	64.6%
95th Percentile:	35.0 MPH	Percent in Pace:	64.4%		

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Thursday, January 25, 2024

Speed (60-minute)

Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	1	3	7	7	1	0	0	0	0	0	0	19	37.3	32.8
1:00 AM	0	0	1	1	1	3	0	0	0	0	0	0	0	6	37.5	32.8
2:00 AM	0	0	1	1	1	0	0	0	0	0	0	0	0	3	31.5	27.7
3:00 AM	0	0	1	2	2	0	1	0	0	0	0	0	0	6	36.5	31.2
4:00 AM	2	0	0	6	3	4	1	0	0	0	0	0	0	16	35.0	29.3
5:00 AM	2	2	1	7	24	10	3	0	0	0	0	0	0	49	36.0	31.1
6:00 AM	2	3	5	31	64	32	4	1	0	0	0	0	0	142	36.0	31.5
7:00 AM	18	43	42	118	125	18	2	1	0	0	0	0	0	367	32.0	26.7
8:00 AM	22	58	98	144	130	27	0	0	0	0	0	0	0	479	32.0	26.0
9:00 AM	24	32	38	117	92	18	2	0	0	0	0	0	0	323	32.0	26.3
10:00 AM	14	30	45	124	123	26	1	0	0	0	0	0	0	363	33.0	27.5
11:00 AM	7	27	46	115	143	32	4	1	0	0	0	0	0	375	33.9	28.4
12:00 PM	10	28	69	119	114	30	1	0	0	0	0	0	0	371	33.0	27.3
1:00 PM	7	24	51	136	130	28	3	1	0	0	0	0	0	380	33.0	27.9
2:00 PM	17	17	51	124	96	22	4	0	0	0	0	0	0	331	32.5	27.2
3:00 PM	13	13	33	87	46	8	0	0	0	0	0	0	0	200	31.2	26.1
4:00 PM	26	43	94	171	119	33	2	2	0	0	0	0	0	490	32.0	26.3
5:00 PM	8	17	86	148	65	7	1	0	0	0	0	0	0	332	31.0	26.0
6:00 PM	8	18	69	97	48	7	0	1	0	0	0	0	0	248	31.0	25.9
7:00 PM	2	14	48	121	95	15	2	0	0	0	0	0	0	297	33.0	27.9
8:00 PM	3	4	26	81	92	24	0	0	0	0	0	0	0	230	34.0	29.0
9:00 PM	2	5	16	66	66	12	7	0	0	0	0	0	0	174	34.0	29.4
10:00 PM	0	1	4	20	38	23	2	0	0	0	0	0	0	88	36.0	31.6
11:00 PM	0	1	1	10	29	21	5	1	0	0	0	0	0	68	37.0	33.3
Total	187	380	827	1849	1653	407	46	8	0	0	0	0	0	5357	33.0	27.4
Percent	3.49%	7.09%	15.44%	34.52%	30.86%	7.60%	0.86%	0.15%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	9:00 AM	8:00 AM	8:00 AM	8:00 AM	11:00 AM	6:00 AM	6:00 AM	6:00 AM						8:00 AM		
Volume	24	58	98	144	143	32	4	1	0	0	0	0	0	479		
PM Peak	4:00 PM	4:00 PM	4:00 PM	4:00 PM	1:00 PM	4:00 PM	9:00 PM	4:00 PM						4:00 PM		
Volume	26	43	94	171	130	33	7	2	0	0	0	0	0	490		

15th Percentile:	22.0 MPH	Average Speed:	27.4 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	28.0 MPH	10 MPH Pace:	24 to 33 MPH	Number of Vehicles > 25 MPH:	3651
85th Percentile:	33.0 MPH	Number in Pace:	3562	Percent of Vehicles > 25 MPH:	68.2%
95th Percentile:	36.0 MPH	Percent in Pace:	66.5%		

Dedham Avenue (Route 135)
south of Lincoln Street
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Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Friday, January 26, 2024

Speed (60-minute)

NB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	2	36.0	33.5
1:00 AM	0	0	1	0	1	0	1	0	0	0	0	0	0	3	37.6	30.7
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
3:00 AM	0	0	0	1	2	0	1	0	0	0	0	0	0	4	38.4	34.0
4:00 AM	0	0	0	1	2	4	1	0	0	0	0	0	0	8	39.0	35.3
5:00 AM	0	0	1	11	12	9	2	0	0	0	0	0	0	35	36.9	32.2
6:00 AM	0	0	1	22	29	6	1	0	0	0	0	0	0	59	33.3	30.7
7:00 AM	0	1	7	37	30	4	2	0	0	0	0	0	0	81	33.0	29.4
8:00 AM	25	0	17	29	25	3	2	0	0	0	0	0	0	101	32.0	23.5
9:00 AM	1	1	2	17	22	4	1	0	0	0	0	0	0	48	34.0	29.9
10:00 AM	0	1	1	22	18	3	0	0	0	0	0	0	0	45	33.4	29.5
11:00 AM	0	0	3	16	27	1	0	0	0	0	0	0	0	47	32.0	29.8
12:00 PM	0	0	6	19	11	3	1	0	0	0	0	0	0	40	33.0	28.9
1:00 PM	5	4	11	28	20	2	0	0	0	0	0	0	0	70	32.0	26.3
2:00 PM	0	0	11	34	24	4	0	0	0	0	0	0	0	73	32.0	28.8
3:00 PM	1	0	7	35	20	2	0	0	0	0	0	0	0	65	33.0	28.4
4:00 PM	10	3	19	33	15	1	0	0	0	0	0	0	0	81	30.0	24.1
5:00 PM	9	4	12	39	24	5	0	0	0	0	0	0	0	93	32.0	26.2
6:00 PM	2	3	12	37	18	4	0	0	0	0	0	0	0	76	32.0	27.1
7:00 PM	0	0	14	22	14	11	3	0	0	0	0	0	0	64	36.0	29.2
8:00 PM	0	0	2	13	20	1	1	0	0	0	0	0	0	37	32.0	29.5
9:00 PM	0	0	0	8	16	1	1	0	0	0	0	0	0	26	34.0	31.3
10:00 PM	0	0	1	2	8	5	0	0	0	0	0	0	0	16	36.8	32.4
11:00 PM	0	1	1	0	3	2	1	0	0	0	0	0	0	8	37.9	31.3
Total	53	18	129	426	362	76	18	0	0	0	0	0	0	1082	33.0	28.1
Percent	4.90%	1.66%	11.92%	39.37%	33.46%	7.02%	1.66%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	7:00 AM	8:00 AM	7:00 AM	7:00 AM	5:00 AM	5:00 AM							8:00 AM		
Volume	25	1	17	37	30	9	2	0	0	0	0	0	0	101		
PM Peak	4:00 PM	1:00 PM	4:00 PM	5:00 PM	2:00 PM	7:00 PM	7:00 PM							5:00 PM		
Volume	10	4	19	39	24	11	3	0	0	0	0	0	0	93		

15th Percentile:	24.0 MPH	Average Speed:	28.1 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	29.0 MPH	10 MPH Pace:	25 to 34 MPH	Number of Vehicles > 25 MPH:	812
85th Percentile:	33.0 MPH	Number in Pace:	788	Percent of Vehicles > 25 MPH:	75.0%
95th Percentile:	37.0 MPH	Percent in Pace:	72.8%		

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Friday, January 26, 2024

Speed (60-minute)

SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	3	5	7	2	0	1	0	0	0	0	18	39.9	35.6
1:00 AM	0	0	1	1	3	2	0	0	0	0	0	0	0	7	37.1	31.7
2:00 AM	0	0	0	4	2	0	0	0	0	0	0	0	0	6	32.3	27.7
3:00 AM	0	0	0	2	4	1	0	0	0	0	0	0	0	7	34.2	31.7
4:00 AM	0	1	0	0	5	0	0	0	0	0	0	0	0	6	33.0	29.2
5:00 AM	0	2	2	4	5	1	1	0	0	0	0	0	0	15	32.9	28.9
6:00 AM	1	2	11	14	29	11	0	0	0	0	0	0	0	68	35.0	29.7
7:00 AM	13	25	37	61	91	16	2	0	0	0	0	0	0	245	33.0	27.0
8:00 AM	22	33	33	64	67	16	1	1	0	0	0	0	0	237	33.0	25.7
9:00 AM	7	19	30	52	77	20	2	1	0	0	0	0	0	208	34.0	27.8
10:00 AM	13	25	48	61	65	13	1	0	0	0	0	0	0	226	32.0	26.1
11:00 AM	6	27	40	93	93	19	1	0	0	0	0	0	0	279	33.0	27.4
12:00 PM	16	33	52	87	69	12	0	0	0	0	0	0	0	269	32.0	25.6
1:00 PM	14	28	39	81	91	22	1	0	0	0	0	0	0	276	33.0	27.1
2:00 PM	12	31	77	142	94	16	4	0	0	0	0	0	0	376	32.0	26.6
3:00 PM	18	39	49	104	111	28	6	0	0	0	0	0	0	355	33.0	27.0
4:00 PM	16	36	31	105	87	16	1	0	1	0	0	0	0	293	33.0	26.7
5:00 PM	22	27	51	130	75	13	1	0	0	0	0	0	0	319	31.0	25.7
6:00 PM	25	31	53	114	61	8	0	0	0	0	0	0	0	292	31.0	24.9
7:00 PM	7	20	33	78	69	18	0	0	0	0	0	0	0	225	33.0	27.3
8:00 PM	2	6	18	35	55	20	2	0	0	0	0	0	0	138	35.0	29.2
9:00 PM	1	0	13	35	59	21	1	0	0	0	0	0	0	130	35.0	30.7
10:00 PM	0	0	3	19	40	7	2	0	0	0	0	0	0	71	33.5	31.1
11:00 PM	0	0	0	5	19	27	5	0	0	0	0	0	0	56	39.0	35.0
Total	195	385	621	1294	1276	314	33	2	2	0	0	0	0	4122	33.0	27.1
Percent	4.73%	9.34%	15.07%	31.39%	30.96%	7.62%	0.80%	0.05%	0.05%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	8:00 AM	10:00 AM	11:00 AM	11:00 AM	9:00 AM	12:00 AM	8:00 AM	12:00 AM					11:00 AM		
Volume	22	33	48	93	93	20	2	1	1	0	0	0	0	279		
PM Peak	6:00 PM	3:00 PM	2:00 PM	2:00 PM	3:00 PM	3:00 PM	3:00 PM		4:00 PM					2:00 PM		
Volume	25	39	77	142	111	28	6	0	1	0	0	0	0	376		

15th Percentile:	20.0 MPH	Average Speed:	27.1 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	28.0 MPH	10 MPH Pace:	24 to 33 MPH	Number of Vehicles > 25 MPH:	2758
85th Percentile:	33.0 MPH	Number in Pace:	2587	Percent of Vehicles > 25 MPH:	66.9%
95th Percentile:	36.0 MPH	Percent in Pace:	62.8%		

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Friday, January 26, 2024

Speed (60-minute)

Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	3	6	8	2	0	1	0	0	0	0	20	39.3	35.4
1:00 AM	0	0	2	1	4	2	1	0	0	0	0	0	0	10	37.7	31.4
2:00 AM	0	0	0	4	2	0	0	0	0	0	0	0	0	6	32.3	27.7
3:00 AM	0	0	0	3	6	1	1	0	0	0	0	0	0	11	35.0	32.5
4:00 AM	0	1	0	1	7	4	1	0	0	0	0	0	0	14	38.1	32.6
5:00 AM	0	2	3	15	17	10	3	0	0	0	0	0	0	50	36.7	31.2
6:00 AM	1	2	12	36	58	17	1	0	0	0	0	0	0	127	34.0	30.1
7:00 AM	13	26	44	98	121	20	4	0	0	0	0	0	0	326	33.0	27.6
8:00 AM	47	33	50	93	92	19	3	1	0	0	0	0	0	338	32.0	25.0
9:00 AM	8	20	32	69	99	24	3	1	0	0	0	0	0	256	34.0	28.2
10:00 AM	13	26	49	83	83	16	1	0	0	0	0	0	0	271	32.5	26.7
11:00 AM	6	27	43	109	120	20	1	0	0	0	0	0	0	326	33.0	27.8
12:00 PM	16	33	58	106	80	15	1	0	0	0	0	0	0	309	32.0	26.1
1:00 PM	19	32	50	109	111	24	1	0	0	0	0	0	0	346	32.0	27.0
2:00 PM	12	31	88	176	118	20	4	0	0	0	0	0	0	449	32.0	27.0
3:00 PM	19	39	56	139	131	30	6	0	0	0	0	0	0	420	33.0	27.2
4:00 PM	26	39	50	138	102	17	1	0	1	0	0	0	0	374	32.1	26.2
5:00 PM	31	31	63	169	99	18	1	0	0	0	0	0	0	412	31.0	25.8
6:00 PM	27	34	65	151	79	12	0	0	0	0	0	0	0	368	31.0	25.3
7:00 PM	7	20	47	100	83	29	3	0	0	0	0	0	0	289	33.0	27.7
8:00 PM	2	6	20	48	75	21	3	0	0	0	0	0	0	175	34.0	29.3
9:00 PM	1	0	13	43	75	22	2	0	0	0	0	0	0	156	34.8	30.8
10:00 PM	0	0	4	21	48	12	2	0	0	0	0	0	0	87	35.0	31.3
11:00 PM	0	1	1	5	22	29	6	0	0	0	0	0	0	64	39.0	34.5
Total	248	403	750	1720	1638	390	51	2	2	0	0	0	0	5204	33.0	27.3
Percent	4.77%	7.74%	14.41%	33.05%	31.48%	7.49%	0.98%	0.04%	0.04%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	8:00 AM	8:00 AM	11:00 AM	7:00 AM	9:00 AM	7:00 AM	8:00 AM	12:00 AM					8:00 AM		
Volume	47	33	50	109	121	24	4	1	1	0	0	0	0	338		
PM Peak	5:00 PM	3:00 PM	2:00 PM	2:00 PM	3:00 PM	3:00 PM	3:00 PM		4:00 PM					2:00 PM		
Volume	31	39	88	176	131	30	6	0	1	0	0	0	0	449		

15th Percentile:	21.0 MPH	Average Speed:	27.3 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	28.0 MPH	10 MPH Pace:	24 to 33 MPH	Number of Vehicles > 25 MPH:	3651
85th Percentile:	33.0 MPH	Number in Pace:	3366	Percent of Vehicles > 25 MPH:	70.2%
95th Percentile:	36.0 MPH	Percent in Pace:	64.7%		

Dedham Avenue (Route 135)
south of Lincoln Street
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Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Saturday, January 27, 2024

Speed (60-minute)

NB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	1	1	3	0	0	0	0	0	0	0	5	35.8	33.2
1:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	40.0	40.0
2:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	35.0	35.0
3:00 AM	0	0	0	1	0	0	1	0	0	0	0	0	0	2	41.6	36.0
4:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	2	25.0	25.0
5:00 AM	0	0	0	3	6	4	1	0	0	0	0	0	0	14	37.1	32.8
6:00 AM	0	1	3	8	14	7	2	0	0	0	0	0	0	35	35.0	31.2
7:00 AM	0	0	3	10	25	20	6	0	0	0	0	0	0	64	38.6	33.2
8:00 AM	0	2	10	25	44	12	3	0	0	0	0	0	0	96	34.8	30.4
9:00 AM	1	3	16	24	40	7	2	0	0	0	0	0	0	93	34.0	29.1
10:00 AM	0	1	6	36	52	8	1	0	0	0	0	0	0	104	33.6	30.1
11:00 AM	3	1	5	13	33	3	1	1	0	0	0	0	0	60	33.0	29.3
12:00 PM	0	2	6	31	18	4	0	0	0	0	0	0	0	61	32.0	28.4
1:00 PM	0	3	11	51	65	10	3	0	0	0	0	0	0	143	33.0	29.8
2:00 PM	1	2	15	44	52	17	1	0	0	0	0	0	0	132	34.0	29.6
3:00 PM	1	0	8	41	75	15	1	0	0	0	0	0	0	141	34.0	30.2
4:00 PM	0	0	8	47	53	21	1	0	0	0	0	0	0	130	35.0	30.5
5:00 PM	0	1	9	46	41	6	2	0	0	0	0	0	0	105	33.0	29.5
6:00 PM	1	0	14	47	45	4	0	0	0	0	0	0	0	111	33.0	28.6
7:00 PM	0	0	8	29	17	6	0	0	0	0	0	0	0	60	32.2	28.9
8:00 PM	0	0	2	14	15	6	0	0	0	0	0	0	0	37	34.6	30.4
9:00 PM	1	2	1	12	16	9	2	0	0	0	0	0	0	43	36.0	30.7
10:00 PM	0	0	1	8	20	4	0	0	0	0	0	0	0	33	34.0	31.2
11:00 PM	0	0	0	4	7	3	0	0	0	0	0	0	0	14	37.0	32.3
Total	8	18	126	497	639	170	28	1	0	0	0	0	0	1487	34.0	30.0
Percent	0.54%	1.21%	8.47%	33.42%	42.97%	11.43%	1.88%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	9:00 AM	9:00 AM	10:00 AM	10:00 AM	7:00 AM	7:00 AM	11:00 AM						10:00 AM		
Volume	3	3	16	36	52	20	6	1	0	0	0	0	0	104		
PM Peak	2:00 PM	1:00 PM	2:00 PM	1:00 PM	3:00 PM	4:00 PM	1:00 PM							1:00 PM		
Volume	1	3	15	51	75	21	3	0	0	0	0	0	0	143		

15th Percentile:	26.0 MPH	Average Speed:	30.0 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	30.0 MPH	10 MPH Pace:	25 to 34 MPH	Number of Vehicles > 25 MPH:	1279
85th Percentile:	34.0 MPH	Number in Pace:	1136	Percent of Vehicles > 25 MPH:	86.0%
95th Percentile:	37.0 MPH	Percent in Pace:	76.4%		

Dedham Avenue (Route 135)
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Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Saturday, January 27, 2024

Speed (60-minute)

SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	1	4	7	9	0	1	0	0	0	0	0	22	36.0	33.6
1:00 AM	0	0	1	3	11	2	0	0	0	0	0	0	0	17	34.0	31.1
2:00 AM	0	1	0	3	4	2	2	0	0	0	0	0	0	12	38.7	32.4
3:00 AM	0	0	1	3	3	4	0	0	0	0	0	0	0	11	38.0	32.3
4:00 AM	1	0	0	0	2	1	0	0	0	0	0	0	0	4	34.8	27.5
5:00 AM	0	0	2	1	5	2	0	1	0	0	0	0	0	11	36.0	32.5
6:00 AM	0	1	2	10	13	5	2	0	0	0	0	0	0	33	36.0	31.0
7:00 AM	0	5	7	28	35	27	2	0	0	0	0	0	0	104	36.0	30.9
8:00 AM	3	6	10	39	72	27	3	0	0	0	0	0	0	160	35.0	30.1
9:00 AM	8	10	32	76	98	22	3	0	0	0	0	0	0	249	34.0	28.4
10:00 AM	12	22	57	83	93	18	0	0	0	0	0	0	0	285	33.0	27.0
11:00 AM	6	6	14	39	57	10	0	0	0	0	0	0	0	132	33.0	28.2
12:00 PM	3	19	18	43	44	20	1	0	0	0	0	0	0	148	34.0	27.7
1:00 PM	6	27	39	101	112	23	2	0	0	0	0	0	0	310	33.0	27.8
2:00 PM	4	24	49	112	122	22	2	0	0	0	0	0	0	335	33.0	27.9
3:00 PM	8	23	58	111	95	18	1	0	0	0	0	0	0	314	32.0	27.0
4:00 PM	10	14	41	102	92	18	1	0	0	0	0	0	0	278	33.0	27.5
5:00 PM	7	11	29	82	89	13	0	0	0	0	0	0	0	231	33.0	27.9
6:00 PM	3	19	22	86	75	15	2	0	0	0	0	0	0	222	32.9	27.8
7:00 PM	1	7	18	45	40	12	4	0	0	0	0	0	0	127	34.0	28.6
8:00 PM	0	4	17	45	38	14	2	0	0	0	0	0	0	120	34.0	29.2
9:00 PM	0	2	14	27	52	16	3	0	0	0	0	0	0	114	35.0	30.5
10:00 PM	0	0	1	17	39	21	3	0	0	0	0	0	0	81	37.0	32.3
11:00 PM	1	2	1	14	25	16	3	0	0	0	0	0	0	62	36.0	31.5
Total	73	203	434	1074	1223	337	36	2	0	0	0	0	0	3382	34.0	28.4
Percent	2.16%	6.00%	12.83%	31.76%	36.16%	9.96%	1.06%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	10:00 AM	10:00 AM	10:00 AM	9:00 AM	7:00 AM	8:00 AM	12:00 AM						10:00 AM		
Volume	12	22	57	83	98	27	3	1	0	0	0	0	0	285		
PM Peak	4:00 PM	1:00 PM	3:00 PM	2:00 PM	2:00 PM	1:00 PM	7:00 PM							2:00 PM		
Volume	10	27	58	112	122	23	4	0	0	0	0	0	0	335		

15th Percentile:	23.0 MPH	Average Speed:	28.4 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	29.0 MPH	10 MPH Pace:	25 to 34 MPH	Number of Vehicles > 25 MPH:	2547
85th Percentile:	34.0 MPH	Number in Pace:	2297	Percent of Vehicles > 25 MPH:	75.3%
95th Percentile:	36.0 MPH	Percent in Pace:	67.9%		

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Speed (60-minute)

Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	1	5	8	12	0	1	0	0	0	0	0	27	36.1	33.5
1:00 AM	0	0	1	3	11	2	1	0	0	0	0	0	0	18	34.5	31.6
2:00 AM	0	1	0	3	4	3	2	0	0	0	0	0	0	13	38.4	32.6
3:00 AM	0	0	1	4	3	4	1	0	0	0	0	0	0	13	39.0	32.8
4:00 AM	1	0	0	2	2	1	0	0	0	0	0	0	0	6	33.3	26.7
5:00 AM	0	0	2	4	11	6	1	1	0	0	0	0	0	25	37.0	32.6
6:00 AM	0	2	5	18	27	12	4	0	0	0	0	0	0	68	36.0	31.1
7:00 AM	0	5	10	38	60	47	8	0	0	0	0	0	0	168	37.0	31.8
8:00 AM	3	8	20	64	116	39	6	0	0	0	0	0	0	256	35.0	30.3
9:00 AM	9	13	48	100	138	29	5	0	0	0	0	0	0	342	34.0	28.6
10:00 AM	12	23	63	119	145	26	1	0	0	0	0	0	0	389	33.0	27.8
11:00 AM	9	7	19	52	90	13	1	1	0	0	0	0	0	192	33.0	28.5
12:00 PM	3	21	24	74	62	24	1	0	0	0	0	0	0	209	34.0	27.9
1:00 PM	6	30	50	152	177	33	5	0	0	0	0	0	0	453	33.0	28.4
2:00 PM	5	26	64	156	174	39	3	0	0	0	0	0	0	467	33.0	28.4
3:00 PM	9	23	66	152	170	33	2	0	0	0	0	0	0	455	33.0	28.0
4:00 PM	10	14	49	149	145	39	2	0	0	0	0	0	0	408	33.0	28.5
5:00 PM	7	12	38	128	130	19	2	0	0	0	0	0	0	336	33.0	28.4
6:00 PM	4	19	36	133	120	19	2	0	0	0	0	0	0	333	33.0	28.1
7:00 PM	1	7	26	74	57	18	4	0	0	0	0	0	0	187	33.1	28.7
8:00 PM	0	4	19	59	53	20	2	0	0	0	0	0	0	157	34.0	29.5
9:00 PM	1	4	15	39	68	25	5	0	0	0	0	0	0	157	35.0	30.5
10:00 PM	0	0	2	25	59	25	3	0	0	0	0	0	0	114	36.0	32.0
11:00 PM	1	2	1	18	32	19	3	0	0	0	0	0	0	76	36.8	31.6
Total	81	221	560	1571	1862	507	64	3	0	0	0	0	0	4869	34.0	28.9
Percent	1.66%	4.54%	11.50%	32.27%	38.24%	10.41%	1.31%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	10:00 AM	10:00 AM	10:00 AM	10:00 AM	7:00 AM	7:00 AM	12:00 AM						10:00 AM		
Volume	12	23	63	119	145	47	8	1	0	0	0	0	0	389		
PM Peak	4:00 PM	1:00 PM	3:00 PM	2:00 PM	1:00 PM	2:00 PM	1:00 PM							2:00 PM		
Volume	10	30	66	156	177	39	5	0	0	0	0	0	0	467		

15th Percentile:	24.0 MPH	Average Speed:	28.9 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	30.0 MPH	10 MPH Pace:	25 to 34 MPH	Number of Vehicles > 25 MPH:	3651
85th Percentile:	34.0 MPH	Number in Pace:	3433	Percent of Vehicles > 25 MPH:	75.0%
95th Percentile:	37.0 MPH	Percent in Pace:	70.5%		

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Sunday, January 28, 2024

Speed (60-minute)

NB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	1	5	4	0	0	0	0	0	0	0	10	37.0	33.5
1:00 AM	0	0	0	0	1	2	0	0	0	0	0	0	0	3	38.4	36.3
2:00 AM	0	0	0	0	2	1	0	0	0	0	0	0	0	3	34.8	33.0
3:00 AM	0	0	1	0	3	0	0	0	0	0	0	0	0	4	34.0	29.8
4:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	2	39.0	36.5
5:00 AM	0	0	0	0	8	3	0	1	0	0	0	0	0	12	39.0	35.1
6:00 AM	0	0	0	1	12	7	1	0	0	0	0	0	0	21	37.0	34.2
7:00 AM	0	1	0	6	11	10	2	0	0	0	0	0	0	30	38.7	33.1
8:00 AM	2	2	4	9	24	14	4	1	0	0	0	0	0	60	37.0	31.4
9:00 AM	0	1	1	18	36	23	0	0	0	0	0	0	0	79	36.0	32.1
10:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	30.0	30.0
11:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	26.0	26.0
12:00 PM	0	0	2	2	5	2	0	0	0	0	0	0	0	11	35.5	30.1
1:00 PM	0	0	4	17	36	16	2	0	0	0	0	0	0	75	36.0	31.7
2:00 PM	1	1	2	25	41	20	4	0	0	0	0	0	0	94	36.0	31.7
3:00 PM	0	1	3	13	15	3	0	0	0	0	0	0	0	35	32.9	29.3
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	42.0	42.0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
7:00 PM	0	0	1	0	3	2	0	0	0	0	0	0	0	6	35.3	31.8
8:00 PM	0	0	0	4	7	3	0	0	0	0	0	0	0	14	35.2	31.9
9:00 PM	0	0	0	1	2	2	0	0	0	0	0	0	0	5	35.8	32.4
10:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	31.1	29.0
11:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	26.0	26.0
Total	3	6	18	100	214	112	15	2	0	0	0	0	0	470	36.7	31.9
Percent	0.64%	1.28%	3.83%	21.28%	45.53%	23.83%	3.19%	0.43%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	8:00 AM	8:00 AM	9:00 AM	9:00 AM	9:00 AM	8:00 AM	5:00 AM						9:00 AM		
Volume	2	2	4	18	36	23	4	1	0	0	0	0	0	79		
PM Peak	2:00 PM	2:00 PM	1:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM							2:00 PM		
Volume	1	1	4	25	41	20	4	0	0	0	0	0	0	94		

15th Percentile:	27.4 MPH	Average Speed:	31.9 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	32.0 MPH	10 MPH Pace:	28 to 37 MPH	Number of Vehicles > 25 MPH:	438
85th Percentile:	36.7 MPH	Number in Pace:	351	Percent of Vehicles > 25 MPH:	93.2%
95th Percentile:	39.0 MPH	Percent in Pace:	74.7%		

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Sunday, January 28, 2024

Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	1	5	6	4	0	0	0	0	0	0	0	16	37.0	31.9
1:00 AM	0	0	0	4	1	2	1	0	0	0	0	0	0	8	38.0	32.3
2:00 AM	0	0	0	1	3	1	1	1	0	0	0	0	0	7	43.3	36.1
3:00 AM	0	0	0	1	2	0	0	0	0	0	0	0	0	3	30.7	28.7
4:00 AM	0	0	3	3	2	0	0	0	0	0	0	0	0	8	31.9	26.8
5:00 AM	0	0	0	0	2	1	0	0	0	0	0	0	0	3	34.4	33.3
6:00 AM	0	1	0	3	10	2	2	0	0	0	0	0	0	18	37.5	31.8
7:00 AM	2	1	2	6	26	19	5	0	0	0	0	0	0	61	37.0	32.5
8:00 AM	0	1	5	23	46	28	5	0	0	0	0	0	0	108	36.0	32.1
9:00 AM	0	1	4	25	61	21	4	0	0	0	0	0	0	116	35.0	31.6
10:00 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	3	27.7	27.0
11:00 AM	2	1	1	3	1	0	0	0	0	0	0	0	0	8	28.0	22.5
12:00 PM	3	4	4	10	16	5	0	0	0	0	0	0	0	42	34.0	27.7
1:00 PM	4	10	14	61	87	34	5	0	0	0	0	0	0	215	35.0	29.9
2:00 PM	5	9	34	63	77	30	4	0	0	0	0	0	0	222	34.9	28.8
3:00 PM	1	7	18	31	38	15	3	0	0	0	0	0	0	113	35.0	29.0
4:00 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	2	28.1	26.0
5:00 PM	2	5	0	1	0	0	0	0	0	0	0	0	0	8	18.0	17.3
6:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	2	29.8	27.0
7:00 PM	1	4	7	20	21	7	2	0	0	0	0	0	0	62	34.0	28.7
8:00 PM	0	2	7	28	40	10	0	0	0	0	0	0	0	87	34.0	29.7
9:00 PM	0	1	5	17	17	4	0	0	0	0	0	0	0	44	32.0	28.8
10:00 PM	0	3	11	13	9	2	0	0	0	0	0	0	0	38	32.5	27.0
11:00 PM	0	2	1	21	8	1	0	0	0	0	0	0	0	33	30.2	27.8
Total	20	52	119	343	474	186	32	1	0	0	0	0	0	1227	35.0	29.7
Percent	1.63%	4.24%	9.70%	27.95%	38.63%	15.16%	2.61%	0.08%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	7:00 AM	6:00 AM	8:00 AM	9:00 AM	9:00 AM	8:00 AM	7:00 AM	2:00 AM						9:00 AM		
Volume	2	1	5	25	61	28	5	1	0	0	0	0	0	116		
PM Peak	2:00 PM	1:00 PM	2:00 PM	2:00 PM	1:00 PM	1:00 PM	1:00 PM							2:00 PM		
Volume	5	10	34	63	87	34	5	0	0	0	0	0	0	222		

15th Percentile:	24.0 MPH	Average Speed:	29.7 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	30.0 MPH	10 MPH Pace:	26 to 35 MPH	Number of Vehicles > 25 MPH:	993
85th Percentile:	35.0 MPH	Number in Pace:	841	Percent of Vehicles > 25 MPH:	80.9%
95th Percentile:	38.0 MPH	Percent in Pace:	68.5%		

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Sunday, January 28, 2024

Speed (60-minute)

Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	1	6	11	8	0	0	0	0	0	0	0	26	37.0	32.5
1:00 AM	0	0	0	4	2	4	1	0	0	0	0	0	0	11	38.5	33.4
2:00 AM	0	0	0	1	5	2	1	1	0	0	0	0	0	10	41.3	35.2
3:00 AM	0	0	1	1	5	0	0	0	0	0	0	0	0	7	34.0	29.3
4:00 AM	0	0	3	3	3	0	1	0	0	0	0	0	0	10	33.7	28.7
5:00 AM	0	0	0	0	10	4	0	1	0	0	0	0	0	15	38.9	34.7
6:00 AM	0	1	0	4	22	9	3	0	0	0	0	0	0	39	37.0	33.1
7:00 AM	2	2	2	12	37	29	7	0	0	0	0	0	0	91	38.0	32.7
8:00 AM	2	3	9	32	70	42	9	1	0	0	0	0	0	168	37.0	31.8
9:00 AM	0	2	5	43	97	44	4	0	0	0	0	0	0	195	36.0	31.8
10:00 AM	0	0	0	3	1	0	0	0	0	0	0	0	0	4	29.1	27.8
11:00 AM	2	1	1	4	1	0	0	0	0	0	0	0	0	9	27.8	22.9
12:00 PM	3	4	6	12	21	7	0	0	0	0	0	0	0	53	34.0	28.2
1:00 PM	4	10	18	78	123	50	7	0	0	0	0	0	0	290	35.0	30.4
2:00 PM	6	10	36	88	118	50	8	0	0	0	0	0	0	316	35.0	29.6
3:00 PM	1	8	21	44	53	18	3	0	0	0	0	0	0	148	34.0	29.1
4:00 PM	0	0	1	1	0	0	1	0	0	0	0	0	0	3	38.1	31.3
5:00 PM	2	5	0	1	0	0	0	0	0	0	0	0	0	8	18.0	17.3
6:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	2	29.8	27.0
7:00 PM	1	4	8	20	24	9	2	0	0	0	0	0	0	68	35.0	29.0
8:00 PM	0	2	7	32	47	13	0	0	0	0	0	0	0	101	34.0	30.0
9:00 PM	0	1	5	18	19	6	0	0	0	0	0	0	0	49	32.8	29.2
10:00 PM	0	3	11	14	10	2	0	0	0	0	0	0	0	40	32.2	27.1
11:00 PM	0	2	1	22	8	1	0	0	0	0	0	0	0	34	30.1	27.8
Total	23	58	137	443	688	298	47	3	0	0	0	0	0	1697	35.0	30.3
Percent	1.36%	3.42%	8.07%	26.10%	40.54%	17.56%	2.77%	0.18%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	7:00 AM	8:00 AM	8:00 AM	9:00 AM	9:00 AM	9:00 AM	8:00 AM	2:00 AM						9:00 AM		
Volume	2	3	9	43	97	44	9	1	0	0	0	0	0	195		
PM Peak	2:00 PM	1:00 PM	2:00 PM	2:00 PM	1:00 PM	1:00 PM	2:00 PM							2:00 PM		
Volume	6	10	36	88	123	50	8	0	0	0	0	0	0	316		

15th Percentile:	25.0 MPH	Average Speed:	30.3 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	31.0 MPH	10 MPH Pace:	27 to 36 MPH	Number of Vehicles > 25 MPH:	3651
85th Percentile:	35.0 MPH	Number in Pace:	1180	Percent of Vehicles > 25 MPH:	215.1%
95th Percentile:	38.0 MPH	Percent in Pace:	69.5%		

Dedham Avenue (Route 135)
south of Lincoln Street
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Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Monday, January 29, 2024

Speed (60-minute)

NB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	2	27.2	23.0
1:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	2	35.7	32.5
2:00 AM	0	1	1	0	1	1	0	0	0	0	0	0	0	4	34.2	27.5
3:00 AM	0	0	0	4	4	0	0	0	0	0	0	0	0	8	31.0	28.9
4:00 AM	0	0	0	3	3	0	0	0	0	0	0	0	0	6	32.0	29.7
5:00 AM	0	0	1	8	22	4	4	0	0	0	0	0	0	39	35.0	31.9
6:00 AM	2	0	11	35	34	7	1	0	0	0	0	0	0	90	33.0	29.1
7:00 AM	6	12	30	83	40	7	1	0	0	0	0	0	0	179	32.0	26.6
8:00 AM	7	9	33	66	54	3	3	0	0	0	0	0	0	175	32.0	26.8
9:00 AM	0	3	5	8	18	0	1	0	0	0	0	0	0	35	32.0	28.5
10:00 AM	0	0	0	7	12	6	2	0	0	0	0	0	0	27	36.2	32.5
11:00 AM	0	1	8	14	22	6	0	0	0	0	0	0	0	51	33.5	29.3
12:00 PM	0	3	15	32	39	5	1	0	0	0	0	0	0	95	33.0	28.7
1:00 PM	0	0	1	16	17	8	0	0	0	0	0	0	0	42	35.0	30.5
2:00 PM	8	4	20	45	36	6	0	0	0	0	0	0	0	119	33.0	27.0
3:00 PM	6	3	11	40	55	9	0	0	0	0	0	0	0	124	33.0	28.3
4:00 PM	1	1	7	39	54	8	1	0	0	0	0	0	0	111	33.0	29.8
5:00 PM	1	3	23	52	39	3	1	0	0	0	0	0	0	122	32.0	27.7
6:00 PM	1	0	7	35	39	3	0	0	0	0	0	0	0	85	33.0	29.0
7:00 PM	0	0	9	24	40	13	1	0	0	0	0	0	0	87	35.0	30.4
8:00 PM	0	1	2	10	17	5	0	0	0	0	0	0	0	35	34.0	30.5
9:00 PM	0	0	2	5	12	7	2	0	0	0	0	0	0	28	36.9	32.1
10:00 PM	0	0	0	1	4	3	1	0	0	0	0	0	0	9	37.6	33.3
11:00 PM	0	0	1	1	1	3	0	0	0	0	0	0	0	6	38.0	32.8
Total	32	42	187	530	563	108	19	0	0	0	0	0	0	1481	33.0	28.6
Percent	2.16%	2.84%	12.63%	35.79%	38.01%	7.29%	1.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	7:00 AM	8:00 AM	7:00 AM	8:00 AM	6:00 AM	5:00 AM							7:00 AM		
Volume	7	12	33	83	54	7	4	0	0	0	0	0	0	179		
PM Peak	2:00 PM	2:00 PM	5:00 PM	5:00 PM	3:00 PM	7:00 PM	9:00 PM							3:00 PM		
Volume	8	4	23	52	55	13	2	0	0	0	0	0	0	124		

15th Percentile:	24.0 MPH	Average Speed:	28.6 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	29.0 MPH	10 MPH Pace:	24 to 33 MPH	Number of Vehicles > 25 MPH:	1146
85th Percentile:	33.0 MPH	Number in Pace:	1111	Percent of Vehicles > 25 MPH:	77.4%
95th Percentile:	36.0 MPH	Percent in Pace:	75.0%		

Dedham Avenue (Route 135)
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Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Monday, January 29, 2024

Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	1	2	7	4	1	0	0	0	0	0	0	0	15	31.0	27.1
1:00 AM	0	0	0	4	2	2	0	0	0	0	0	0	0	8	34.8	29.4
2:00 AM	0	0	0	3	3	0	0	0	0	0	0	0	0	6	31.5	29.7
3:00 AM	1	2	3	3	1	0	0	0	0	0	0	0	0	10	26.7	21.6
4:00 AM	0	1	3	1	6	1	1	0	0	0	0	0	0	13	34.2	29.2
5:00 AM	0	0	5	8	11	4	0	0	0	0	0	0	0	28	34.0	29.5
6:00 AM	0	2	9	30	36	9	2	0	0	0	0	0	0	88	34.0	29.4
7:00 AM	14	36	38	95	104	16	2	0	0	0	0	0	0	305	33.0	26.9
8:00 AM	14	25	46	85	67	11	3	0	0	0	0	0	0	251	32.0	26.2
9:00 AM	8	12	13	20	19	6	0	0	0	0	0	0	0	78	32.0	25.1
10:00 AM	13	23	31	52	78	11	3	0	0	0	0	0	0	211	33.0	26.8
11:00 AM	5	11	28	77	93	20	3	0	0	0	0	0	0	237	33.0	28.7
12:00 PM	8	22	32	56	59	17	2	0	0	0	0	0	0	196	33.0	27.0
1:00 PM	10	40	34	75	49	12	3	0	0	0	0	0	0	223	32.0	25.5
2:00 PM	21	27	39	118	112	21	3	0	0	0	0	0	0	341	33.0	27.0
3:00 PM	29	20	41	127	90	12	2	0	0	2	0	0	0	323	32.0	26.5
4:00 PM	5	17	62	105	117	35	2	0	0	0	1	0	0	344	34.0	28.2
5:00 PM	16	27	63	136	92	14	0	0	0	0	0	0	0	348	32.0	26.2
6:00 PM	0	11	40	91	103	11	2	0	1	0	0	0	0	259	32.0	28.4
7:00 PM	2	8	22	51	66	16	0	0	0	0	0	0	0	165	33.0	28.5
8:00 PM	1	6	12	53	47	19	2	0	0	0	0	0	0	140	34.2	29.4
9:00 PM	0	0	5	16	43	12	1	0	0	0	0	0	0	77	35.0	31.1
10:00 PM	0	0	2	8	12	7	1	0	0	0	0	0	0	30	37.0	32.0
11:00 PM	0	0	0	5	14	18	2	1	0	0	0	0	0	40	37.0	34.2
Total	147	291	530	1226	1228	275	34	1	1	2	1	0	0	3736	33.0	27.4
Percent	3.93%	7.79%	14.19%	32.82%	32.87%	7.36%	0.91%	0.03%	0.03%	0.05%	0.03%	0.00%	0.00%			
AM Peak	7:00 AM	7:00 AM	8:00 AM	7:00 AM	7:00 AM	11:00 AM	8:00 AM							7:00 AM		
Volume	14	36	46	95	104	20	3	0	0	0	0	0	0	305		
PM Peak	3:00 PM	1:00 PM	5:00 PM	5:00 PM	4:00 PM	4:00 PM	1:00 PM	11:00 PM	6:00 PM	3:00 PM	4:00 PM			5:00 PM		
Volume	29	40	63	136	117	35	3	1	1	2	1	0	0	348		

15th Percentile:	21.0 MPH	Average Speed:	27.4 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	28.0 MPH	10 MPH Pace:	25 to 34 MPH	Number of Vehicles > 25 MPH:	2574
85th Percentile:	33.0 MPH	Number in Pace:	2454	Percent of Vehicles > 25 MPH:	68.9%
95th Percentile:	36.0 MPH	Percent in Pace:	65.7%		

Dedham Avenue (Route 135)
south of Lincoln Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-A (Speed)

Count Date
Monday, January 29, 2024

Speed (60-minute)

Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	2	2	8	4	1	0	0	0	0	0	0	0	17	31.0	26.6
1:00 AM	0	0	0	5	2	3	0	0	0	0	0	0	0	10	35.0	30.0
2:00 AM	0	1	1	3	4	1	0	0	0	0	0	0	0	10	32.7	28.8
3:00 AM	1	2	3	7	5	0	0	0	0	0	0	0	0	18	31.0	24.8
4:00 AM	0	1	3	4	9	1	1	0	0	0	0	0	0	19	33.3	29.3
5:00 AM	0	0	6	16	33	8	4	0	0	0	0	0	0	67	35.0	30.9
6:00 AM	2	2	20	65	70	16	3	0	0	0	0	0	0	178	34.0	29.3
7:00 AM	20	48	68	178	144	23	3	0	0	0	0	0	0	484	32.0	26.8
8:00 AM	21	34	79	151	121	14	6	0	0	0	0	0	0	426	32.0	26.4
9:00 AM	8	15	18	28	37	6	1	0	0	0	0	0	0	113	32.0	26.2
10:00 AM	13	23	31	59	90	17	5	0	0	0	0	0	0	238	33.0	27.5
11:00 AM	5	12	36	91	115	26	3	0	0	0	0	0	0	288	33.0	28.8
12:00 PM	8	25	47	88	98	22	3	0	0	0	0	0	0	291	33.0	27.5
1:00 PM	10	40	35	91	66	20	3	0	0	0	0	0	0	265	32.4	26.3
2:00 PM	29	31	59	163	148	27	3	0	0	0	0	0	0	460	33.0	27.0
3:00 PM	35	23	52	167	145	21	2	0	0	2	0	0	0	447	32.0	27.0
4:00 PM	6	18	69	144	171	43	3	0	0	0	1	0	0	455	33.9	28.6
5:00 PM	17	30	86	188	131	17	1	0	0	0	0	0	0	470	32.0	26.6
6:00 PM	1	11	47	126	142	14	2	0	1	0	0	0	0	344	33.0	28.5
7:00 PM	2	8	31	75	106	29	1	0	0	0	0	0	0	252	34.0	29.2
8:00 PM	1	7	14	63	64	24	2	0	0	0	0	0	0	175	34.0	29.6
9:00 PM	0	0	7	21	55	19	3	0	0	0	0	0	0	105	35.0	31.3
10:00 PM	0	0	2	9	16	10	2	0	0	0	0	0	0	39	37.3	32.3
11:00 PM	0	0	1	6	15	21	2	1	0	0	0	0	0	46	37.3	34.0
Total	179	333	717	1756	1791	383	53	1	1	2	1	0	0	5217	33.0	27.7
Percent	3.43%	6.38%	13.74%	33.66%	34.33%	7.34%	1.02%	0.02%	0.02%	0.04%	0.02%	0.00%	0.00%			
AM Peak	8:00 AM	7:00 AM	8:00 AM	7:00 AM	7:00 AM	11:00 AM	8:00 AM							7:00 AM		
Volume	21	48	79	178	144	26	6	0	0	0	0	0	0	484		
PM Peak	3:00 PM	1:00 PM	5:00 PM	5:00 PM	4:00 PM	4:00 PM	12:00 PM	11:00 PM	6:00 PM	3:00 PM	4:00 PM			5:00 PM		
Volume	35	40	86	188	171	43	3	1	1	2	1	0	0	470		

15th Percentile:	22.0 MPH	Average Speed:	27.7 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	29.0 MPH	10 MPH Pace:	24 to 33 MPH	Number of Vehicles > 25 MPH:	3651
85th Percentile:	33.0 MPH	Number in Pace:	3562	Percent of Vehicles > 25 MPH:	70.0%
95th Percentile:	36.0 MPH	Percent in Pace:	68.3%		

Great Plain Avenue (Route 135)
east of Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Tuesday, January 23, 2024

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	2	1	1	0	0	0	0	0	0	0	0	4	29.4	25.8
1:00 AM	1	2	4	1	0	0	0	0	0	0	0	0	0	8	24.0	20.5
2:00 AM	1	1	2	0	0	0	0	0	0	0	0	0	0	4	22.0	19.3
3:00 AM	2	2	0	2	0	0	0	0	0	0	0	0	0	6	25.5	16.8
4:00 AM	0	0	2	3	0	0	0	0	0	0	0	0	0	5	25.8	23.8
5:00 AM	8	10	16	11	0	0	0	0	0	0	0	0	0	45	27.0	20.3
6:00 AM	18	15	38	18	2	0	0	0	0	0	0	0	0	91	26.0	19.9
7:00 AM	24	28	41	37	18	3	1	0	0	0	0	0	0	152	29.0	21.9
8:00 AM	25	33	41	36	13	1	0	0	0	0	0	0	0	149	28.0	21.1
9:00 AM	20	20	34	29	7	2	0	0	0	0	0	0	0	112	27.0	21.1
10:00 AM	16	16	38	12	0	0	0	0	0	0	0	0	0	82	24.0	19.3
11:00 AM	29	27	35	19	2	1	0	0	0	0	0	0	0	113	25.0	18.6
12:00 PM	21	15	25	13	3	0	0	0	0	0	0	0	0	77	26.0	18.7
1:00 PM	6	11	15	14	4	0	0	0	0	0	0	0	0	50	27.7	21.4
2:00 PM	22	28	46	15	1	0	0	0	0	0	0	0	0	112	24.0	19.0
3:00 PM	4	22	45	11	2	0	0	0	0	0	0	0	0	84	24.6	20.5
4:00 PM	14	20	32	14	0	0	0	0	0	0	0	0	0	80	25.0	19.3
5:00 PM	18	26	50	29	0	0	0	0	0	0	0	0	0	123	26.0	20.0
6:00 PM	5	12	24	2	2	0	0	0	0	0	0	0	0	45	24.0	20.1
7:00 PM	12	14	36	13	2	1	0	0	0	0	0	0	0	78	25.5	20.7
8:00 PM	1	13	22	13	0	0	0	0	0	0	0	0	0	49	25.0	21.7
9:00 PM	11	14	12	6	1	0	0	0	0	0	0	0	0	44	24.6	18.5
10:00 PM	5	3	5	2	0	1	0	0	0	0	0	0	0	16	26.0	19.2
11:00 PM	0	5	5	1	0	0	0	0	0	0	0	0	0	11	22.5	20.3
Total	263	337	570	302	58	9	1	0	0	0	0	0	0	1540	26.0	20.2
Percent	17.08%	21.88%	37.01%	19.61%	3.77%	0.58%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	8:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM							7:00 AM		
Volume	29	33	41	37	18	3	1	0	0	0	0	0	0	152		
PM Peak	2:00 PM	2:00 PM	5:00 PM	5:00 PM	1:00 PM	7:00 PM								5:00 PM		
Volume	22	28	50	29	4	1	0	0	0	0	0	0	0	123		

15th Percentile:	14.0 MPH	Average Speed:	20.2 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	269
85th Percentile:	26.0 MPH	Number in Pace:	961	Percent of Vehicles > 25 MPH:	17.5%
95th Percentile:	29.0 MPH	Percent in Pace:	62.4%		

Great Plain Avenue (Route 135)
east of Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Tuesday, January 23, 2024

Speed (60-minute)

EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	2	6	2	0	0	0	0	0	0	0	0	0	10	26.0	22.9
1:00 AM	0	1	3	4	1	1	1	0	0	0	0	0	0	11	35.5	28.3
2:00 AM	0	1	1	1	0	0	0	0	0	0	0	0	0	3	24.4	22.3
3:00 AM	0	1	3	2	0	2	0	0	0	0	0	0	0	8	34.7	26.9
4:00 AM	1	3	12	2	2	0	0	1	0	0	0	0	0	21	28.0	23.4
5:00 AM	1	4	15	17	7	0	0	0	0	0	0	0	0	44	29.1	24.5
6:00 AM	2	20	52	29	9	2	0	0	0	0	0	0	0	114	28.0	23.3
7:00 AM	10	41	138	127	52	24	1	0	1	0	0	0	0	394	31.0	25.3
8:00 AM	12	52	123	66	25	11	0	1	0	1	0	0	0	291	28.0	23.4
9:00 AM	8	69	105	43	6	0	0	0	0	0	0	0	0	231	26.0	21.3
10:00 AM	24	82	118	28	20	4	0	1	0	0	0	0	0	277	25.6	21.2
11:00 AM	18	82	126	39	12	3	1	0	0	0	0	0	0	281	25.0	21.1
12:00 PM	17	57	117	13	3	3	0	0	0	0	0	0	0	210	24.0	20.5
1:00 PM	13	69	150	37	16	0	0	0	0	0	0	0	0	285	25.0	21.5
2:00 PM	23	83	127	28	16	5	1	1	0	0	0	0	0	284	26.0	21.1
3:00 PM	11	42	105	26	4	1	0	0	0	0	0	0	0	189	25.0	21.1
4:00 PM	5	47	115	29	2	0	0	0	0	0	0	0	0	198	25.0	21.6
5:00 PM	11	65	120	44	10	1	1	0	0	0	0	0	0	252	26.0	21.8
6:00 PM	9	73	118	31	16	1	1	0	0	0	0	0	0	249	25.0	21.5
7:00 PM	15	39	72	40	6	0	0	0	0	0	0	0	0	172	26.0	21.3
8:00 PM	9	16	48	33	8	3	0	0	0	0	0	0	0	117	27.0	22.6
9:00 PM	6	19	62	28	12	1	1	0	0	0	0	0	0	129	28.0	23.2
10:00 PM	0	9	21	27	7	1	0	0	0	0	0	0	0	65	28.4	24.5
11:00 PM	1	3	23	15	4	2	1	0	0	0	0	0	0	49	29.0	24.8
Total	196	880	1780	711	238	65	8	4	1	1	0	0	0	3884	27.0	22.2
Percent	5.05%	22.66%	45.83%	18.31%	6.13%	1.67%	0.21%	0.10%	0.03%	0.03%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	10:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	1:00 AM	4:00 AM	7:00 AM	8:00 AM				7:00 AM		
Volume	24	82	138	127	52	24	1	1	1	1	0	0	0	394		
PM Peak	2:00 PM	2:00 PM	1:00 PM	5:00 PM	1:00 PM	2:00 PM	2:00 PM	2:00 PM						1:00 PM		
Volume	23	83	150	44	16	5	1	1	0	0	0	0	0	285		

15th Percentile:	18.0 MPH	Average Speed:	22.2 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	782
85th Percentile:	27.0 MPH	Number in Pace:	2866	Percent of Vehicles > 25 MPH:	20.1%
95th Percentile:	32.0 MPH	Percent in Pace:	73.8%		

Great Plain Avenue (Route 135)
east of Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Tuesday, January 23, 2024

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	2	8	3	1	0	0	0	0	0	0	0	0	14	27.0	23.7
1:00 AM	1	3	7	5	1	1	1	0	0	0	0	0	0	19	29.2	25.0
2:00 AM	1	2	3	1	0	0	0	0	0	0	0	0	0	7	23.2	20.6
3:00 AM	2	3	3	4	0	2	0	0	0	0	0	0	0	14	29.3	22.6
4:00 AM	1	3	14	5	2	0	0	1	0	0	0	0	0	26	27.3	23.5
5:00 AM	9	14	31	28	7	0	0	0	0	0	0	0	0	89	28.0	22.4
6:00 AM	20	35	90	47	11	2	0	0	0	0	0	0	0	205	26.0	21.8
7:00 AM	34	69	179	164	70	27	2	0	1	0	0	0	0	546	31.0	24.3
8:00 AM	37	85	164	102	38	12	0	1	0	1	0	0	0	440	28.0	22.6
9:00 AM	28	89	139	72	13	2	0	0	0	0	0	0	0	343	26.0	21.2
10:00 AM	40	98	156	40	20	4	0	1	0	0	0	0	0	359	25.0	20.7
11:00 AM	47	109	161	58	14	4	1	0	0	0	0	0	0	394	25.0	20.4
12:00 PM	38	72	142	26	6	3	0	0	0	0	0	0	0	287	24.0	20.0
1:00 PM	19	80	165	51	20	0	0	0	0	0	0	0	0	335	26.0	21.5
2:00 PM	45	111	173	43	17	5	1	1	0	0	0	0	0	396	25.0	20.5
3:00 PM	15	64	150	37	6	1	0	0	0	0	0	0	0	273	25.0	20.9
4:00 PM	19	67	147	43	2	0	0	0	0	0	0	0	0	278	25.0	20.9
5:00 PM	29	91	170	73	10	1	1	0	0	0	0	0	0	375	26.0	21.2
6:00 PM	14	85	142	33	18	1	1	0	0	0	0	0	0	294	25.0	21.3
7:00 PM	27	53	108	53	8	1	0	0	0	0	0	0	0	250	26.0	21.1
8:00 PM	10	29	70	46	8	3	0	0	0	0	0	0	0	166	26.3	22.4
9:00 PM	17	33	74	34	13	1	1	0	0	0	0	0	0	173	28.0	22.0
10:00 PM	5	12	26	29	7	2	0	0	0	0	0	0	0	81	28.0	23.5
11:00 PM	1	8	28	16	4	2	1	0	0	0	0	0	0	60	29.0	24.0
Total	459	1217	2350	1013	296	74	9	4	1	1	0	0	0	5424	26.0	21.6
Percent	8.46%	22.44%	43.33%	18.68%	5.46%	1.36%	0.17%	0.07%	0.02%	0.02%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	11:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	4:00 AM	7:00 AM	8:00 AM				7:00 AM		
Volume	47	109	179	164	70	27	2	1	1	1	0	0	0	546		
PM Peak	2:00 PM	2:00 PM	2:00 PM	5:00 PM	1:00 PM	2:00 PM	2:00 PM	2:00 PM						2:00 PM		
Volume	45	111	173	73	20	5	1	1	0	0	0	0	0	396		

15th Percentile:	17.0 MPH	Average Speed:	21.6 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	1051
85th Percentile:	26.0 MPH	Number in Pace:	3827	Percent of Vehicles > 25 MPH:	19.4%
95th Percentile:	31.0 MPH	Percent in Pace:	70.6%		

Great Plain Avenue (Route 135)
east of Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Wednesday, January 24, 2024

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	3	2	1	1	0	0	0	0	0	0	0	0	0	7	20.6	16.9
1:00 AM	4	1	2	0	0	0	0	0	0	0	0	0	0	7	20.1	13.1
2:00 AM	3	3	0	1	0	0	0	0	0	0	0	0	0	7	18.8	14.0
3:00 AM	3	5	0	0	0	0	0	0	0	0	0	0	0	8	19.0	14.3
4:00 AM	2	5	1	2	0	0	0	0	0	0	0	0	0	10	25.6	17.9
5:00 AM	11	12	19	5	3	0	0	0	0	0	0	0	0	50	24.7	19.8
6:00 AM	22	22	23	7	0	1	0	0	0	0	0	0	0	75	23.0	17.9
7:00 AM	23	25	35	33	7	1	0	0	0	0	0	0	0	124	27.0	20.6
8:00 AM	10	32	58	31	7	1	0	0	0	0	0	0	0	139	26.0	21.6
9:00 AM	18	28	30	20	2	1	0	0	0	0	0	0	0	99	26.0	19.6
10:00 AM	13	12	22	18	2	1	0	0	0	0	0	0	0	68	27.0	20.7
11:00 AM	44	29	36	17	8	0	0	0	0	0	0	0	0	134	26.0	17.8
12:00 PM	26	25	36	14	3	0	0	0	0	0	0	0	0	104	25.0	18.8
1:00 PM	14	22	23	15	4	0	0	0	0	0	0	0	0	78	26.0	19.5
2:00 PM	17	23	45	23	3	0	0	0	0	0	0	0	0	111	25.5	20.1
3:00 PM	4	16	32	20	1	0	0	0	0	0	0	0	0	73	26.0	21.6
4:00 PM	12	17	30	14	1	0	0	0	0	0	0	0	0	74	25.0	19.6
5:00 PM	2	14	28	9	1	0	0	0	0	0	0	0	0	54	25.0	21.6
6:00 PM	8	13	14	4	1	0	0	0	0	0	0	0	0	40	24.0	18.5
7:00 PM	5	9	16	4	0	1	0	0	0	0	0	0	0	35	24.0	19.7
8:00 PM	0	6	9	6	2	1	0	0	0	0	0	0	0	24	28.6	23.1
9:00 PM	14	4	8	4	1	0	0	0	0	0	0	0	0	31	24.5	16.1
10:00 PM	0	1	1	2	0	0	1	0	0	0	0	0	0	5	33.4	27.4
11:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	2	24.7	21.5
Total	258	327	469	251	46	7	1	0	0	0	0	0	0	1359	26.0	19.7
Percent	18.98%	24.06%	34.51%	18.47%	3.38%	0.52%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	8:00 AM	8:00 AM	7:00 AM	11:00 AM	6:00 AM								8:00 AM		
Volume	44	32	58	33	8	1	0	0	0	0	0	0	0	139		
PM Peak	12:00 PM	12:00 PM	2:00 PM	2:00 PM	1:00 PM	7:00 PM	10:00 PM							2:00 PM		
Volume	26	25	45	23	4	1	1	0	0	0	0	0	0	111		

15th Percentile:	13.0 MPH	Average Speed:	19.7 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	217
85th Percentile:	26.0 MPH	Number in Pace:	826	Percent of Vehicles > 25 MPH:	16.0%
95th Percentile:	29.0 MPH	Percent in Pace:	60.8%		

Great Plain Avenue (Route 135)
east of Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Wednesday, January 24, 2024

Speed (60-minute)

EB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	6	12	7	0	0	1	0	0	0	0	0	0	27	26.1	22.5
1:00 AM	1	5	11	2	2	0	1	0	0	0	0	0	0	22	27.6	23.5
2:00 AM	0	5	2	5	1	0	0	0	0	0	0	0	0	13	25.0	21.5
3:00 AM	0	8	9	2	2	0	0	0	0	0	0	0	0	21	25.0	21.6
4:00 AM	2	4	11	1	1	0	0	0	0	0	0	0	0	19	24.0	21.1
5:00 AM	9	12	32	5	4	0	1	0	0	0	0	0	0	63	25.4	21.0
6:00 AM	12	24	53	28	5	3	0	0	0	0	0	0	0	125	26.0	21.8
7:00 AM	10	52	163	100	72	6	0	2	1	0	0	0	0	406	31.0	24.5
8:00 AM	27	55	157	61	26	11	1	0	0	0	0	0	0	338	28.0	22.3
9:00 AM	9	58	111	42	2	1	0	0	0	0	0	0	0	223	25.0	21.3
10:00 AM	8	43	117	30	2	0	1	0	0	0	0	0	0	201	25.0	21.2
11:00 AM	10	63	101	29	5	3	1	0	0	0	0	0	0	212	25.0	21.2
12:00 PM	6	52	106	34	3	0	1	0	0	0	0	0	0	202	25.0	21.5
1:00 PM	14	44	123	27	5	1	1	0	0	0	0	0	0	215	25.0	21.3
2:00 PM	6	47	111	23	2	0	0	0	0	0	0	0	0	189	24.0	21.2
3:00 PM	17	45	99	43	4	0	1	0	0	0	0	0	0	209	25.0	21.2
4:00 PM	16	52	142	48	7	1	0	0	0	0	0	0	0	266	25.0	21.4
5:00 PM	19	73	121	32	3	0	0	0	0	0	0	0	0	248	24.0	20.6
6:00 PM	11	61	92	30	0	0	0	1	0	0	0	0	0	195	25.0	20.7
7:00 PM	14	41	81	28	8	0	1	0	0	0	0	0	0	173	26.0	21.5
8:00 PM	3	20	62	34	17	3	0	0	0	0	0	0	0	139	28.0	23.9
9:00 PM	3	24	55	32	9	7	0	0	0	0	0	0	0	130	28.0	23.5
10:00 PM	0	6	38	27	9	0	0	0	0	0	0	0	0	80	29.0	24.6
11:00 PM	2	8	25	21	10	0	0	0	0	0	0	0	0	66	29.3	24.0
Total	200	808	1834	691	199	36	10	3	1	0	0	0	0	3782	26.0	22.0
Percent	5.29%	21.36%	48.49%	18.27%	5.26%	0.95%	0.26%	0.08%	0.03%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	11:00 AM	7:00 AM	7:00 AM	7:00 AM	8:00 AM	12:00 AM	7:00 AM	7:00 AM					7:00 AM		
Volume	27	63	163	100	72	11	1	2	1	0	0	0	0	406		
PM Peak	5:00 PM	5:00 PM	4:00 PM	4:00 PM	8:00 PM	9:00 PM	12:00 PM	6:00 PM						4:00 PM		
Volume	19	73	142	48	17	7	1	1	0	0	0	0	0	266		

15th Percentile:	17.0 MPH	Average Speed:	22.0 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	712
85th Percentile:	26.0 MPH	Number in Pace:	2857	Percent of Vehicles > 25 MPH:	18.8%
95th Percentile:	31.0 MPH	Percent in Pace:	75.5%		

Great Plain Avenue (Route 135)
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Site Code: TBA

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157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Wednesday, January 24, 2024

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	4	8	13	8	0	0	1	0	0	0	0	0	0	34	26.0	21.3
1:00 AM	5	6	13	2	2	0	1	0	0	0	0	0	0	29	24.8	21.0
2:00 AM	3	8	2	6	1	0	0	0	0	0	0	0	0	20	25.0	18.9
3:00 AM	3	13	9	2	2	0	0	0	0	0	0	0	0	29	23.8	19.6
4:00 AM	4	9	12	3	1	0	0	0	0	0	0	0	0	29	24.0	20.0
5:00 AM	20	24	51	10	7	0	1	0	0	0	0	0	0	113	25.2	20.5
6:00 AM	34	46	76	35	5	4	0	0	0	0	0	0	0	200	25.2	20.3
7:00 AM	33	77	198	133	79	7	0	2	1	0	0	0	0	530	30.0	23.6
8:00 AM	37	87	215	92	33	12	1	0	0	0	0	0	0	477	27.0	22.1
9:00 AM	27	86	141	62	4	2	0	0	0	0	0	0	0	322	25.0	20.8
10:00 AM	21	55	139	48	4	1	1	0	0	0	0	0	0	269	25.0	21.1
11:00 AM	54	92	137	46	13	3	1	0	0	0	0	0	0	346	25.0	19.9
12:00 PM	32	77	142	48	6	0	1	0	0	0	0	0	0	306	25.0	20.6
1:00 PM	28	66	146	42	9	1	1	0	0	0	0	0	0	293	25.0	20.8
2:00 PM	23	70	156	46	5	0	0	0	0	0	0	0	0	300	25.0	20.8
3:00 PM	21	61	131	63	5	0	1	0	0	0	0	0	0	282	26.0	21.3
4:00 PM	28	69	172	62	8	1	0	0	0	0	0	0	0	340	25.0	21.1
5:00 PM	21	87	149	41	4	0	0	0	0	0	0	0	0	302	24.0	20.8
6:00 PM	19	74	106	34	1	0	0	1	0	0	0	0	0	235	24.9	20.3
7:00 PM	19	50	97	32	8	1	1	0	0	0	0	0	0	208	26.0	21.2
8:00 PM	3	26	71	40	19	4	0	0	0	0	0	0	0	163	28.0	23.8
9:00 PM	17	28	63	36	10	7	0	0	0	0	0	0	0	161	27.0	22.1
10:00 PM	0	7	39	29	9	0	1	0	0	0	0	0	0	85	29.0	24.8
11:00 PM	2	9	25	22	10	0	0	0	0	0	0	0	0	68	29.0	23.9
Total	458	1135	2303	942	245	43	11	3	1	0	0	0	0	5141	26.0	21.4
Percent	8.91%	22.08%	44.80%	18.32%	4.77%	0.84%	0.21%	0.06%	0.02%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	11:00 AM	8:00 AM	7:00 AM	7:00 AM	8:00 AM	12:00 AM	7:00 AM	7:00 AM					7:00 AM		
Volume	54	92	215	133	79	12	1	2	1	0	0	0	0	530		
PM Peak	12:00 PM	5:00 PM	4:00 PM	3:00 PM	8:00 PM	9:00 PM	12:00 PM	6:00 PM						4:00 PM		
Volume	32	87	172	63	19	7	1	1	0	0	0	0	0	340		

15th Percentile:	16.0 MPH	Average Speed:	21.4 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	929
85th Percentile:	26.0 MPH	Number in Pace:	3679	Percent of Vehicles > 25 MPH:	18.1%
95th Percentile:	30.0 MPH	Percent in Pace:	71.6%		

Great Plain Avenue (Route 135)
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Site Code: TBA

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Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Thursday, January 25, 2024

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
1:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21.0	21.0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
3:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	14.0	14.0
4:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	2	26.3	24.5
5:00 AM	0	2	6	1	0	0	0	0	0	0	0	0	0	9	23.8	21.6
6:00 AM	2	1	4	1	1	2	0	0	0	0	0	0	0	11	34.0	23.5
7:00 AM	20	14	13	8	3	0	0	0	0	0	0	0	0	58	26.0	17.4
8:00 AM	14	7	14	7	2	0	0	0	0	0	0	0	0	44	26.0	17.9
9:00 AM	14	11	24	10	2	1	0	0	0	0	0	0	0	62	25.9	19.5
10:00 AM	10	13	24	7	0	0	0	0	0	0	0	0	0	54	24.0	19.5
11:00 AM	13	9	11	7	2	0	0	0	0	0	0	0	0	42	25.0	18.0
12:00 PM	20	19	16	11	0	0	0	0	0	0	0	0	0	66	25.3	17.1
1:00 PM	9	28	33	16	5	0	0	0	0	0	0	0	0	91	25.0	20.7
2:00 PM	17	9	11	0	0	0	0	0	0	0	0	0	0	37	21.0	13.8
3:00 PM	14	12	4	0	0	0	0	0	0	0	0	0	0	30	19.0	14.3
4:00 PM	13	17	9	2	0	0	0	0	0	0	0	0	0	41	21.0	16.0
5:00 PM	18	30	31	12	3	0	0	0	0	0	0	0	0	94	25.0	18.8
6:00 PM	12	20	34	22	0	0	0	0	0	0	0	0	0	88	25.0	20.4
7:00 PM	25	17	28	16	3	0	0	0	0	0	0	0	0	89	26.0	18.6
8:00 PM	20	16	27	27	3	0	0	0	0	0	0	0	0	93	27.0	20.1
9:00 PM	12	15	25	7	5	0	0	0	0	0	0	0	0	64	26.6	20.1
10:00 PM	6	6	15	6	0	0	0	0	0	0	0	0	0	33	25.0	19.4
11:00 PM	2	4	4	4	0	0	0	0	0	0	0	0	0	14	27.1	21.1
Total	242	250	335	165	29	3	0	0	0	0	0	0	0	1024	25.0	18.8
Percent	23.63%	24.41%	32.71%	16.11%	2.83%	0.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	7:00 AM	7:00 AM	9:00 AM	9:00 AM	7:00 AM	6:00 AM								9:00 AM		
Volume	20	14	24	10	3	2	0	0	0	0	0	0	0	62		
PM Peak	7:00 PM	5:00 PM	6:00 PM	8:00 PM	1:00 PM									5:00 PM		
Volume	25	30	34	27	5	0	0	0	0	0	0	0	0	94		

15th Percentile:	11.0 MPH	Average Speed:	18.8 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	20.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	144
85th Percentile:	25.0 MPH	Number in Pace:	588	Percent of Vehicles > 25 MPH:	14.1%
95th Percentile:	28.0 MPH	Percent in Pace:	57.4%		

Great Plain Avenue (Route 135)
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Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Thursday, January 25, 2024

Speed (60-minute)

EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	1	10	6	3	0	0	0	0	0	0	0	0	21	29.0	24.2
1:00 AM	0	2	4	3	0	1	0	0	0	0	0	0	0	10	27.7	23.4
2:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	2	23.7	23.0
3:00 AM	0	1	7	1	0	0	0	0	0	0	0	0	0	9	23.0	21.4
4:00 AM	1	2	8	1	3	1	0	0	0	0	0	0	0	16	31.8	23.8
5:00 AM	1	12	18	8	6	0	1	0	0	0	0	0	0	46	29.3	23.3
6:00 AM	5	17	58	35	10	5	0	0	0	0	0	0	0	130	28.0	23.7
7:00 AM	14	35	158	93	60	6	2	0	0	0	0	0	0	368	31.0	24.3
8:00 AM	16	81	178	62	10	2	2	0	1	0	0	0	0	352	25.0	21.7
9:00 AM	12	73	154	52	8	1	0	0	0	0	0	0	0	300	25.0	21.7
10:00 AM	21	79	134	52	7	1	0	0	1	0	0	0	0	295	25.0	21.1
11:00 AM	24	75	143	29	7	0	0	0	0	0	0	0	0	278	24.0	20.5
12:00 PM	21	93	132	28	0	0	0	1	0	0	0	0	0	275	24.0	20.2
1:00 PM	21	70	150	51	1	1	0	0	1	0	0	0	0	295	25.0	21.1
2:00 PM	9	75	129	37	4	0	0	0	0	0	0	0	0	254	25.0	21.1
3:00 PM	14	100	161	34	2	0	0	1	0	0	0	0	0	312	24.0	20.5
4:00 PM	20	50	140	36	21	5	1	0	0	0	0	0	0	273	26.0	22.2
5:00 PM	20	67	105	39	3	0	1	0	1	0	0	0	0	236	25.0	20.9
6:00 PM	18	62	118	28	8	2	0	0	0	0	0	0	0	236	25.0	20.8
7:00 PM	16	56	94	39	13	1	0	0	0	0	0	0	0	219	26.0	21.5
8:00 PM	6	17	41	21	2	0	0	0	0	0	0	0	0	87	26.0	21.7
9:00 PM	2	11	28	17	2	0	0	0	0	0	0	0	0	60	27.0	22.7
10:00 PM	2	9	31	32	13	2	0	0	0	0	0	0	0	89	31.0	24.8
11:00 PM	0	4	27	28	3	1	0	0	0	0	0	0	0	63	28.0	24.6
Total	244	992	2030	732	186	29	7	2	4	0	0	0	0	4226	26.0	21.7
Percent	5.77%	23.47%	48.04%	17.32%	4.40%	0.69%	0.17%	0.05%	0.09%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	8:00 AM	8:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM		8:00 AM					7:00 AM		
Volume	24	81	178	93	60	6	2	0	1	0	0	0	0	368		
PM Peak	12:00 PM	3:00 PM	3:00 PM	1:00 PM	4:00 PM	4:00 PM	4:00 PM	12:00 PM	1:00 PM					3:00 PM		
Volume	21	100	161	51	21	5	1	1	1	0	0	0	0	312		

15th Percentile:	17.0 MPH	Average Speed:	21.7 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	715
85th Percentile:	26.0 MPH	Number in Pace:	3163	Percent of Vehicles > 25 MPH:	16.9%
95th Percentile:	30.0 MPH	Percent in Pace:	74.8%		

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Thursday, January 25, 2024

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	1	10	6	3	0	0	0	0	0	0	0	0	21	29.0	24.2
1:00 AM	0	2	5	3	0	1	0	0	0	0	0	0	0	11	27.5	23.2
2:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	2	23.7	23.0
3:00 AM	1	1	7	1	0	0	0	0	0	0	0	0	0	10	23.0	20.7
4:00 AM	1	2	9	2	3	1	0	0	0	0	0	0	0	18	31.5	23.9
5:00 AM	1	14	24	9	6	0	1	0	0	0	0	0	0	55	29.0	23.0
6:00 AM	7	18	62	36	11	7	0	0	0	0	0	0	0	141	28.0	23.7
7:00 AM	34	49	171	101	63	6	2	0	0	0	0	0	0	426	30.0	23.3
8:00 AM	30	88	192	69	12	2	2	0	1	0	0	0	0	396	25.0	21.3
9:00 AM	26	84	178	62	10	2	0	0	0	0	0	0	0	362	25.0	21.3
10:00 AM	31	92	158	59	7	1	0	0	1	0	0	0	0	349	25.0	20.8
11:00 AM	37	84	154	36	9	0	0	0	0	0	0	0	0	320	24.0	20.2
12:00 PM	41	112	148	39	0	0	0	1	0	0	0	0	0	341	24.0	19.6
1:00 PM	30	98	183	67	6	1	0	0	1	0	0	0	0	386	25.0	21.0
2:00 PM	26	84	140	37	4	0	0	0	0	0	0	0	0	291	24.0	20.2
3:00 PM	28	112	165	34	2	0	0	1	0	0	0	0	0	342	24.0	20.0
4:00 PM	33	67	149	38	21	5	1	0	0	0	0	0	0	314	26.0	21.4
5:00 PM	38	97	136	51	6	0	1	0	1	0	0	0	0	330	25.0	20.3
6:00 PM	30	82	152	50	8	2	0	0	0	0	0	0	0	324	25.0	20.7
7:00 PM	41	73	122	55	16	1	0	0	0	0	0	0	0	308	26.0	20.6
8:00 PM	26	33	68	48	5	0	0	0	0	0	0	0	0	180	27.0	20.9
9:00 PM	14	26	53	24	7	0	0	0	0	0	0	0	0	124	27.0	21.3
10:00 PM	8	15	46	38	13	2	0	0	0	0	0	0	0	122	29.0	23.3
11:00 PM	2	8	31	32	3	1	0	0	0	0	0	0	0	77	28.0	24.0
Total	486	1242	2365	897	215	32	7	2	4	0	0	0	0	5250	26.0	21.1
Percent	9.26%	23.66%	45.05%	17.09%	4.10%	0.61%	0.13%	0.04%	0.08%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	10:00 AM	8:00 AM	7:00 AM	7:00 AM	6:00 AM	7:00 AM		8:00 AM					7:00 AM		
Volume	37	92	192	101	63	7	2	0	1	0	0	0	0	426		
PM Peak	12:00 PM	12:00 PM	1:00 PM	1:00 PM	4:00 PM	4:00 PM	4:00 PM	12:00 PM	1:00 PM					1:00 PM		
Volume	41	112	183	67	21	5	1	1	1	0	0	0	0	386		

15th Percentile:	16.0 MPH	Average Speed:	21.1 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	859
85th Percentile:	26.0 MPH	Number in Pace:	3744	Percent of Vehicles > 25 MPH:	16.4%
95th Percentile:	29.0 MPH	Percent in Pace:	71.3%		

Great Plain Avenue (Route 135)
east of Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Friday, January 26, 2024

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	3	20.4	19.7
1:00 AM	3	3	4	0	1	0	0	0	0	0	0	0	0	11	23.0	17.5
2:00 AM	1	1	2	0	1	0	0	0	0	0	0	0	0	5	26.8	21.6
3:00 AM	1	3	1	1	1	1	0	0	0	0	0	0	0	8	30.8	22.6
4:00 AM	3	5	4	0	0	0	0	0	0	0	0	0	0	12	20.7	15.8
5:00 AM	9	6	6	5	0	0	1	0	0	0	0	0	0	27	26.0	17.9
6:00 AM	3	14	9	2	2	0	0	0	0	0	0	0	0	30	24.0	19.6
7:00 AM	5	9	13	5	4	0	0	0	0	0	0	0	0	36	27.8	21.2
8:00 AM	14	19	21	13	6	0	0	0	0	0	0	0	0	73	27.0	20.1
9:00 AM	27	16	21	2	1	0	0	0	0	0	0	0	0	67	23.1	16.0
10:00 AM	12	9	10	8	1	0	0	0	0	0	0	0	0	40	26.0	18.8
11:00 AM	17	15	11	4	0	0	0	0	0	0	0	0	0	47	23.0	15.9
12:00 PM	8	5	10	3	1	0	0	0	0	0	0	0	0	27	23.3	17.9
1:00 PM	22	20	33	6	0	0	0	0	0	0	0	0	0	81	23.0	17.2
2:00 PM	17	23	30	5	1	0	0	0	0	0	0	0	0	76	23.0	17.9
3:00 PM	3	6	21	11	0	0	0	0	0	0	0	0	0	41	26.0	22.0
4:00 PM	22	17	28	10	1	2	0	0	0	0	0	0	0	80	25.0	18.0
5:00 PM	20	4	4	1	1	0	0	0	0	0	0	0	0	30	21.0	12.4
6:00 PM	10	18	18	5	0	0	0	0	0	0	0	0	0	51	23.0	18.3
7:00 PM	34	11	12	11	0	0	0	0	0	0	0	0	0	68	25.0	15.1
8:00 PM	7	19	36	17	2	2	0	0	0	0	0	0	0	83	26.0	21.2
9:00 PM	18	19	13	10	1	0	0	0	0	0	0	0	0	61	25.0	18.1
10:00 PM	3	8	18	3	1	0	0	0	0	0	0	0	0	33	24.0	20.1
11:00 PM	1	5	5	3	1	0	0	0	0	0	0	0	0	15	26.0	21.0
Total	260	257	331	125	26	5	1	0	0	0	0	0	0	1005	25.0	18.3
Percent	25.87%	25.57%	32.94%	12.44%	2.59%	0.50%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	9:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM	3:00 AM	5:00 AM							8:00 AM		
Volume	27	19	21	13	6	1	1	0	0	0	0	0	0	73		
PM Peak	7:00 PM	2:00 PM	8:00 PM	8:00 PM	8:00 PM	4:00 PM								8:00 PM		
Volume	34	23	36	17	2	2	0	0	0	0	0	0	0	83		

15th Percentile:	10.0 MPH	Average Speed:	18.3 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	19.0 MPH	10 MPH Pace:	15 to 24 MPH	Number of Vehicles > 25 MPH:	126
85th Percentile:	25.0 MPH	Number in Pace:	588	Percent of Vehicles > 25 MPH:	12.5%
95th Percentile:	28.0 MPH	Percent in Pace:	58.5%		

Great Plain Avenue (Route 135)
east of Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Friday, January 26, 2024

Speed (60-minute)

EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	0	8	13	2	1	0	0	0	0	0	0	0	25	29.0	26.4
1:00 AM	0	3	5	6	2	0	0	0	0	0	0	0	0	16	29.0	24.1
2:00 AM	1	1	5	2	1	0	0	0	0	0	0	0	0	10	26.7	23.0
3:00 AM	1	1	4	3	0	1	0	0	0	0	0	0	0	10	27.3	23.6
4:00 AM	2	3	8	0	1	2	0	0	0	0	0	0	0	16	28.5	22.9
5:00 AM	2	10	14	8	3	0	0	0	0	0	0	0	0	37	27.0	22.6
6:00 AM	2	12	40	21	3	0	1	0	0	0	0	0	0	79	26.0	22.6
7:00 AM	5	48	151	61	27	4	0	1	0	0	0	0	0	297	27.6	23.2
8:00 AM	13	68	120	49	10	1	0	0	0	0	0	0	0	261	26.0	21.7
9:00 AM	6	69	128	53	10	1	0	0	0	0	0	0	0	267	26.0	21.9
10:00 AM	20	51	113	30	4	1	0	1	0	0	0	0	0	220	25.0	20.9
11:00 AM	14	70	127	35	5	1	0	0	0	0	0	0	0	252	25.0	20.8
12:00 PM	15	67	97	21	3	0	0	0	0	0	0	0	0	203	24.0	20.3
1:00 PM	21	60	133	16	3	1	0	0	0	0	0	0	0	234	23.0	20.2
2:00 PM	17	66	106	39	5	1	0	0	0	0	0	0	0	234	25.0	20.9
3:00 PM	18	57	134	23	8	1	0	0	0	0	0	0	0	241	24.0	20.9
4:00 PM	16	54	94	33	4	0	0	0	0	0	0	0	0	201	25.0	20.8
5:00 PM	19	66	113	26	3	0	0	0	0	0	0	0	0	227	24.0	20.4
6:00 PM	9	44	103	19	3	2	0	1	0	0	0	0	0	181	24.0	21.4
7:00 PM	9	32	66	16	2	0	0	0	0	0	0	0	0	125	24.0	20.7
8:00 PM	9	20	54	17	2	0	0	0	0	0	0	0	0	102	25.0	21.4
9:00 PM	2	9	46	28	3	0	0	0	0	0	0	0	0	88	26.0	22.9
10:00 PM	2	14	38	24	6	5	0	0	0	0	0	0	0	89	28.0	23.7
11:00 PM	0	4	33	41	14	4	1	0	0	0	0	0	0	97	30.0	26.0
Total	204	829	1740	584	124	26	2	3	0	0	0	0	0	3512	26.0	21.5
Percent	5.81%	23.60%	49.54%	16.63%	3.53%	0.74%	0.06%	0.09%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	11:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	6:00 AM	7:00 AM						7:00 AM		
Volume	20	70	151	61	27	4	1	1	0	0	0	0	0	297		
PM Peak	1:00 PM	12:00 PM	3:00 PM	11:00 PM	11:00 PM	10:00 PM	11:00 PM	6:00 PM						3:00 PM		
Volume	21	67	134	41	14	5	1	1	0	0	0	0	0	241		

15th Percentile:	17.0 MPH	Average Speed:	21.5 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	540
85th Percentile:	26.0 MPH	Number in Pace:	2687	Percent of Vehicles > 25 MPH:	15.4%
95th Percentile:	29.0 MPH	Percent in Pace:	76.5%		

Great Plain Avenue (Route 135)
east of Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Friday, January 26, 2024

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	2	9	13	2	1	0	0	0	0	0	0	0	28	29.0	25.7
1:00 AM	3	6	9	6	3	0	0	0	0	0	0	0	0	27	29.0	21.4
2:00 AM	2	2	7	2	2	0	0	0	0	0	0	0	0	15	26.9	22.5
3:00 AM	2	4	5	4	1	2	0	0	0	0	0	0	0	18	29.4	23.2
4:00 AM	5	8	12	0	1	2	0	0	0	0	0	0	0	28	24.0	19.9
5:00 AM	11	16	20	13	3	0	1	0	0	0	0	0	0	64	27.0	20.7
6:00 AM	5	26	49	23	5	0	1	0	0	0	0	0	0	109	26.0	21.8
7:00 AM	10	57	164	66	31	4	0	1	0	0	0	0	0	333	28.0	23.0
8:00 AM	27	87	141	62	16	1	0	0	0	0	0	0	0	334	26.0	21.3
9:00 AM	33	85	149	55	11	1	0	0	0	0	0	0	0	334	25.0	20.7
10:00 AM	32	60	123	38	5	1	0	1	0	0	0	0	0	260	25.0	20.6
11:00 AM	31	85	138	39	5	1	0	0	0	0	0	0	0	299	24.3	20.0
12:00 PM	23	72	107	24	4	0	0	0	0	0	0	0	0	230	24.0	20.0
1:00 PM	43	80	166	22	3	1	0	0	0	0	0	0	0	315	23.0	19.4
2:00 PM	34	89	136	44	6	1	0	0	0	0	0	0	0	310	25.0	20.2
3:00 PM	21	63	155	34	8	1	0	0	0	0	0	0	0	282	24.9	21.0
4:00 PM	38	71	122	43	5	2	0	0	0	0	0	0	0	281	25.0	20.0
5:00 PM	39	70	117	27	4	0	0	0	0	0	0	0	0	257	24.0	19.4
6:00 PM	19	62	121	24	3	2	0	1	0	0	0	0	0	232	24.0	20.7
7:00 PM	43	43	78	27	2	0	0	0	0	0	0	0	0	193	24.2	18.8
8:00 PM	16	39	90	34	4	2	0	0	0	0	0	0	0	185	25.4	21.3
9:00 PM	20	28	59	38	4	0	0	0	0	0	0	0	0	149	26.0	21.0
10:00 PM	5	22	56	27	7	5	0	0	0	0	0	0	0	122	28.0	22.8
11:00 PM	1	9	38	44	15	4	1	0	0	0	0	0	0	112	30.0	25.3
Total	464	1086	2071	709	150	31	3	3	0	0	0	0	0	4517	25.0	20.8
Percent	10.27%	24.04%	45.85%	15.70%	3.32%	0.69%	0.07%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	9:00 AM	8:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	5:00 AM	7:00 AM						8:00 AM		
Volume	33	87	164	66	31	4	1	1	0	0	0	0	0	334		
PM Peak	1:00 PM	2:00 PM	1:00 PM	2:00 PM	11:00 PM	10:00 PM	11:00 PM	6:00 PM						1:00 PM		
Volume	43	89	166	44	15	5	1	1	0	0	0	0	0	315		

15th Percentile:	16.0 MPH	Average Speed:	20.8 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	859
85th Percentile:	25.0 MPH	Number in Pace:	3262	Percent of Vehicles > 25 MPH:	19.0%
95th Percentile:	29.0 MPH	Percent in Pace:	72.2%		

Great Plain Avenue (Route 135)
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Site Code: TBA

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157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Saturday, January 27, 2024

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	1	3	2	0	1	0	0	0	0	0	0	0	8	26.0	21.5
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
2:00 AM	2	3	0	0	0	0	0	0	0	0	0	0	0	5	17.2	13.6
3:00 AM	2	0	3	1	0	0	0	0	0	0	0	0	0	6	23.8	18.3
4:00 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	2	12.0	12.0
5:00 AM	0	1	4	3	1	0	0	0	0	0	0	0	0	9	26.8	23.9
6:00 AM	9	7	8	2	1	0	0	0	0	0	0	0	0	27	22.0	17.3
7:00 AM	9	14	24	7	6	0	0	0	0	0	0	0	0	60	25.2	20.3
8:00 AM	18	21	21	25	4	0	0	0	0	0	0	0	0	89	27.0	20.1
9:00 AM	6	14	46	29	10	0	0	0	0	0	0	0	0	105	28.0	23.0
10:00 AM	20	18	36	20	5	0	0	0	0	0	0	0	0	99	26.0	19.7
11:00 AM	15	21	27	13	3	0	0	0	0	0	0	0	0	79	26.0	19.8
12:00 PM	12	12	51	21	3	0	0	0	0	0	0	0	0	99	25.0	20.8
1:00 PM	12	27	39	16	0	0	0	0	0	0	0	0	0	94	25.0	19.8
2:00 PM	13	32	40	33	9	1	0	0	0	0	0	0	0	128	27.0	21.6
3:00 PM	5	14	38	10	5	2	0	0	0	0	0	0	0	74	27.0	22.0
4:00 PM	18	16	30	14	3	0	0	0	0	0	0	0	0	81	25.0	19.5
5:00 PM	16	25	41	23	3	0	0	0	0	0	0	0	0	108	26.0	20.5
6:00 PM	13	35	50	13	1	0	0	0	0	0	0	0	0	112	24.0	20.0
7:00 PM	5	15	23	11	0	0	0	0	0	0	0	0	0	54	27.0	20.8
8:00 PM	6	6	17	4	5	0	0	0	0	0	0	0	0	38	27.4	20.8
9:00 PM	5	16	23	15	2	1	0	0	0	0	0	0	0	62	26.0	21.7
10:00 PM	5	6	26	7	1	0	0	0	0	0	0	0	0	45	25.0	21.1
11:00 PM	10	10	14	2	2	1	0	0	0	0	0	0	0	39	24.0	19.2
Total	204	314	564	271	64	6	0	0	0	0	0	0	0	1423	26.0	20.6
Percent	14.34%	22.07%	39.63%	19.04%	4.50%	0.42%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	8:00 AM	9:00 AM	9:00 AM	9:00 AM	12:00 AM								9:00 AM		
Volume	20	21	46	29	10	1	0	0	0	0	0	0	0	105		
PM Peak	4:00 PM	6:00 PM	12:00 PM	2:00 PM	2:00 PM	3:00 PM								2:00 PM		
Volume	18	35	51	33	9	2	0	0	0	0	0	0	0	128		

15th Percentile:	15.0 MPH	Average Speed:	20.6 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	247
85th Percentile:	26.0 MPH	Number in Pace:	934	Percent of Vehicles > 25 MPH:	17.4%
95th Percentile:	29.0 MPH	Percent in Pace:	65.6%		

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Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Saturday, January 27, 2024

Speed (60-minute)

EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	3	10	21	4	1	0	0	0	0	0	0	0	39	29.0	26.3
1:00 AM	0	4	10	6	5	1	0	0	0	0	0	0	0	26	32.0	25.3
2:00 AM	0	2	6	3	4	0	0	0	0	0	0	0	0	15	31.0	25.0
3:00 AM	0	0	7	2	3	0	0	0	0	0	0	0	0	12	31.4	25.3
4:00 AM	0	4	1	5	1	0	0	0	0	0	0	0	0	11	27.5	23.4
5:00 AM	0	1	10	13	4	1	0	0	0	0	0	0	0	29	29.8	25.5
6:00 AM	2	6	25	17	6	0	0	0	0	0	0	0	0	56	28.0	23.9
7:00 AM	5	35	58	29	7	1	0	2	0	0	0	0	0	137	27.0	22.5
8:00 AM	4	29	82	30	8	1	0	0	0	0	0	0	0	154	26.0	22.4
9:00 AM	10	43	79	26	7	1	0	0	0	0	0	0	0	166	26.0	21.4
10:00 AM	24	73	80	24	9	0	0	0	0	0	0	0	0	210	25.0	20.0
11:00 AM	16	80	118	46	26	5	0	0	0	0	0	0	0	291	27.5	21.9
12:00 PM	21	86	107	23	14	2	0	0	0	0	0	0	0	253	25.0	20.8
1:00 PM	22	63	138	44	12	4	0	0	0	0	0	0	0	283	25.7	21.5
2:00 PM	25	57	122	35	11	0	0	0	0	0	0	0	0	250	25.0	20.9
3:00 PM	17	60	135	54	26	6	1	0	0	0	0	0	0	299	28.0	22.6
4:00 PM	11	39	82	28	6	0	0	0	0	0	0	0	0	166	25.0	21.2
5:00 PM	12	49	82	27	2	0	1	0	0	0	0	0	0	173	25.0	20.9
6:00 PM	10	42	68	26	4	1	0	0	0	0	0	0	0	151	25.5	21.2
7:00 PM	13	44	58	25	5	0	0	0	0	0	0	0	0	145	25.0	20.8
8:00 PM	7	34	64	27	8	0	0	0	0	0	0	0	0	140	27.0	21.8
9:00 PM	6	30	66	30	8	0	1	0	0	0	0	0	0	141	27.0	22.3
10:00 PM	7	28	40	38	11	6	1	0	0	0	0	0	0	131	28.0	23.7
11:00 PM	1	6	32	41	16	6	0	0	0	0	0	0	0	102	31.0	25.9
Total	213	818	1480	620	207	36	4	2	0	0	0	0	0	3380	27.0	21.9
Percent	6.30%	24.20%	43.79%	18.34%	6.12%	1.07%	0.12%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	11:00 AM	11:00 AM	11:00 AM	11:00 AM	11:00 AM		7:00 AM						11:00 AM		
Volume	24	80	118	46	26	5	0	2	0	0	0	0	0	291		
PM Peak	2:00 PM	12:00 PM	1:00 PM	3:00 PM	3:00 PM	3:00 PM	3:00 PM							3:00 PM		
Volume	25	86	138	54	26	6	1	0	0	0	0	0	0	299		

15th Percentile:	17.0 MPH	Average Speed:	21.9 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	18 to 27 MPH	Number of Vehicles > 25 MPH:	664
85th Percentile:	27.0 MPH	Number in Pace:	2430	Percent of Vehicles > 25 MPH:	19.6%
95th Percentile:	31.0 MPH	Percent in Pace:	71.9%		

Great Plain Avenue (Route 135)
east of Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Saturday, January 27, 2024

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	4	13	23	4	2	0	0	0	0	0	0	0	47	29.0	25.4
1:00 AM	0	4	10	6	5	1	0	0	0	0	0	0	0	26	32.0	25.3
2:00 AM	2	5	6	3	4	0	0	0	0	0	0	0	0	20	31.0	22.2
3:00 AM	2	0	10	3	3	0	0	0	0	0	0	0	0	18	29.4	23.0
4:00 AM	2	4	1	5	1	0	0	0	0	0	0	0	0	13	26.6	21.6
5:00 AM	0	2	14	16	5	1	0	0	0	0	0	0	0	38	29.5	25.1
6:00 AM	11	13	33	19	7	0	0	0	0	0	0	0	0	83	27.0	21.8
7:00 AM	14	49	82	36	13	1	0	2	0	0	0	0	0	197	26.6	21.8
8:00 AM	22	50	103	55	12	1	0	0	0	0	0	0	0	243	27.0	21.6
9:00 AM	16	57	125	55	17	1	0	0	0	0	0	0	0	271	27.0	22.0
10:00 AM	44	91	116	44	14	0	0	0	0	0	0	0	0	309	25.0	19.9
11:00 AM	31	101	145	59	29	5	0	0	0	0	0	0	0	370	27.0	21.5
12:00 PM	33	98	158	44	17	2	0	0	0	0	0	0	0	352	25.0	20.8
1:00 PM	34	90	177	60	12	4	0	0	0	0	0	0	0	377	25.0	21.1
2:00 PM	38	89	162	68	20	1	0	0	0	0	0	0	0	378	26.0	21.1
3:00 PM	22	74	173	64	31	8	1	0	0	0	0	0	0	373	27.0	22.5
4:00 PM	29	55	112	42	9	0	0	0	0	0	0	0	0	247	25.0	20.6
5:00 PM	28	74	123	50	5	0	1	0	0	0	0	0	0	281	25.0	20.7
6:00 PM	23	77	118	39	5	1	0	0	0	0	0	0	0	263	25.0	20.6
7:00 PM	18	59	81	36	5	0	0	0	0	0	0	0	0	199	26.0	20.8
8:00 PM	13	40	81	31	13	0	0	0	0	0	0	0	0	178	27.0	21.6
9:00 PM	11	46	89	45	10	1	1	0	0	0	0	0	0	203	27.0	22.1
10:00 PM	12	34	66	45	12	6	1	0	0	0	0	0	0	176	28.0	23.1
11:00 PM	11	16	46	43	18	7	0	0	0	0	0	0	0	141	30.0	24.1
Total	417	1132	2044	891	271	42	4	2	0	0	0	0	0	4803	26.0	21.5
Percent	8.68%	23.57%	42.56%	18.55%	5.64%	0.87%	0.08%	0.04%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	11:00 AM	11:00 AM	11:00 AM	11:00 AM	11:00 AM		7:00 AM						11:00 AM		
Volume	44	101	145	59	29	5	0	2	0	0	0	0	0	370		
PM Peak	2:00 PM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	3:00 PM	3:00 PM							2:00 PM		
Volume	38	98	177	68	31	8	1	0	0	0	0	0	0	378		

15th Percentile:	16.0 MPH	Average Speed:	21.5 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	18 to 27 MPH	Number of Vehicles > 25 MPH:	859
85th Percentile:	26.0 MPH	Number in Pace:	3359	Percent of Vehicles > 25 MPH:	17.9%
95th Percentile:	31.0 MPH	Percent in Pace:	69.9%		

Great Plain Avenue (Route 135)
east of Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Sunday, January 28, 2024

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	1	9	3	2	0	0	0	0	0	0	0	0	16	27.5	22.8
1:00 AM	0	5	1	1	0	0	1	0	0	0	0	0	0	8	26.7	22.0
2:00 AM	0	1	2	1	0	0	0	0	0	0	0	0	0	4	24.3	21.5
3:00 AM	4	1	2	0	0	0	0	0	0	0	0	0	0	7	22.2	16.7
4:00 AM	3	0	2	2	0	0	0	0	0	0	0	0	0	7	25.1	16.7
5:00 AM	4	1	6	3	1	0	0	0	0	0	0	0	0	15	25.9	19.3
6:00 AM	3	7	10	3	1	0	0	0	0	0	0	0	0	24	24.6	19.3
7:00 AM	4	7	14	9	1	0	0	0	0	0	0	0	0	35	27.9	21.4
8:00 AM	13	20	29	12	2	0	0	0	0	0	0	0	0	76	25.0	19.5
9:00 AM	15	16	33	25	2	1	0	0	0	0	0	0	0	92	27.0	20.8
10:00 AM	22	28	18	16	9	0	0	0	0	0	0	0	0	93	28.0	19.3
11:00 AM	18	16	25	11	1	0	0	0	0	0	0	0	0	71	25.0	18.5
12:00 PM	9	17	22	11	7	0	0	0	0	0	0	0	0	66	27.3	20.7
1:00 PM	28	14	22	24	6	0	0	0	0	0	0	0	0	94	27.1	19.1
2:00 PM	7	17	23	21	6	0	0	0	0	0	0	0	0	74	28.0	22.0
3:00 PM	14	11	26	11	6	1	0	0	0	0	0	0	0	69	26.0	20.1
4:00 PM	3	16	16	9	5	0	0	0	0	0	0	0	0	49	28.0	21.1
5:00 PM	4	6	19	10	1	0	0	0	0	0	0	0	0	40	27.0	22.1
6:00 PM	2	4	10	9	1	1	0	0	0	0	0	0	0	27	29.0	23.3
7:00 PM	13	10	7	3	3	0	0	0	0	0	0	0	0	36	24.8	17.4
8:00 PM	0	3	9	2	0	2	0	0	0	0	0	0	0	16	27.0	24.0
9:00 PM	0	1	9	1	0	0	0	0	0	0	0	0	0	11	24.0	22.4
10:00 PM	1	6	1	0	0	0	0	0	0	0	0	0	0	8	19.0	17.0
11:00 PM	4	5	5	0	0	0	0	0	0	0	0	0	0	14	22.1	17.2
Total	172	213	320	187	54	5	1	0	0	0	0	0	0	952	27.0	20.2
Percent	18.07%	22.37%	33.61%	19.64%	5.67%	0.53%	0.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	10:00 AM	9:00 AM	9:00 AM	10:00 AM	9:00 AM	1:00 AM							10:00 AM		
Volume	22	28	33	25	9	1	1	0	0	0	0	0	0	93		
PM Peak	1:00 PM	12:00 PM	3:00 PM	1:00 PM	12:00 PM	8:00 PM								1:00 PM		
Volume	28	17	26	24	7	2	0	0	0	0	0	0	0	94		

15th Percentile:	13.0 MPH	Average Speed:	20.2 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	198
85th Percentile:	27.0 MPH	Number in Pace:	556	Percent of Vehicles > 25 MPH:	20.8%
95th Percentile:	30.0 MPH	Percent in Pace:	58.4%		

Great Plain Avenue (Route 135)
east of Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Sunday, January 28, 2024

Speed (60-minute)

EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	4	15	20	3	0	0	0	0	0	0	0	0	42	28.0	24.8
1:00 AM	1	2	8	5	1	1	0	0	0	0	0	0	0	18	29.0	24.2
2:00 AM	0	2	4	4	2	0	0	0	0	0	0	0	0	12	30.1	25.4
3:00 AM	0	0	4	3	2	1	0	0	0	0	0	0	0	10	32.6	27.0
4:00 AM	2	4	4	1	1	2	0	0	0	0	0	0	0	14	32.2	22.9
5:00 AM	0	0	2	4	4	0	0	0	0	0	0	0	0	10	32.7	28.0
6:00 AM	1	7	22	15	4	0	0	0	0	0	0	0	0	49	28.8	23.7
7:00 AM	3	14	39	21	13	2	0	0	0	0	0	0	0	92	30.0	23.8
8:00 AM	5	35	52	23	8	1	0	0	0	0	0	0	0	124	27.6	21.8
9:00 AM	3	30	76	25	2	1	0	0	0	0	0	0	0	137	25.0	21.8
10:00 AM	6	28	84	34	6	0	0	0	0	0	0	0	0	158	26.0	22.2
11:00 AM	16	39	84	22	7	1	0	0	0	0	0	0	0	169	25.0	20.8
12:00 PM	7	39	73	18	3	1	0	0	0	0	0	0	0	141	25.0	21.1
1:00 PM	8	29	88	31	9	1	0	0	0	0	0	0	0	166	26.0	22.1
2:00 PM	6	43	67	44	9	3	0	0	0	0	0	0	0	172	27.0	22.5
3:00 PM	8	38	78	37	10	0	0	0	0	0	0	0	0	171	26.0	22.0
4:00 PM	12	35	81	41	8	1	0	0	0	0	0	0	0	178	26.5	22.0
5:00 PM	17	30	74	46	12	3	0	0	0	0	0	0	0	182	28.9	22.6
6:00 PM	8	29	38	17	3	1	0	0	0	0	0	0	0	96	25.8	21.0
7:00 PM	8	19	29	28	8	2	0	0	0	0	0	0	0	94	29.0	22.9
8:00 PM	5	24	50	35	6	1	1	0	0	0	0	0	0	122	26.9	22.7
9:00 PM	1	9	39	14	4	1	0	0	0	0	0	0	0	68	25.0	22.8
10:00 PM	1	13	16	2	0	0	0	0	0	0	0	0	0	32	23.0	20.0
11:00 PM	2	4	20	5	0	0	0	0	0	0	0	0	0	31	24.5	21.7
Total	120	477	1047	495	125	23	1	0	0	0	0	0	0	2288	27.0	22.2
Percent	5.24%	20.85%	45.76%	21.63%	5.46%	1.01%	0.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	11:00 AM	10:00 AM	10:00 AM	7:00 AM	4:00 AM								11:00 AM		
Volume	16	39	84	34	13	2	0	0	0	0	0	0	0	169		
PM Peak	5:00 PM	2:00 PM	1:00 PM	5:00 PM	5:00 PM	2:00 PM	8:00 PM							5:00 PM		
Volume	17	43	88	46	12	3	1	0	0	0	0	0	0	182		

15th Percentile:	18.0 MPH	Average Speed:	22.2 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	482
85th Percentile:	27.0 MPH	Number in Pace:	1693	Percent of Vehicles > 25 MPH:	21.1%
95th Percentile:	31.0 MPH	Percent in Pace:	74.0%		

Great Plain Avenue (Route 135)
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Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Sunday, January 28, 2024

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	5	24	23	5	0	0	0	0	0	0	0	0	58	28.0	24.3
1:00 AM	1	7	9	6	1	1	1	0	0	0	0	0	0	26	29.0	23.5
2:00 AM	0	3	6	5	2	0	0	0	0	0	0	0	0	16	29.0	24.4
3:00 AM	4	1	6	3	2	1	0	0	0	0	0	0	0	17	28.8	22.8
4:00 AM	5	4	6	3	1	2	0	0	0	0	0	0	0	21	26.0	20.8
5:00 AM	4	1	8	7	5	0	0	0	0	0	0	0	0	25	30.4	22.8
6:00 AM	4	14	32	18	5	0	0	0	0	0	0	0	0	73	28.0	22.2
7:00 AM	7	21	53	30	14	2	0	0	0	0	0	0	0	127	29.0	23.1
8:00 AM	18	55	81	35	10	1	0	0	0	0	0	0	0	200	26.0	20.9
9:00 AM	18	46	109	50	4	2	0	0	0	0	0	0	0	229	26.0	21.4
10:00 AM	28	56	102	50	15	0	0	0	0	0	0	0	0	251	27.0	21.2
11:00 AM	34	55	109	33	8	1	0	0	0	0	0	0	0	240	25.0	20.2
12:00 PM	16	56	95	29	10	1	0	0	0	0	0	0	0	207	26.0	21.0
1:00 PM	36	43	110	55	15	1	0	0	0	0	0	0	0	260	27.0	21.0
2:00 PM	13	60	90	65	15	3	0	0	0	0	0	0	0	246	27.0	22.3
3:00 PM	22	49	104	48	16	1	0	0	0	0	0	0	0	240	26.0	21.5
4:00 PM	15	51	97	50	13	1	0	0	0	0	0	0	0	227	27.0	21.8
5:00 PM	21	36	93	56	13	3	0	0	0	0	0	0	0	222	28.0	22.5
6:00 PM	10	33	48	26	4	2	0	0	0	0	0	0	0	123	26.0	21.5
7:00 PM	21	29	36	31	11	2	0	0	0	0	0	0	0	130	28.0	21.4
8:00 PM	5	27	59	37	6	3	1	0	0	0	0	0	0	138	27.0	22.8
9:00 PM	1	10	48	15	4	1	0	0	0	0	0	0	0	79	25.0	22.7
10:00 PM	2	19	17	2	0	0	0	0	0	0	0	0	0	40	23.0	19.4
11:00 PM	6	9	25	5	0	0	0	0	0	0	0	0	0	45	24.0	20.3
Total	292	690	1367	682	179	28	2	0	0	0	0	0	0	3240	27.0	21.6
Percent	9.01%	21.30%	42.19%	21.05%	5.52%	0.86%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	10:00 AM	9:00 AM	9:00 AM	10:00 AM	4:00 AM	1:00 AM							10:00 AM		
Volume	34	56	109	50	15	2	1	0	0	0	0	0	0	251		
PM Peak	1:00 PM	2:00 PM	1:00 PM	2:00 PM	3:00 PM	2:00 PM	8:00 PM							1:00 PM		
Volume	36	60	110	65	16	3	1	0	0	0	0	0	0	260		

15th Percentile:	17.0 MPH	Average Speed:	21.6 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	859
85th Percentile:	27.0 MPH	Number in Pace:	2249	Percent of Vehicles > 25 MPH:	26.5%
95th Percentile:	31.0 MPH	Percent in Pace:	69.4%		

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Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Monday, January 29, 2024

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	7	20.4	17.4
1:00 AM	2	3	2	1	0	0	0	0	0	0	0	0	0	8	21.9	17.1
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	18.0	18.0
3:00 AM	0	2	3	0	0	0	0	0	0	0	0	0	0	5	22.4	19.6
4:00 AM	3	7	2	0	0	0	0	0	0	0	0	0	0	12	19.4	16.7
5:00 AM	17	12	10	4	0	0	0	0	0	0	0	0	0	43	24.0	16.1
6:00 AM	28	16	35	9	1	0	0	0	0	0	0	0	0	89	24.0	17.9
7:00 AM	24	32	36	28	10	3	0	0	0	0	0	0	0	133	28.0	20.9
8:00 AM	28	23	50	32	11	2	0	0	0	0	0	0	0	146	28.0	20.7
9:00 AM	34	24	35	25	4	2	0	0	0	0	0	0	0	124	26.6	19.1
10:00 AM	24	20	41	21	6	0	0	0	0	0	0	0	0	112	26.0	19.6
11:00 AM	25	40	45	10	3	1	0	0	0	0	0	0	0	124	24.0	18.9
12:00 PM	14	23	27	13	2	0	0	0	0	0	0	0	0	79	26.0	19.5
1:00 PM	40	35	57	22	2	0	0	0	0	0	0	0	0	156	24.8	18.3
2:00 PM	18	24	37	30	5	0	0	0	0	0	0	0	0	114	27.0	20.9
3:00 PM	18	16	44	19	0	0	0	0	0	0	0	0	0	97	25.0	19.5
4:00 PM	23	20	34	24	4	0	0	0	0	0	0	0	0	105	26.0	20.0
5:00 PM	14	20	41	14	2	1	0	0	0	0	0	0	0	92	25.0	19.9
6:00 PM	18	19	40	18	4	0	0	0	1	0	0	0	0	100	26.0	20.6
7:00 PM	8	18	22	27	12	0	0	0	0	0	0	0	0	87	29.0	22.6
8:00 PM	21	15	18	11	4	1	0	0	0	0	0	0	0	70	27.0	18.8
9:00 PM	8	10	21	11	3	0	0	0	0	0	0	0	0	53	26.0	20.6
10:00 PM	7	5	8	4	0	0	0	0	0	0	0	0	0	24	24.6	18.1
11:00 PM	3	3	1	4	0	0	0	0	0	0	0	0	0	11	26.0	18.5
Total	377	393	611	327	73	10	0	0	1	0	0	0	0	1792	26.0	19.7
Percent	21.04%	21.93%	34.10%	18.25%	4.07%	0.56%	0.00%	0.00%	0.06%	0.00%	0.00%	0.00%	0.00%			
AM Peak	9:00 AM	11:00 AM	8:00 AM	8:00 AM	8:00 AM	7:00 AM								8:00 AM		
Volume	34	40	50	32	11	3	0	0	0	0	0	0	0	146		
PM Peak	1:00 PM	1:00 PM	1:00 PM	2:00 PM	7:00 PM	5:00 PM			6:00 PM					1:00 PM		
Volume	40	35	57	30	12	1	0	0	1	0	0	0	0	156		

15th Percentile:	12.0 MPH	Average Speed:	19.7 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	20.5 MPH	10 MPH Pace:	18 to 27 MPH	Number of Vehicles > 25 MPH:	305
85th Percentile:	26.0 MPH	Number in Pace:	1061	Percent of Vehicles > 25 MPH:	17.0%
95th Percentile:	29.0 MPH	Percent in Pace:	59.2%		

Great Plain Avenue (Route 135)
east of Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Monday, January 29, 2024

Speed (60-minute)

EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	5	13	4	0	0	0	0	0	0	0	0	0	23	24.7	21.8
1:00 AM	0	5	6	1	0	0	0	0	0	0	0	0	0	12	23.4	20.8
2:00 AM	0	3	5	3	0	0	0	0	0	0	0	0	0	11	26.0	22.3
3:00 AM	2	6	7	3	2	0	0	0	0	0	0	0	0	20	26.2	21.2
4:00 AM	4	7	6	3	0	0	0	0	0	0	0	0	0	20	23.3	19.1
5:00 AM	4	14	24	5	2	0	0	0	0	0	0	0	0	49	24.0	20.8
6:00 AM	5	21	32	20	1	0	0	0	0	0	0	0	0	79	26.0	21.4
7:00 AM	4	47	141	69	20	5	0	0	0	0	0	0	0	286	28.0	23.3
8:00 AM	4	75	153	79	14	3	0	1	0	0	0	0	0	329	26.0	22.6
9:00 AM	12	68	134	50	13	3	0	0	0	0	0	0	0	280	26.0	21.9
10:00 AM	10	68	136	47	9	3	0	0	0	0	0	0	0	273	25.0	21.6
11:00 AM	12	79	163	50	3	2	0	2	0	0	0	0	0	311	25.0	21.5
12:00 PM	16	98	150	33	7	1	0	1	0	0	0	0	0	306	24.0	20.8
1:00 PM	16	71	130	36	10	2	0	0	0	0	0	0	0	265	25.0	21.1
2:00 PM	17	54	149	62	9	0	0	0	1	0	0	0	0	292	26.0	22.0
3:00 PM	17	98	110	34	13	2	0	0	0	0	0	0	0	274	25.0	20.8
4:00 PM	15	32	123	51	6	2	0	0	0	0	0	0	0	229	26.0	22.0
5:00 PM	7	36	87	33	3	0	1	0	0	0	0	0	0	167	25.0	21.7
6:00 PM	16	47	89	39	11	1	0	0	0	0	0	0	0	203	26.0	21.6
7:00 PM	8	31	90	37	15	3	1	0	0	0	0	0	0	185	28.0	22.8
8:00 PM	6	27	56	48	15	3	0	0	0	0	0	0	0	155	29.0	23.7
9:00 PM	0	13	46	35	9	3	0	0	0	0	0	0	0	106	28.3	24.3
10:00 PM	0	4	23	14	7	2	0	0	0	0	0	0	0	50	30.0	25.5
11:00 PM	0	3	11	24	9	0	0	0	0	0	0	0	0	47	30.0	25.9
Total	176	912	1884	780	178	35	2	4	1	0	0	0	0	3972	26.0	22.0
Percent	4.43%	22.96%	47.43%	19.64%	4.48%	0.88%	0.05%	0.10%	0.03%	0.00%	0.00%	0.00%	0.00%			
AM Peak	9:00 AM	11:00 AM	11:00 AM	8:00 AM	7:00 AM	7:00 AM		11:00 AM						8:00 AM		
Volume	12	79	163	79	20	5	0	2	0	0	0	0	0	329		
PM Peak	2:00 PM	12:00 PM	12:00 PM	2:00 PM	7:00 PM	7:00 PM	5:00 PM	12:00 PM	2:00 PM					12:00 PM		
Volume	17	98	150	62	15	3	1	1	1	0	0	0	0	306		

15th Percentile:	18.0 MPH	Average Speed:	22.0 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	722
85th Percentile:	26.0 MPH	Number in Pace:	3054	Percent of Vehicles > 25 MPH:	18.2%
95th Percentile:	30.0 MPH	Percent in Pace:	76.9%		

Great Plain Avenue (Route 135)
east of Chestnut Street
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-B (Speed)

Count Date
Monday, January 29, 2024

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	10	15	4	0	0	0	0	0	0	0	0	0	30	24.0	20.8
1:00 AM	2	8	8	2	0	0	0	0	0	0	0	0	0	20	23.2	19.4
2:00 AM	0	4	5	3	0	0	0	0	0	0	0	0	0	12	26.0	21.9
3:00 AM	2	8	10	3	2	0	0	0	0	0	0	0	0	25	25.4	20.9
4:00 AM	7	14	8	3	0	0	0	0	0	0	0	0	0	32	23.0	18.2
5:00 AM	21	26	34	9	2	0	0	0	0	0	0	0	0	92	24.0	18.6
6:00 AM	33	37	67	29	2	0	0	0	0	0	0	0	0	168	25.0	19.5
7:00 AM	28	79	177	97	30	8	0	0	0	0	0	0	0	419	28.0	22.6
8:00 AM	32	98	203	111	25	5	0	1	0	0	0	0	0	475	27.0	22.0
9:00 AM	46	92	169	75	17	5	0	0	0	0	0	0	0	404	26.0	21.0
10:00 AM	34	88	177	68	15	3	0	0	0	0	0	0	0	385	25.0	21.0
11:00 AM	37	119	208	60	6	3	0	2	0	0	0	0	0	435	25.0	20.7
12:00 PM	30	121	177	46	9	1	0	1	0	0	0	0	0	385	24.0	20.5
1:00 PM	56	106	187	58	12	2	0	0	0	0	0	0	0	421	25.0	20.1
2:00 PM	35	78	186	92	14	0	0	0	1	0	0	0	0	406	26.0	21.7
3:00 PM	35	114	154	53	13	2	0	0	0	0	0	0	0	371	25.0	20.5
4:00 PM	38	52	157	75	10	2	0	0	0	0	0	0	0	334	26.0	21.4
5:00 PM	21	56	128	47	5	1	1	0	0	0	0	0	0	259	25.0	21.1
6:00 PM	34	66	129	57	15	1	0	0	1	0	0	0	0	303	26.0	21.3
7:00 PM	16	49	112	64	27	3	1	0	0	0	0	0	0	272	28.0	22.8
8:00 PM	27	42	74	59	19	4	0	0	0	0	0	0	0	225	28.4	22.2
9:00 PM	8	23	67	46	12	3	0	0	0	0	0	0	0	159	28.0	23.1
10:00 PM	7	9	31	18	7	2	0	0	0	0	0	0	0	74	28.0	23.1
11:00 PM	3	6	12	28	9	0	0	0	0	0	0	0	0	58	29.5	24.5
Total	553	1305	2495	1107	251	45	2	4	2	0	0	0	0	5764	26.0	21.3
Percent	9.59%	22.64%	43.29%	19.21%	4.35%	0.78%	0.03%	0.07%	0.03%	0.00%	0.00%	0.00%	0.00%			
AM Peak	9:00 AM	11:00 AM	11:00 AM	8:00 AM	7:00 AM	7:00 AM		11:00 AM						8:00 AM		
Volume	46	119	208	111	30	8	0	2	0	0	0	0	0	475		
PM Peak	1:00 PM	12:00 PM	1:00 PM	2:00 PM	7:00 PM	8:00 PM	5:00 PM	12:00 PM	2:00 PM					1:00 PM		
Volume	56	121	187	92	27	4	1	1	1	0	0	0	0	421		

15th Percentile:	16.0 MPH	Average Speed:	21.3 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	859
85th Percentile:	26.0 MPH	Number in Pace:	4108	Percent of Vehicles > 25 MPH:	14.9%
95th Percentile:	30.0 MPH	Percent in Pace:	71.3%		

Chapel Street north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Tuesday, January 23, 2024

Speed (60-minute)

NB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	3	2	0	0	0	0	0	0	0	0	5	31.4	28.6
1:00 AM	0	0	0	2	2	0	0	0	1	0	0	0	0	5	40.2	34.2
2:00 AM	0	0	1	1	0	0	1	0	0	0	0	0	0	3	39.2	32.0
3:00 AM	0	1	1	1	1	1	0	0	0	0	0	0	0	5	35.2	28.0
4:00 AM	0	0	1	3	0	0	0	0	0	0	0	0	0	4	28.6	27.3
5:00 AM	3	3	5	8	10	2	0	0	0	2	0	0	0	33	34.0	27.9
6:00 AM	3	5	21	33	19	9	0	3	0	0	1	0	0	94	34.0	27.8
7:00 AM	13	37	66	61	37	9	3	0	1	0	0	0	0	227	31.0	24.3
8:00 AM	26	68	71	25	15	5	1	0	0	0	0	0	0	211	26.5	20.9
9:00 AM	24	67	48	21	17	4	1	0	0	0	0	0	0	182	28.0	20.7
10:00 AM	23	60	63	28	15	5	0	1	0	0	0	0	0	195	27.0	21.1
11:00 AM	16	66	72	24	13	2	1	0	0	0	0	0	0	194	26.0	21.0
12:00 PM	24	68	53	12	8	1	0	0	0	0	0	0	0	166	24.0	19.4
1:00 PM	26	54	78	35	15	2	2	0	0	0	0	0	0	212	27.0	21.2
2:00 PM	24	48	50	13	8	0	0	0	0	0	0	0	0	143	24.0	19.4
3:00 PM	18	53	54	18	19	8	0	0	0	0	0	0	0	170	30.0	21.8
4:00 PM	12	39	93	30	18	4	1	0	0	0	0	0	0	197	28.0	22.4
5:00 PM	9	48	71	36	22	8	0	1	0	0	0	0	0	195	30.9	23.0
6:00 PM	17	21	54	22	18	10	0	2	0	0	0	0	0	144	31.6	23.1
7:00 PM	6	9	44	31	24	10	0	0	0	0	0	0	0	124	32.0	25.6
8:00 PM	4	8	28	26	5	5	0	0	0	0	0	0	0	76	29.0	24.1
9:00 PM	2	4	15	15	10	1	0	0	0	0	0	0	0	47	31.0	25.2
10:00 PM	0	1	5	5	5	0	1	0	0	0	0	0	0	17	31.0	27.4
11:00 PM	2	1	1	7	6	4	0	0	0	0	0	0	0	21	36.0	28.4
Total	252	661	895	460	289	90	11	7	2	2	1	0	0	2670	30.0	22.4
Percent	9.44%	24.76%	33.52%	17.23%	10.82%	3.37%	0.41%	0.26%	0.07%	0.07%	0.04%	0.00%	0.00%			
AM Peak	8:00 AM	8:00 AM	11:00 AM	7:00 AM	7:00 AM	6:00 AM	7:00 AM	6:00 AM	1:00 AM	5:00 AM	6:00 AM			7:00 AM		
Volume	26	68	72	61	37	9	3	3	1	2	1	0	0	227		
PM Peak	1:00 PM	12:00 PM	4:00 PM	5:00 PM	7:00 PM	6:00 PM	1:00 PM	6:00 PM						1:00 PM		
Volume	26	68	93	36	24	10	2	2	0	0	0	0	0	212		

15th Percentile:	16.0 MPH	Average Speed:	22.4 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	737
85th Percentile:	30.0 MPH	Number in Pace:	1590	Percent of Vehicles > 25 MPH:	27.6%
95th Percentile:	34.0 MPH	Percent in Pace:	59.6%		

Chapel Street north of
Great Plain Avenue (Route 135)
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157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Tuesday, January 23, 2024

Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	1	2	0	0	0	0	0	0	0	0	3	32.8	30.0
1:00 AM	0	0	1	1	2	0	0	0	0	0	0	0	0	4	31.6	28.3
2:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	2	25.7	25.0
3:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	33.0	33.0
4:00 AM	1	2	0	0	2	1	0	0	0	0	0	0	0	6	32.0	23.0
5:00 AM	0	0	4	12	12	1	0	0	0	0	0	0	0	29	33.0	28.4
6:00 AM	0	4	25	35	18	4	0	0	0	0	0	0	0	86	31.0	26.6
7:00 AM	9	37	53	41	5	0	0	0	0	0	0	0	0	145	27.0	21.9
8:00 AM	12	39	71	19	1	1	0	0	0	0	0	0	0	143	24.0	20.5
9:00 AM	19	39	49	16	1	0	1	0	0	0	0	0	0	125	24.0	19.3
10:00 AM	10	52	74	30	0	0	0	0	0	0	0	0	0	166	25.0	20.6
11:00 AM	27	54	78	19	3	0	0	0	0	0	0	0	0	181	24.0	19.5
12:00 PM	26	54	66	18	2	1	0	0	0	0	0	0	0	167	24.0	19.3
1:00 PM	18	39	74	16	1	0	0	0	0	0	0	0	0	148	24.0	19.8
2:00 PM	19	61	41	20	2	1	0	0	0	0	0	0	0	144	25.0	19.3
3:00 PM	28	51	66	34	4	0	0	0	0	0	0	0	0	183	25.0	20.0
4:00 PM	28	72	98	24	1	1	0	0	0	0	0	0	0	224	24.0	19.7
5:00 PM	12	49	63	30	1	0	1	0	0	0	0	0	0	156	25.0	20.7
6:00 PM	10	44	65	30	2	0	0	0	0	0	0	0	0	151	26.0	21.3
7:00 PM	5	35	52	25	4	0	0	0	0	0	0	0	0	121	26.0	21.5
8:00 PM	5	21	29	15	4	0	0	0	0	0	0	0	0	74	27.1	21.7
9:00 PM	0	8	15	19	4	0	1	0	0	0	0	0	0	47	28.1	24.2
10:00 PM	0	5	9	5	4	0	0	0	0	0	0	0	0	23	29.7	24.1
11:00 PM	0	1	5	3	1	0	0	0	0	0	0	0	0	10	26.7	24.6
Total	229	667	939	414	77	10	3	0	0	0	0	0	0	2339	26.0	20.8
Percent	9.79%	28.52%	40.15%	17.70%	3.29%	0.43%	0.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	11:00 AM	11:00 AM	7:00 AM	6:00 AM	6:00 AM	9:00 AM							11:00 AM		
Volume	27	54	78	41	18	4	1	0	0	0	0	0	0	181		
PM Peak	3:00 PM	4:00 PM	4:00 PM	3:00 PM	3:00 PM	12:00 PM	5:00 PM							4:00 PM		
Volume	28	72	98	34	4	1	1	0	0	0	0	0	0	224		

15th Percentile:	16.0 MPH	Average Speed:	20.8 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	379
85th Percentile:	26.0 MPH	Number in Pace:	1639	Percent of Vehicles > 25 MPH:	16.2%
95th Percentile:	29.0 MPH	Percent in Pace:	70.1%		

Chapel Street north of
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Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Tuesday, January 23, 2024

Speed (60-minute)

Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	4	4	0	0	0	0	0	0	0	0	8	32.0	29.1
1:00 AM	0	0	1	3	4	0	0	0	1	0	0	0	0	9	32.8	31.6
2:00 AM	0	0	2	2	0	0	1	0	0	0	0	0	0	5	34.4	29.2
3:00 AM	0	1	1	1	2	1	0	0	0	0	0	0	0	6	34.8	28.8
4:00 AM	1	2	1	3	2	1	0	0	0	0	0	0	0	10	30.7	24.7
5:00 AM	3	3	9	20	22	3	0	0	0	2	0	0	0	62	33.0	28.2
6:00 AM	3	9	46	68	37	13	0	3	0	0	1	0	0	180	32.0	27.2
7:00 AM	22	74	119	102	42	9	3	0	1	0	0	0	0	372	29.0	23.4
8:00 AM	38	107	142	44	16	6	1	0	0	0	0	0	0	354	25.1	20.7
9:00 AM	43	106	97	37	18	4	2	0	0	0	0	0	0	307	26.0	20.1
10:00 AM	33	112	137	58	15	5	0	1	0	0	0	0	0	361	26.0	20.9
11:00 AM	43	120	150	43	16	2	1	0	0	0	0	0	0	375	25.0	20.3
12:00 PM	50	122	119	30	10	2	0	0	0	0	0	0	0	333	24.0	19.3
1:00 PM	44	93	152	51	16	2	2	0	0	0	0	0	0	360	25.0	20.6
2:00 PM	43	109	91	33	10	1	0	0	0	0	0	0	0	287	25.0	19.3
3:00 PM	46	104	120	52	23	8	0	0	0	0	0	0	0	353	26.0	20.9
4:00 PM	40	111	191	54	19	5	1	0	0	0	0	0	0	421	25.0	21.0
5:00 PM	21	97	134	66	23	8	1	1	0	0	0	0	0	351	27.0	22.0
6:00 PM	27	65	119	52	20	10	0	2	0	0	0	0	0	295	28.0	22.2
7:00 PM	11	44	96	56	28	10	0	0	0	0	0	0	0	245	30.0	23.6
8:00 PM	9	29	57	41	9	5	0	0	0	0	0	0	0	150	28.7	22.9
9:00 PM	2	12	30	34	14	1	1	0	0	0	0	0	0	94	30.0	24.7
10:00 PM	0	6	14	10	9	0	1	0	0	0	0	0	0	40	31.0	25.5
11:00 PM	2	2	6	10	7	4	0	0	0	0	0	0	0	31	32.5	27.2
Total	481	1328	1834	874	366	100	14	7	2	2	1	0	0	5009	27.0	21.6
Percent	9.60%	26.51%	36.61%	17.45%	7.31%	2.00%	0.28%	0.14%	0.04%	0.04%	0.02%	0.00%	0.00%			
AM Peak	9:00 AM	11:00 AM	11:00 AM	7:00 AM	7:00 AM	6:00 AM	7:00 AM	6:00 AM	1:00 AM	5:00 AM	6:00 AM			11:00 AM		
Volume	43	120	150	102	42	13	3	3	1	2	1	0	0	375		
PM Peak	12:00 PM	12:00 PM	4:00 PM	5:00 PM	7:00 PM	6:00 PM	1:00 PM	6:00 PM						4:00 PM		
Volume	50	122	191	66	28	10	2	2	0	0	0	0	0	421		

15th Percentile:	16.0 MPH	Average Speed:	21.6 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	1116
85th Percentile:	27.0 MPH	Number in Pace:	3229	Percent of Vehicles > 25 MPH:	22.3%
95th Percentile:	32.0 MPH	Percent in Pace:	64.5%		

Chapel Street north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Wednesday, January 24, 2024

Speed (60-minute)

NB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	1	4	0	0	0	0	0	0	0	0	0	5	27.4	26.4
1:00 AM	0	2	2	2	1	1	0	0	0	0	0	0	0	8	30.9	25.8
2:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	14.0	14.0
3:00 AM	0	1	2	3	0	0	0	0	0	0	0	0	0	6	29.0	24.8
4:00 AM	2	3	1	1	1	0	0	0	0	0	0	0	0	8	28.8	19.3
5:00 AM	3	10	11	9	4	0	0	0	0	0	0	0	0	37	28.0	22.3
6:00 AM	3	8	30	23	8	3	1	0	0	0	0	0	0	76	29.8	24.3
7:00 AM	12	33	76	47	14	5	3	0	0	0	0	0	0	190	28.0	23.0
8:00 AM	22	48	69	32	21	7	0	2	1	0	0	0	0	202	29.9	22.3
9:00 AM	18	53	64	26	7	8	2	0	0	0	0	0	0	178	26.5	21.6
10:00 AM	26	45	33	23	7	4	1	0	0	0	0	0	0	139	27.0	20.3
11:00 AM	17	41	60	27	12	6	1	1	0	0	0	0	0	165	28.0	22.1
12:00 PM	24	38	50	17	11	4	3	0	0	0	0	0	0	147	27.0	21.1
1:00 PM	21	49	63	20	17	6	1	0	0	0	0	0	0	177	28.0	21.4
2:00 PM	16	40	74	23	17	5	3	0	1	0	0	0	0	179	29.0	22.5
3:00 PM	10	32	72	39	22	5	1	0	0	0	0	0	0	181	30.0	23.4
4:00 PM	10	39	70	42	18	7	1	1	0	0	0	0	0	188	28.0	23.3
5:00 PM	13	49	61	29	18	8	0	0	0	0	0	0	0	178	28.5	22.4
6:00 PM	14	31	60	25	18	5	0	0	0	0	0	0	0	153	29.2	22.3
7:00 PM	9	20	45	28	8	4	1	0	0	0	0	0	0	115	28.0	22.7
8:00 PM	2	4	30	18	18	6	0	0	0	0	0	0	0	78	32.0	26.2
9:00 PM	1	4	11	27	9	8	0	0	0	0	0	0	0	60	34.0	27.2
10:00 PM	1	1	8	14	6	3	1	0	0	0	0	0	0	34	34.0	27.5
11:00 PM	0	2	5	7	7	2	0	0	0	0	0	0	0	23	32.0	27.4
Total	225	553	898	486	244	97	19	4	2	0	0	0	0	2528	29.0	22.7
Percent	8.90%	21.88%	35.52%	19.22%	9.65%	3.84%	0.75%	0.16%	0.08%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	9:00 AM	7:00 AM	7:00 AM	8:00 AM	9:00 AM	7:00 AM	8:00 AM	8:00 AM					8:00 AM		
Volume	26	53	76	47	21	8	3	2	1	0	0	0	0	202		
PM Peak	12:00 PM	1:00 PM	2:00 PM	4:00 PM	3:00 PM	5:00 PM	12:00 PM	4:00 PM	2:00 PM					4:00 PM		
Volume	24	49	74	42	22	8	3	1	1	0	0	0	0	188		

15th Percentile:	17.0 MPH	Average Speed:	22.7 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	688
85th Percentile:	29.0 MPH	Number in Pace:	1569	Percent of Vehicles > 25 MPH:	27.2%
95th Percentile:	34.0 MPH	Percent in Pace:	62.1%		

Chapel Street north of
Great Plain Avenue (Route 135)
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Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Wednesday, January 24, 2024

Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	3	21.5	18.7
1:00 AM	0	1	3	4	0	0	0	0	0	0	0	0	0	8	29.0	24.1
2:00 AM	1	0	3	0	0	0	0	0	0	0	0	0	0	4	23.0	19.8
3:00 AM	0	0	5	2	0	0	0	0	0	0	0	0	0	7	25.0	23.1
4:00 AM	2	1	1	0	0	0	0	0	0	0	0	0	0	4	19.4	16.0
5:00 AM	5	5	6	13	9	0	0	0	0	0	0	0	0	38	30.0	23.3
6:00 AM	5	10	18	23	5	1	0	0	0	0	0	0	0	62	28.0	23.3
7:00 AM	3	25	46	37	4	1	0	0	0	0	0	0	0	116	26.0	22.7
8:00 AM	14	31	44	10	4	0	0	0	0	0	0	0	0	103	24.0	20.0
9:00 AM	13	40	33	18	2	0	0	0	0	0	0	0	0	106	25.0	20.1
10:00 AM	10	28	36	11	3	0	0	0	0	0	0	0	0	88	25.0	20.4
11:00 AM	21	39	48	21	2	0	0	0	0	0	0	0	0	131	25.0	19.5
12:00 PM	15	46	53	10	3	0	0	0	0	0	0	0	0	127	24.0	19.5
1:00 PM	30	47	57	14	3	1	0	0	0	0	0	0	0	152	24.0	18.7
2:00 PM	24	67	71	27	7	0	0	0	0	0	0	0	0	196	25.0	20.2
3:00 PM	13	54	65	31	1	1	0	0	0	0	0	0	0	165	25.0	20.7
4:00 PM	17	56	87	43	7	0	1	0	0	0	0	0	0	211	25.0	21.2
5:00 PM	26	58	77	33	5	0	0	0	0	0	0	0	0	199	25.0	20.1
6:00 PM	9	49	62	13	3	0	0	0	0	0	0	0	0	136	24.0	20.3
7:00 PM	4	30	48	37	8	0	0	0	0	0	0	0	0	127	27.0	22.7
8:00 PM	1	18	37	39	5	1	0	0	0	0	0	0	0	101	28.0	23.6
9:00 PM	0	8	13	16	5	1	0	0	0	0	0	0	0	43	29.0	24.5
10:00 PM	0	1	9	8	4	1	0	0	0	0	0	0	0	23	30.7	25.6
11:00 PM	0	2	2	6	2	2	0	1	0	0	0	0	0	15	35.6	28.6
Total	213	618	825	416	82	9	1	1	0	0	0	0	0	2165	26.0	20.9
Percent	9.84%	28.55%	38.11%	19.21%	3.79%	0.42%	0.05%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	9:00 AM	11:00 AM	7:00 AM	5:00 AM	6:00 AM								11:00 AM		
Volume	21	40	48	37	9	1	0	0	0	0	0	0	0	131		
PM Peak	1:00 PM	2:00 PM	4:00 PM	4:00 PM	7:00 PM	11:00 PM	4:00 PM	11:00 PM						4:00 PM		
Volume	30	67	87	43	8	2	1	1	0	0	0	0	0	211		

15th Percentile:	16.0 MPH	Average Speed:	20.9 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	379
85th Percentile:	26.0 MPH	Number in Pace:	1491	Percent of Vehicles > 25 MPH:	17.5%
95th Percentile:	29.0 MPH	Percent in Pace:	68.9%		

Chapel Street north of
Great Plain Avenue (Route 135)
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Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Wednesday, January 24, 2024

Speed (60-minute)

Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	2	2	4	0	0	0	0	0	0	0	0	0	8	27.0	23.5
1:00 AM	0	3	5	6	1	1	0	0	0	0	0	0	0	16	29.0	24.9
2:00 AM	2	0	3	0	0	0	0	0	0	0	0	0	0	5	23.0	18.6
3:00 AM	0	1	7	5	0	0	0	0	0	0	0	0	0	13	28.2	23.9
4:00 AM	4	4	2	1	1	0	0	0	0	0	0	0	0	12	25.8	18.2
5:00 AM	8	15	17	22	13	0	0	0	0	0	0	0	0	75	30.0	22.8
6:00 AM	8	18	48	46	13	4	1	0	0	0	0	0	0	138	29.0	23.9
7:00 AM	15	58	122	84	18	6	3	0	0	0	0	0	0	306	27.0	22.9
8:00 AM	36	79	113	42	25	7	0	2	1	0	0	0	0	305	27.0	21.6
9:00 AM	31	93	97	44	9	8	2	0	0	0	0	0	0	284	26.0	21.0
10:00 AM	36	73	69	34	10	4	1	0	0	0	0	0	0	227	26.0	20.3
11:00 AM	38	80	108	48	14	6	1	1	0	0	0	0	0	296	26.0	21.0
12:00 PM	39	84	103	27	14	4	3	0	0	0	0	0	0	274	25.0	20.4
1:00 PM	51	96	120	34	20	7	1	0	0	0	0	0	0	329	26.0	20.1
2:00 PM	40	107	145	50	24	5	3	0	1	0	0	0	0	375	26.0	21.3
3:00 PM	23	86	137	70	23	6	1	0	0	0	0	0	0	346	27.0	22.1
4:00 PM	27	95	157	85	25	7	2	1	0	0	0	0	0	399	27.0	22.2
5:00 PM	39	107	138	62	23	8	0	0	0	0	0	0	0	377	27.0	21.2
6:00 PM	23	80	122	38	21	5	0	0	0	0	0	0	0	289	26.0	21.3
7:00 PM	13	50	93	65	16	4	1	0	0	0	0	0	0	242	28.0	22.7
8:00 PM	3	22	67	57	23	7	0	0	0	0	0	0	0	179	30.0	24.7
9:00 PM	1	12	24	43	14	9	0	0	0	0	0	0	0	103	31.7	26.1
10:00 PM	1	2	17	22	10	4	1	0	0	0	0	0	0	57	32.0	26.8
11:00 PM	0	4	7	13	9	4	0	1	0	0	0	0	0	38	32.5	27.9
Total	438	1171	1723	902	326	106	20	5	2	0	0	0	0	4693	27.0	21.9
Percent	9.33%	24.95%	36.71%	19.22%	6.95%	2.26%	0.43%	0.11%	0.04%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	9:00 AM	7:00 AM	7:00 AM	8:00 AM	9:00 AM	7:00 AM	8:00 AM	8:00 AM					7:00 AM		
Volume	38	93	122	84	25	8	3	2	1	0	0	0	0	306		
PM Peak	1:00 PM	2:00 PM	4:00 PM	4:00 PM	4:00 PM	9:00 PM	12:00 PM	4:00 PM	2:00 PM					4:00 PM		
Volume	51	107	157	85	25	9	3	1	1	0	0	0	0	399		

15th Percentile:	16.0 MPH	Average Speed:	21.9 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	1067
85th Percentile:	27.0 MPH	Number in Pace:	3045	Percent of Vehicles > 25 MPH:	22.7%
95th Percentile:	32.0 MPH	Percent in Pace:	64.9%		

Chapel Street north of
Great Plain Avenue (Route 135)
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157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Thursday, January 25, 2024

Speed (60-minute)

NB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	2	0	2	4	2	1	0	0	0	0	0	0	0	11	33.0	25.8
1:00 AM	0	0	0	2	1	0	0	0	0	0	0	0	0	3	32.5	29.3
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
4:00 AM	0	1	0	3	1	0	0	0	0	0	0	0	0	5	30.0	26.2
5:00 AM	3	2	4	11	13	2	0	0	2	0	0	0	0	37	33.0	28.1
6:00 AM	2	6	28	39	12	4	1	2	1	0	0	0	0	95	31.0	26.6
7:00 AM	16	38	59	46	17	15	2	1	0	0	0	0	0	194	31.1	23.7
8:00 AM	19	46	87	26	22	4	0	0	0	0	0	0	0	204	28.0	22.0
9:00 AM	17	54	77	31	21	6	2	1	0	0	0	0	0	209	29.0	22.2
10:00 AM	18	42	64	17	16	7	0	0	0	0	0	0	0	164	28.1	21.7
11:00 AM	25	48	60	26	12	5	0	0	0	0	0	0	0	176	26.0	20.9
12:00 PM	15	72	60	18	11	3	0	0	0	0	0	0	0	179	25.0	20.6
1:00 PM	14	59	66	31	17	1	0	0	0	0	0	0	0	188	27.0	21.7
2:00 PM	14	52	70	28	13	2	2	0	0	0	0	0	0	181	27.0	21.6
3:00 PM	10	28	25	4	3	0	0	0	0	0	0	0	0	70	23.0	19.2
4:00 PM	15	45	61	26	19	6	1	0	0	0	0	0	0	173	29.4	22.4
5:00 PM	19	34	64	21	17	6	0	0	0	0	0	0	0	161	29.0	21.9
6:00 PM	25	32	58	18	10	5	0	0	0	0	0	0	0	148	26.0	20.8
7:00 PM	13	23	58	25	15	7	1	0	0	0	0	0	0	142	30.0	23.1
8:00 PM	2	6	30	24	8	3	0	0	0	1	0	0	0	74	30.1	25.0
9:00 PM	0	2	18	20	8	1	0	0	0	0	0	0	0	49	30.0	25.7
10:00 PM	0	1	7	9	5	4	0	0	0	0	0	0	0	26	34.3	27.7
11:00 PM	0	0	2	7	3	2	0	0	0	0	0	0	0	14	32.2	28.9
Total	229	591	900	436	246	84	9	4	3	1	0	0	0	2503	29.0	22.4
Percent	9.15%	23.61%	35.96%	17.42%	9.83%	3.36%	0.36%	0.16%	0.12%	0.04%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	9:00 AM	8:00 AM	7:00 AM	8:00 AM	7:00 AM	7:00 AM	6:00 AM	5:00 AM					9:00 AM		
Volume	25	54	87	46	22	15	2	2	2	0	0	0	0	209		
PM Peak	6:00 PM	12:00 PM	2:00 PM	1:00 PM	4:00 PM	7:00 PM	2:00 PM			8:00 PM				1:00 PM		
Volume	25	72	70	31	19	7	2	0	0	1	0	0	0	188		

15th Percentile:	16.0 MPH	Average Speed:	22.4 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	18 to 27 MPH	Number of Vehicles > 25 MPH:	651
85th Percentile:	29.0 MPH	Number in Pace:	1558	Percent of Vehicles > 25 MPH:	26.0%
95th Percentile:	34.0 MPH	Percent in Pace:	62.2%		

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Count Date
Thursday, January 25, 2024

Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	1	0	2	2	0	0	0	0	0	0	0	0	5	31.6	27.4
1:00 AM	0	1	0	1	1	0	0	0	0	0	0	0	0	3	30.6	24.7
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	30.0	30.0
3:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	30.0	30.0
4:00 AM	0	1	0	2	0	0	0	0	0	0	0	0	0	3	29.0	24.3
5:00 AM	0	1	3	14	6	1	0	0	0	0	0	0	0	25	31.4	27.8
6:00 AM	0	8	29	36	16	1	0	0	0	0	0	0	0	90	30.0	25.5
7:00 AM	11	31	57	33	3	1	0	0	0	0	0	0	0	136	27.0	21.6
8:00 AM	14	49	65	27	4	0	0	0	0	0	0	0	0	159	25.0	20.6
9:00 AM	13	50	59	27	2	0	0	0	0	0	0	0	0	151	25.5	20.7
10:00 AM	6	47	75	23	1	0	0	0	0	0	0	0	0	152	25.0	20.8
11:00 AM	34	64	50	13	0	0	0	0	0	0	0	0	0	161	23.0	18.0
12:00 PM	27	66	65	13	0	1	0	0	0	0	0	0	0	172	23.0	18.8
1:00 PM	22	56	67	30	0	0	0	0	0	0	0	0	0	175	25.0	19.8
2:00 PM	21	41	43	12	2	1	0	0	0	0	0	0	0	120	24.0	19.2
3:00 PM	14	10	2	0	0	0	0	0	0	0	0	0	0	26	18.0	12.7
4:00 PM	19	51	54	19	3	0	0	0	0	0	0	0	0	146	24.3	19.6
5:00 PM	20	44	91	18	3	0	0	0	1	0	0	0	0	177	24.0	20.4
6:00 PM	18	33	27	11	2	0	0	0	0	0	0	0	0	91	24.0	19.1
7:00 PM	13	35	36	16	3	1	0	0	0	0	0	0	0	104	26.0	20.3
8:00 PM	14	27	35	24	8	0	0	0	0	0	0	0	0	108	27.0	21.2
9:00 PM	2	9	23	14	3	1	0	0	0	0	0	0	0	52	28.0	23.5
10:00 PM	2	4	14	12	4	2	0	0	0	0	0	0	0	38	29.9	24.2
11:00 PM	0	5	2	4	2	1	2	0	0	0	0	0	0	16	34.8	26.6
Total	250	634	797	351	67	10	2	0	1	0	0	0	0	2112	26.0	20.5
Percent	11.84%	30.02%	37.74%	16.62%	3.17%	0.47%	0.09%	0.00%	0.05%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	11:00 AM	10:00 AM	6:00 AM	6:00 AM	5:00 AM								11:00 AM		
Volume	34	64	75	36	16	1	0	0	0	0	0	0	0	161		
PM Peak	12:00 PM	12:00 PM	5:00 PM	1:00 PM	8:00 PM	10:00 PM	11:00 PM		5:00 PM					5:00 PM		
Volume	27	66	91	30	8	2	2	0	1	0	0	0	0	177		

15th Percentile:	15.0 MPH	Average Speed:	20.5 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	15 to 24 MPH	Number of Vehicles > 25 MPH:	356
85th Percentile:	26.0 MPH	Number in Pace:	1431	Percent of Vehicles > 25 MPH:	16.9%
95th Percentile:	29.0 MPH	Percent in Pace:	67.8%		

Chapel Street north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Thursday, January 25, 2024

Speed (60-minute)

Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	2	1	2	6	4	1	0	0	0	0	0	0	0	16	33.0	26.3
1:00 AM	0	1	0	3	2	0	0	0	0	0	0	0	0	6	33.3	27.0
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	30.0	30.0
3:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	30.0	30.0
4:00 AM	0	2	0	5	1	0	0	0	0	0	0	0	0	8	29.0	25.5
5:00 AM	3	3	7	25	19	3	0	0	2	0	0	0	0	62	32.0	27.9
6:00 AM	2	14	57	75	28	5	1	2	1	0	0	0	0	185	30.4	26.1
7:00 AM	27	69	116	79	20	16	2	1	0	0	0	0	0	330	28.0	22.8
8:00 AM	33	95	152	53	26	4	0	0	0	0	0	0	0	363	27.0	21.4
9:00 AM	30	104	136	58	23	6	2	1	0	0	0	0	0	360	27.0	21.6
10:00 AM	24	89	139	40	17	7	0	0	0	0	0	0	0	316	26.0	21.3
11:00 AM	59	112	110	39	12	5	0	0	0	0	0	0	0	337	25.0	19.6
12:00 PM	42	138	125	31	11	4	0	0	0	0	0	0	0	351	24.0	19.7
1:00 PM	36	115	133	61	17	1	0	0	0	0	0	0	0	363	26.0	20.8
2:00 PM	35	93	113	40	15	3	2	0	0	0	0	0	0	301	26.0	20.7
3:00 PM	24	38	27	4	3	0	0	0	0	0	0	0	0	96	22.0	17.5
4:00 PM	34	96	115	45	22	6	1	0	0	0	0	0	0	319	26.0	21.1
5:00 PM	39	78	155	39	20	6	0	0	1	0	0	0	0	338	26.0	21.1
6:00 PM	43	65	85	29	12	5	0	0	0	0	0	0	0	239	26.0	20.1
7:00 PM	26	58	94	41	18	8	1	0	0	0	0	0	0	246	27.3	21.9
8:00 PM	16	33	65	48	16	3	0	0	0	1	0	0	0	182	28.0	22.7
9:00 PM	2	11	41	34	11	2	0	0	0	0	0	0	0	101	29.0	24.5
10:00 PM	2	5	21	21	9	6	0	0	0	0	0	0	0	64	32.0	25.6
11:00 PM	0	5	4	11	5	3	2	0	0	0	0	0	0	30	34.7	27.6
Total	479	1225	1697	787	313	94	11	4	4	1	0	0	0	4615	27.0	21.5
Percent	10.38%	26.54%	36.77%	17.05%	6.78%	2.04%	0.24%	0.09%	0.09%	0.02%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	11:00 AM	8:00 AM	7:00 AM	6:00 AM	7:00 AM	7:00 AM	6:00 AM	5:00 AM					8:00 AM		
Volume	59	112	152	79	28	16	2	2	2	0	0	0	0	363		
PM Peak	6:00 PM	12:00 PM	5:00 PM	1:00 PM	4:00 PM	7:00 PM	2:00 PM		5:00 PM	8:00 PM				1:00 PM		
Volume	43	138	155	61	22	8	2	0	1	1	0	0	0	363		

15th Percentile:	16.0 MPH	Average Speed:	21.5 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	1007
85th Percentile:	27.0 MPH	Number in Pace:	2958	Percent of Vehicles > 25 MPH:	21.8%
95th Percentile:	32.0 MPH	Percent in Pace:	64.1%		

Chapel Street north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Friday, January 26, 2024

Speed (60-minute)

NB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	1	3	1	2	0	0	0	0	0	0	0	7	36.1	30.1
1:00 AM	0	0	2	4	0	1	0	2	0	1	0	0	0	10	46.0	33.7
2:00 AM	0	2	1	0	3	2	0	0	0	0	1	0	0	9	37.8	32.1
3:00 AM	0	1	0	2	0	0	0	0	0	0	0	0	0	3	27.0	24.0
4:00 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	3	29.0	28.7
5:00 AM	0	1	2	13	5	1	0	0	3	0	0	0	0	25	34.6	30.6
6:00 AM	2	15	22	23	7	3	1	0	1	0	0	0	0	74	30.0	24.2
7:00 AM	19	34	53	37	13	3	1	0	1	0	0	0	0	161	28.0	22.1
8:00 AM	28	70	63	27	7	2	0	0	0	0	0	0	0	197	25.0	20.0
9:00 AM	25	56	55	20	8	1	0	0	0	0	0	0	0	165	25.0	19.8
10:00 AM	16	59	46	13	7	0	1	0	0	0	0	0	0	142	24.0	19.5
11:00 AM	21	52	72	19	6	1	0	0	0	0	0	0	0	171	24.5	20.2
12:00 PM	31	59	34	10	4	1	0	0	0	0	1	0	0	140	24.0	18.7
1:00 PM	13	63	65	21	8	0	0	0	1	0	0	0	0	171	25.0	20.5
2:00 PM	24	44	60	27	6	1	0	0	0	0	0	0	0	162	25.9	20.1
3:00 PM	19	40	49	12	0	2	0	0	0	0	0	0	0	122	24.0	19.5
4:00 PM	10	47	63	26	11	0	0	0	0	0	0	0	0	157	26.0	21.1
5:00 PM	31	45	58	9	6	0	2	0	0	0	0	0	0	151	24.0	19.3
6:00 PM	21	36	61	23	5	3	0	1	0	0	0	0	0	150	25.0	20.9
7:00 PM	13	41	59	12	8	2	0	1	0	0	0	0	0	136	26.0	20.9
8:00 PM	6	9	29	18	3	1	0	0	0	0	0	0	0	66	27.0	22.7
9:00 PM	0	5	24	28	10	0	0	0	0	0	0	0	0	67	29.1	25.1
10:00 PM	1	3	7	10	5	0	1	0	0	0	0	0	0	27	31.0	25.4
11:00 PM	1	1	3	7	8	1	1	0	0	0	0	0	0	22	32.9	28.3
Total	281	683	829	367	131	27	7	4	6	1	2	0	0	2338	26.0	21.0
Percent	12.02%	29.21%	35.46%	15.70%	5.60%	1.15%	0.30%	0.17%	0.26%	0.04%	0.09%	0.00%	0.00%			
AM Peak	8:00 AM	8:00 AM	11:00 AM	7:00 AM	7:00 AM	6:00 AM	6:00 AM	1:00 AM	5:00 AM	1:00 AM	2:00 AM			8:00 AM		
Volume	28	70	72	37	13	3	1	2	3	1	1	0	0	197		
PM Peak	12:00 PM	1:00 PM	1:00 PM	9:00 PM	4:00 PM	6:00 PM	5:00 PM	6:00 PM	1:00 PM		12:00 PM			1:00 PM		
Volume	31	63	65	28	11	3	2	1	1	0	1	0	0	171		

15th Percentile:	15.0 MPH	Average Speed:	21.0 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	15 to 24 MPH	Number of Vehicles > 25 MPH:	431
85th Percentile:	26.0 MPH	Number in Pace:	1512	Percent of Vehicles > 25 MPH:	18.4%
95th Percentile:	31.0 MPH	Percent in Pace:	64.7%		

Chapel Street north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Friday, January 26, 2024

Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	1	2	5	0	1	0	0	0	0	0	0	0	9	28.0	25.7
1:00 AM	0	1	3	3	0	0	0	0	0	0	0	0	0	7	28.0	23.7
2:00 AM	0	1	0	2	1	0	0	0	0	0	0	0	0	4	29.6	26.3
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	3	19.4	18.3
4:00 AM	1	0	3	3	0	0	0	0	0	0	0	0	0	7	27.0	22.9
5:00 AM	0	0	7	18	6	0	0	0	0	0	0	0	0	31	30.0	26.9
6:00 AM	2	10	21	26	11	1	0	0	0	0	0	0	0	71	30.0	24.6
7:00 AM	10	35	49	23	2	0	0	0	0	0	0	0	0	119	25.0	20.6
8:00 AM	19	29	28	8	1	0	0	0	0	0	0	0	0	85	23.0	18.3
9:00 AM	10	38	40	9	3	0	0	0	0	0	0	0	0	100	24.0	19.9
10:00 AM	3	24	20	4	1	0	1	0	0	0	0	0	0	53	23.2	20.0
11:00 AM	17	43	50	12	3	0	0	0	0	0	0	0	0	125	24.0	19.4
12:00 PM	27	43	35	15	1	1	0	0	0	0	0	0	0	122	24.0	18.6
1:00 PM	29	51	37	13	1	0	0	0	0	0	0	0	0	131	23.5	18.2
2:00 PM	30	62	63	9	1	0	0	0	0	0	0	0	0	165	23.0	18.6
3:00 PM	20	35	32	5	2	0	0	0	0	0	0	0	0	94	24.0	18.2
4:00 PM	18	54	58	24	1	1	1	0	0	0	0	0	0	157	25.0	20.1
5:00 PM	16	42	44	9	0	2	0	0	0	0	0	0	0	113	23.0	19.0
6:00 PM	11	40	32	13	3	0	0	0	0	0	0	0	0	99	25.0	19.7
7:00 PM	21	43	45	18	1	0	0	0	0	0	0	0	0	128	24.0	19.4
8:00 PM	6	29	42	18	3	0	0	0	0	0	0	0	0	98	25.0	21.1
9:00 PM	0	12	28	19	5	1	0	0	0	0	0	0	0	65	28.0	23.8
10:00 PM	2	16	7	14	3	1	0	0	0	0	0	0	0	43	28.7	22.5
11:00 PM	0	1	7	6	8	2	0	0	0	0	0	0	0	24	32.6	27.6
Total	242	612	654	276	57	10	2	0	0	0	0	0	0	1853	25.0	20.1
Percent	13.06%	33.03%	35.29%	14.89%	3.08%	0.54%	0.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	11:00 AM	11:00 AM	6:00 AM	6:00 AM	12:00 AM	10:00 AM							11:00 AM		
Volume	19	43	50	26	11	1	1	0	0	0	0	0	0	125		
PM Peak	2:00 PM	2:00 PM	2:00 PM	4:00 PM	11:00 PM	5:00 PM	4:00 PM							2:00 PM		
Volume	30	62	63	24	8	2	1	0	0	0	0	0	0	165		

15th Percentile:	15.0 MPH	Average Speed:	20.1 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	20.0 MPH	10 MPH Pace:	15 to 24 MPH	Number of Vehicles > 25 MPH:	262
85th Percentile:	25.0 MPH	Number in Pace:	1266	Percent of Vehicles > 25 MPH:	14.1%
95th Percentile:	29.0 MPH	Percent in Pace:	68.3%		

Chapel Street north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Friday, January 26, 2024

Speed (60-minute)

Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	1	3	8	1	3	0	0	0	0	0	0	0	16	34.0	27.6
1:00 AM	0	1	5	7	0	1	0	2	0	1	0	0	0	17	42.0	29.6
2:00 AM	0	3	1	2	4	2	0	0	0	0	1	0	0	13	37.2	30.3
3:00 AM	0	3	1	2	0	0	0	0	0	0	0	0	0	6	27.0	21.2
4:00 AM	1	0	3	6	0	0	0	0	0	0	0	0	0	10	28.7	24.6
5:00 AM	0	1	9	31	11	1	0	0	3	0	0	0	0	56	31.0	28.6
6:00 AM	4	25	43	49	18	4	1	0	1	0	0	0	0	145	30.0	24.4
7:00 AM	29	69	102	60	15	3	1	0	1	0	0	0	0	280	27.0	21.5
8:00 AM	47	99	91	35	8	2	0	0	0	0	0	0	0	282	25.0	19.5
9:00 AM	35	94	95	29	11	1	0	0	0	0	0	0	0	265	25.0	19.9
10:00 AM	19	83	66	17	8	0	2	0	0	0	0	0	0	195	24.0	19.6
11:00 AM	38	95	122	31	9	1	0	0	0	0	0	0	0	296	24.0	19.9
12:00 PM	58	102	69	25	5	2	0	0	0	0	1	0	0	262	24.0	18.7
1:00 PM	42	114	102	34	9	0	0	0	1	0	0	0	0	302	24.0	19.5
2:00 PM	54	106	123	36	7	1	0	0	0	0	0	0	0	327	24.0	19.3
3:00 PM	39	75	81	17	2	2	0	0	0	0	0	0	0	216	24.0	18.9
4:00 PM	28	101	121	50	12	1	1	0	0	0	0	0	0	314	26.0	20.6
5:00 PM	47	87	102	18	6	2	2	0	0	0	0	0	0	264	23.6	19.1
6:00 PM	32	76	93	36	8	3	0	1	0	0	0	0	0	249	25.0	20.4
7:00 PM	34	84	104	30	9	2	0	1	0	0	0	0	0	264	25.0	20.2
8:00 PM	12	38	71	36	6	1	0	0	0	0	0	0	0	164	26.0	21.7
9:00 PM	0	17	52	47	15	1	0	0	0	0	0	0	0	132	29.0	24.5
10:00 PM	3	19	14	24	8	1	1	0	0	0	0	0	0	70	29.0	23.6
11:00 PM	1	2	10	13	16	3	1	0	0	0	0	0	0	46	33.0	27.9
Total	523	1295	1483	643	188	37	9	4	6	1	2	0	0	4191	26.0	20.6
Percent	12.48%	30.90%	35.39%	15.34%	4.49%	0.88%	0.21%	0.10%	0.14%	0.02%	0.05%	0.00%	0.00%			
AM Peak	8:00 AM	8:00 AM	11:00 AM	7:00 AM	6:00 AM	6:00 AM	10:00 AM	1:00 AM	5:00 AM	1:00 AM	2:00 AM			11:00 AM		
Volume	47	99	122	60	18	4	2	2	3	1	1	0	0	296		
PM Peak	12:00 PM	1:00 PM	2:00 PM	4:00 PM	11:00 PM	6:00 PM	5:00 PM	6:00 PM	1:00 PM		12:00 PM			2:00 PM		
Volume	58	114	123	50	16	3	2	1	1	0	1	0	0	327		

15th Percentile:	15.0 MPH	Average Speed:	20.6 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	20.0 MPH	10 MPH Pace:	15 to 24 MPH	Number of Vehicles > 25 MPH:	1007
85th Percentile:	26.0 MPH	Number in Pace:	2778	Percent of Vehicles > 25 MPH:	24.0%
95th Percentile:	30.0 MPH	Percent in Pace:	66.3%		

Chapel Street north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Saturday, January 27, 2024

Speed (60-minute)

NB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	1	1	7	4	1	0	0	0	0	0	0	0	15	30.9	26.6
1:00 AM	0	0	1	2	4	0	0	0	0	0	0	0	0	7	32.1	29.9
2:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28.0	28.0
3:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	3	28.2	25.7
4:00 AM	0	0	2	0	1	2	1	0	0	0	0	0	0	6	38.3	31.0
5:00 AM	0	1	2	4	4	0	0	0	0	0	0	0	0	11	31.0	27.1
6:00 AM	0	2	9	9	5	0	1	0	1	0	0	0	0	27	32.1	27.1
7:00 AM	6	12	17	24	8	3	2	0	0	0	0	0	0	72	30.0	24.1
8:00 AM	13	36	59	24	3	1	0	0	0	0	0	0	0	136	26.0	21.1
9:00 AM	11	38	52	19	7	1	0	0	0	0	0	0	0	128	25.0	20.8
10:00 AM	37	72	62	22	4	0	0	0	0	0	0	0	0	197	24.0	18.9
11:00 AM	45	63	38	23	9	0	1	0	0	0	0	0	0	179	25.0	18.6
12:00 PM	34	53	59	11	4	3	0	0	0	0	0	0	0	164	24.0	19.0
1:00 PM	32	45	64	24	19	4	0	0	0	0	0	0	0	188	27.0	20.9
2:00 PM	29	43	47	14	11	3	1	0	0	0	0	0	0	148	26.0	19.8
3:00 PM	12	31	76	31	15	5	0	0	0	0	0	0	0	170	29.0	22.7
4:00 PM	7	26	49	33	15	10	0	0	0	0	0	0	0	140	31.2	23.9
5:00 PM	12	31	59	22	18	5	0	0	0	0	0	0	0	147	30.0	22.8
6:00 PM	17	34	45	22	11	3	1	0	0	0	0	0	0	133	27.2	21.4
7:00 PM	13	33	24	16	12	1	1	0	0	0	0	0	0	100	29.0	21.3
8:00 PM	3	12	33	9	10	3	0	0	0	0	0	0	0	70	31.0	23.6
9:00 PM	6	9	27	18	7	1	0	0	0	0	0	0	0	68	29.0	23.2
10:00 PM	0	3	8	15	4	6	1	0	0	0	0	0	0	37	35.0	27.6
11:00 PM	1	3	3	11	13	3	0	1	0	0	0	0	0	35	33.0	28.3
Total	279	548	739	361	189	55	9	1	1	0	0	0	0	2182	28.0	21.5
Percent	12.79%	25.11%	33.87%	16.54%	8.66%	2.52%	0.41%	0.05%	0.05%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	10:00 AM	10:00 AM	7:00 AM	11:00 AM	7:00 AM	7:00 AM		6:00 AM					10:00 AM		
Volume	45	72	62	24	9	3	2	0	1	0	0	0	0	197		
PM Peak	12:00 PM	12:00 PM	3:00 PM	4:00 PM	1:00 PM	4:00 PM	2:00 PM	11:00 PM						1:00 PM		
Volume	34	53	76	33	19	10	1	1	0	0	0	0	0	188		

15th Percentile:	15.0 MPH	Average Speed:	21.5 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	519
85th Percentile:	28.0 MPH	Number in Pace:	1303	Percent of Vehicles > 25 MPH:	23.8%
95th Percentile:	33.0 MPH	Percent in Pace:	59.7%		

Chapel Street north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Saturday, January 27, 2024

Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	4	1	1	2	1	0	0	0	0	0	0	0	9	32.8	24.1
1:00 AM	0	1	1	2	3	0	0	0	0	0	0	0	0	7	33.1	27.1
2:00 AM	0	0	0	2	3	0	0	0	0	0	0	0	0	5	30.4	28.4
3:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	2	27.7	27.0
4:00 AM	1	0	0	3	0	0	0	0	0	0	0	0	0	4	28.0	23.3
5:00 AM	0	0	2	3	3	0	0	0	0	0	0	0	0	8	32.0	27.9
6:00 AM	0	3	8	9	11	0	0	0	0	0	0	0	0	31	31.0	26.4
7:00 AM	3	9	25	27	6	2	0	0	0	0	0	0	0	72	29.0	24.0
8:00 AM	2	21	39	13	5	0	0	0	0	0	0	0	0	80	25.2	22.0
9:00 AM	17	46	47	14	3	0	0	0	0	0	0	0	0	127	24.0	19.3
10:00 AM	15	43	38	8	1	1	1	0	0	0	0	0	0	107	23.1	19.1
11:00 AM	33	32	34	6	1	1	0	0	0	0	0	0	0	107	22.0	17.8
12:00 PM	26	66	36	11	1	0	0	0	0	0	0	0	0	140	22.0	18.0
1:00 PM	19	51	37	16	0	2	0	0	0	0	0	0	0	125	24.0	19.3
2:00 PM	12	44	41	9	0	0	1	0	0	0	0	0	0	107	24.0	19.3
3:00 PM	9	44	76	35	3	0	0	0	0	0	0	0	0	167	25.0	21.3
4:00 PM	21	27	56	32	9	0	0	0	0	0	0	0	0	145	26.0	21.4
5:00 PM	9	34	57	23	4	0	0	0	0	0	0	0	0	127	26.0	21.0
6:00 PM	11	42	37	13	1	1	0	0	0	0	0	0	0	105	24.0	19.7
7:00 PM	5	29	22	11	2	1	1	0	0	0	0	0	0	71	26.0	20.7
8:00 PM	3	11	17	5	1	0	0	0	0	0	0	0	0	37	25.8	20.8
9:00 PM	5	8	17	16	8	1	0	0	0	0	0	0	0	55	29.9	23.9
10:00 PM	0	14	23	17	9	1	0	0	0	0	0	0	0	64	29.6	24.0
11:00 PM	0	1	2	12	8	1	0	0	0	0	0	0	0	24	32.0	28.3
Total	191	530	616	290	84	12	3	0	0	0	0	0	0	1726	26.0	20.7
Percent	11.07%	30.71%	35.69%	16.80%	4.87%	0.70%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	9:00 AM	9:00 AM	7:00 AM	6:00 AM	7:00 AM	10:00 AM							9:00 AM		
Volume	33	46	47	27	11	2	1	0	0	0	0	0	0	127		
PM Peak	12:00 PM	12:00 PM	3:00 PM	3:00 PM	4:00 PM	1:00 PM	2:00 PM							3:00 PM		
Volume	26	66	76	35	9	2	1	0	0	0	0	0	0	167		

15th Percentile:	15.0 MPH	Average Speed:	20.7 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	15 to 24 MPH	Number of Vehicles > 25 MPH:	308
85th Percentile:	26.0 MPH	Number in Pace:	1146	Percent of Vehicles > 25 MPH:	17.8%
95th Percentile:	30.0 MPH	Percent in Pace:	66.4%		

Chapel Street north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Saturday, January 27, 2024

Speed (60-minute)

Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	5	2	8	6	2	0	0	0	0	0	0	0	24	31.6	25.7
1:00 AM	0	1	2	4	7	0	0	0	0	0	0	0	0	14	33.0	28.5
2:00 AM	0	0	0	3	3	0	0	0	0	0	0	0	0	6	30.3	28.3
3:00 AM	0	0	2	2	1	0	0	0	0	0	0	0	0	5	28.8	26.2
4:00 AM	1	0	2	3	1	2	1	0	0	0	0	0	0	10	36.3	27.9
5:00 AM	0	1	4	7	7	0	0	0	0	0	0	0	0	19	31.3	27.4
6:00 AM	0	5	17	18	16	0	1	0	1	0	0	0	0	58	31.5	26.8
7:00 AM	9	21	42	51	14	5	2	0	0	0	0	0	0	144	29.0	24.0
8:00 AM	15	57	98	37	8	1	0	0	0	0	0	0	0	216	26.0	21.4
9:00 AM	28	84	99	33	10	1	0	0	0	0	0	0	0	255	25.0	20.1
10:00 AM	52	115	100	30	5	1	1	0	0	0	0	0	0	304	24.0	19.0
11:00 AM	78	95	72	29	10	1	1	0	0	0	0	0	0	286	24.0	18.3
12:00 PM	60	119	95	22	5	3	0	0	0	0	0	0	0	304	23.0	18.6
1:00 PM	51	96	101	40	19	6	0	0	0	0	0	0	0	313	26.0	20.3
2:00 PM	41	87	88	23	11	3	2	0	0	0	0	0	0	255	24.9	19.6
3:00 PM	21	75	152	66	18	5	0	0	0	0	0	0	0	337	27.0	22.0
4:00 PM	28	53	105	65	24	10	0	0	0	0	0	0	0	285	28.0	22.6
5:00 PM	21	65	116	45	22	5	0	0	0	0	0	0	0	274	27.0	22.0
6:00 PM	28	76	82	35	12	4	1	0	0	0	0	0	0	238	26.0	20.6
7:00 PM	18	62	46	27	14	2	2	0	0	0	0	0	0	171	27.5	21.0
8:00 PM	6	23	50	14	11	3	0	0	0	0	0	0	0	107	28.1	22.6
9:00 PM	11	17	44	34	15	2	0	0	0	0	0	0	0	123	29.0	23.5
10:00 PM	0	17	31	32	13	7	1	0	0	0	0	0	0	101	31.0	25.3
11:00 PM	1	4	5	23	21	4	0	1	0	0	0	0	0	59	33.0	28.3
Total	470	1078	1355	651	273	67	12	1	1	0	0	0	0	3908	27.0	21.2
Percent	12.03%	27.58%	34.67%	16.66%	6.99%	1.71%	0.31%	0.03%	0.03%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	10:00 AM	10:00 AM	7:00 AM	6:00 AM	7:00 AM	7:00 AM		6:00 AM					10:00 AM		
Volume	78	115	100	51	16	5	2	0	1	0	0	0	0	304		
PM Peak	12:00 PM	12:00 PM	3:00 PM	3:00 PM	4:00 PM	4:00 PM	2:00 PM	11:00 PM						3:00 PM		
Volume	60	119	152	66	24	10	2	1	0	0	0	0	0	337		

15th Percentile:	15.0 MPH	Average Speed:	21.2 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	1007
85th Percentile:	27.0 MPH	Number in Pace:	2446	Percent of Vehicles > 25 MPH:	25.8%
95th Percentile:	32.0 MPH	Percent in Pace:	62.6%		

Chapel Street north of
Great Plain Avenue (Route 135)
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Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Sunday, January 28, 2024

Speed (60-minute)

NB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	2	8	9	2	0	0	0	0	0	0	0	21	32.0	29.0
1:00 AM	1	0	2	2	0	0	0	0	0	0	0	0	0	5	26.0	22.8
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
3:00 AM	0	0	1	0	1	2	0	0	0	0	0	0	0	4	36.6	31.5
4:00 AM	0	1	2	1	0	1	0	0	0	0	0	0	0	5	31.6	25.2
5:00 AM	0	0	0	2	3	0	0	0	0	0	0	0	0	5	31.4	29.2
6:00 AM	1	2	4	8	7	4	1	0	0	0	0	0	0	27	36.0	28.4
7:00 AM	1	4	14	15	9	1	0	0	1	0	0	0	0	45	31.0	26.6
8:00 AM	7	22	28	18	16	2	0	0	0	0	0	0	0	93	31.0	23.0
9:00 AM	15	15	43	20	15	3	2	0	0	0	0	0	0	113	30.2	22.6
10:00 AM	13	29	53	18	14	3	0	0	0	0	0	0	0	130	28.0	22.0
11:00 AM	12	39	41	17	8	2	0	0	0	0	0	0	0	119	26.0	20.8
12:00 PM	11	38	47	19	14	1	0	0	0	0	0	0	0	130	28.0	21.8
1:00 PM	8	27	49	29	21	4	0	0	0	0	0	0	0	138	30.0	23.4
2:00 PM	6	20	40	35	9	1	0	0	0	0	0	0	0	111	28.0	23.2
3:00 PM	3	10	35	53	15	2	0	0	0	0	0	0	0	118	29.0	25.1
4:00 PM	3	10	31	31	7	1	0	0	0	0	0	0	0	83	28.0	23.8
5:00 PM	9	13	31	20	5	1	0	0	0	0	0	0	0	79	27.0	22.4
6:00 PM	5	15	45	17	5	0	0	0	0	0	0	0	0	87	26.1	22.2
7:00 PM	0	13	18	18	10	2	0	0	0	0	0	0	0	61	31.0	24.6
8:00 PM	0	4	15	8	9	0	0	0	0	0	0	0	0	36	31.0	25.0
9:00 PM	0	4	9	12	3	1	0	0	0	0	0	0	0	29	28.0	24.7
10:00 PM	0	1	6	4	1	0	0	0	0	0	0	0	0	12	27.0	23.8
11:00 PM	0	2	2	7	1	0	0	0	0	0	0	0	0	12	27.7	24.5
Total	95	269	518	362	182	33	3	0	1	0	0	0	0	1463	29.0	23.3
Percent	6.49%	18.39%	35.41%	24.74%	12.44%	2.26%	0.21%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%			
AM Peak	9:00 AM	11:00 AM	10:00 AM	9:00 AM	8:00 AM	6:00 AM	9:00 AM		7:00 AM					10:00 AM		
Volume	15	39	53	20	16	4	2	0	1	0	0	0	0	130		
PM Peak	12:00 PM	12:00 PM	1:00 PM	3:00 PM	1:00 PM	1:00 PM								1:00 PM		
Volume	11	38	49	53	21	4	0	0	0	0	0	0	0	138		

15th Percentile:	17.0 MPH	Average Speed:	23.3 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	23.0 MPH	10 MPH Pace:	19 to 28 MPH	Number of Vehicles > 25 MPH:	489
85th Percentile:	29.0 MPH	Number in Pace:	913	Percent of Vehicles > 25 MPH:	33.4%
95th Percentile:	33.0 MPH	Percent in Pace:	62.4%		

Chapel Street north of
Great Plain Avenue (Route 135)
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Client: Nitsch/ B. Zimolka
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PRECISION DATA INDUSTRIES, LLC
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Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Sunday, January 28, 2024

Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	1	3	9	3	0	0	0	0	0	0	0	0	16	29.5	26.5
1:00 AM	0	0	3	2	0	1	0	0	0	0	0	0	0	6	30.8	26.0
2:00 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	4	32.1	29.3
3:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	2	34.1	29.5
4:00 AM	0	0	0	4	1	0	0	0	0	0	0	0	0	5	29.6	28.4
5:00 AM	0	1	2	1	2	1	0	0	0	0	0	0	0	7	34.1	26.9
6:00 AM	0	2	7	8	5	0	0	0	0	0	0	0	0	22	31.0	25.6
7:00 AM	1	8	12	16	13	1	0	0	0	0	0	0	0	51	31.0	25.6
8:00 AM	19	19	32	9	5	0	0	0	0	0	0	0	0	84	25.0	19.5
9:00 AM	7	20	21	12	2	0	0	0	0	0	0	0	0	62	25.0	20.5
10:00 AM	12	28	41	23	4	0	0	0	0	0	0	0	0	108	25.0	20.9
11:00 AM	3	24	40	15	3	0	0	0	0	0	0	0	0	85	25.4	21.3
12:00 PM	14	48	40	22	4	1	0	0	0	0	0	0	0	129	25.0	20.4
1:00 PM	5	15	53	20	6	0	0	0	0	0	0	0	0	99	26.0	22.2
2:00 PM	6	17	41	26	4	2	0	0	0	0	0	0	0	96	27.0	22.3
3:00 PM	2	11	53	49	7	1	0	0	0	0	0	0	0	123	28.0	24.3
4:00 PM	1	7	27	40	10	0	0	0	0	0	0	0	0	85	28.4	25.1
5:00 PM	4	20	34	29	4	0	0	0	0	0	0	0	0	91	27.0	22.4
6:00 PM	9	19	45	19	1	1	0	0	0	0	0	0	0	94	26.0	21.2
7:00 PM	6	17	32	12	3	1	0	0	0	0	0	0	0	71	25.0	21.4
8:00 PM	2	11	16	21	2	1	0	0	0	0	0	0	0	53	28.0	23.1
9:00 PM	0	2	10	5	2	0	0	0	0	0	0	0	0	19	28.3	24.3
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
11:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	29.4	28.0
Total	91	270	513	345	84	11	0	0	0	0	0	0	0	1314	28.0	22.3
Percent	6.93%	20.55%	39.04%	26.26%	6.39%	0.84%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	10:00 AM	10:00 AM	10:00 AM	7:00 AM	1:00 AM								10:00 AM		
Volume	19	28	41	23	13	1	0	0	0	0	0	0	0	108		
PM Peak	12:00 PM	12:00 PM	1:00 PM	3:00 PM	4:00 PM	2:00 PM								12:00 PM		
Volume	14	48	53	49	10	2	0	0	0	0	0	0	0	129		

15th Percentile:	17.0 MPH	Average Speed:	22.3 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	23.0 MPH	10 MPH Pace:	18 to 27 MPH	Number of Vehicles > 25 MPH:	345
85th Percentile:	28.0 MPH	Number in Pace:	895	Percent of Vehicles > 25 MPH:	26.3%
95th Percentile:	31.0 MPH	Percent in Pace:	68.1%		

Chapel Street north of
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PDI File #: 239698 ATR-C (Speed)

Count Date
Sunday, January 28, 2024

Speed (60-minute)

Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	1	5	17	12	2	0	0	0	0	0	0	0	37	31.6	27.9
1:00 AM	1	0	5	4	0	1	0	0	0	0	0	0	0	11	28.5	24.5
2:00 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	4	32.1	29.3
3:00 AM	0	0	2	0	1	3	0	0	0	0	0	0	0	6	36.3	30.8
4:00 AM	0	1	2	5	1	1	0	0	0	0	0	0	0	10	30.6	26.8
5:00 AM	0	1	2	3	5	1	0	0	0	0	0	0	0	12	32.7	27.8
6:00 AM	1	4	11	16	12	4	1	0	0	0	0	0	0	49	33.0	27.2
7:00 AM	2	12	26	31	22	2	0	0	1	0	0	0	0	96	31.0	26.1
8:00 AM	26	41	60	27	21	2	0	0	0	0	0	0	0	177	27.6	21.3
9:00 AM	22	35	64	32	17	3	2	0	0	0	0	0	0	175	28.0	21.9
10:00 AM	25	57	94	41	18	3	0	0	0	0	0	0	0	238	27.0	21.5
11:00 AM	15	63	81	32	11	2	0	0	0	0	0	0	0	204	26.0	21.0
12:00 PM	25	86	87	41	18	2	0	0	0	0	0	0	0	259	27.0	21.1
1:00 PM	13	42	102	49	27	4	0	0	0	0	0	0	0	237	28.0	22.9
2:00 PM	12	37	81	61	13	3	0	0	0	0	0	0	0	207	27.1	22.8
3:00 PM	5	21	88	102	22	3	0	0	0	0	0	0	0	241	29.0	24.7
4:00 PM	4	17	58	71	17	1	0	0	0	0	0	0	0	168	28.0	24.5
5:00 PM	13	33	65	49	9	1	0	0	0	0	0	0	0	170	27.0	22.4
6:00 PM	14	34	90	36	6	1	0	0	0	0	0	0	0	181	26.0	21.7
7:00 PM	6	30	50	30	13	3	0	0	0	0	0	0	0	132	27.4	22.9
8:00 PM	2	15	31	29	11	1	0	0	0	0	0	0	0	89	29.0	23.9
9:00 PM	0	6	19	17	5	1	0	0	0	0	0	0	0	48	28.0	24.5
10:00 PM	0	1	6	4	1	0	0	0	0	0	0	0	0	12	27.0	23.8
11:00 PM	0	2	2	8	2	0	0	0	0	0	0	0	0	14	29.1	25.0
Total	186	539	1031	707	266	44	3	0	1	0	0	0	0	2777	28.0	22.8
Percent	6.70%	19.41%	37.13%	25.46%	9.58%	1.58%	0.11%	0.00%	0.04%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	11:00 AM	10:00 AM	10:00 AM	7:00 AM	6:00 AM	9:00 AM		7:00 AM					10:00 AM		
Volume	26	63	94	41	22	4	2	0	1	0	0	0	0	238		
PM Peak	12:00 PM	12:00 PM	1:00 PM	3:00 PM	1:00 PM	1:00 PM								12:00 PM		
Volume	25	86	102	102	27	4	0	0	0	0	0	0	0	259		

15th Percentile:	17.0 MPH	Average Speed:	22.8 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	23.0 MPH	10 MPH Pace:	18 to 27 MPH	Number of Vehicles > 25 MPH:	1007
85th Percentile:	28.0 MPH	Number in Pace:	1807	Percent of Vehicles > 25 MPH:	36.3%
95th Percentile:	32.0 MPH	Percent in Pace:	65.1%		

Chapel Street north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Monday, January 29, 2024

Speed (60-minute)

NB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	3	2	2	1	0	0	0	0	0	0	0	0	0	8	23.8	17.8
1:00 AM	0	1	1	1	0	1	0	0	0	0	0	0	0	4	34.0	26.0
2:00 AM	3	1	0	0	0	0	0	0	0	0	0	0	0	4	16.8	13.3
3:00 AM	3	3	3	3	0	0	0	0	0	0	0	0	0	12	25.4	19.9
4:00 AM	0	2	10	3	0	0	0	0	0	0	0	0	0	15	24.9	21.9
5:00 AM	1	5	2	15	2	0	0	1	1	0	0	0	0	27	29.4	25.7
6:00 AM	2	15	26	27	5	1	2	0	0	0	0	0	0	78	29.0	24.0
7:00 AM	9	32	68	40	22	7	3	2	0	0	0	0	0	183	31.0	24.3
8:00 AM	15	52	80	37	8	3	1	0	0	0	0	0	0	196	27.0	21.5
9:00 AM	9	49	60	28	1	1	1	1	0	0	0	0	0	150	25.0	21.2
10:00 AM	10	37	55	25	8	0	1	1	0	0	0	0	0	137	26.6	22.0
11:00 AM	19	53	76	30	16	6	0	0	0	0	0	0	0	200	27.0	21.7
12:00 PM	18	73	79	18	9	2	2	0	0	1	0	0	0	202	25.0	20.7
1:00 PM	20	36	57	21	9	3	2	1	0	0	0	0	0	149	27.0	21.4
2:00 PM	16	40	59	39	12	6	0	0	0	0	0	0	0	172	27.4	22.2
3:00 PM	8	57	65	26	12	8	0	0	0	0	0	0	0	176	28.0	22.2
4:00 PM	18	22	65	37	16	8	1	1	0	0	0	0	0	168	30.0	23.1
5:00 PM	11	22	79	40	14	9	1	0	0	0	0	0	0	176	28.8	23.6
6:00 PM	6	19	59	45	18	5	1	0	0	0	0	0	0	153	30.0	24.4
7:00 PM	5	13	33	29	14	9	2	0	0	0	0	0	0	105	32.0	25.1
8:00 PM	1	8	12	34	12	10	2	0	0	0	0	0	0	79	33.6	27.7
9:00 PM	1	1	4	11	5	3	0	0	0	0	0	0	0	25	31.8	27.7
10:00 PM	0	1	4	8	2	1	1	0	0	0	0	0	0	17	31.2	26.9
11:00 PM	0	0	2	3	5	2	1	0	0	0	0	0	0	13	36.6	30.8
Total	178	544	901	521	190	85	21	7	1	1	0	0	0	2449	29.0	22.8
Percent	7.27%	22.21%	36.79%	21.27%	7.76%	3.47%	0.86%	0.29%	0.04%	0.04%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	11:00 AM	8:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	5:00 AM					11:00 AM		
Volume	19	53	80	40	22	7	3	2	1	0	0	0	0	200		
PM Peak	1:00 PM	12:00 PM	12:00 PM	6:00 PM	6:00 PM	8:00 PM	12:00 PM	1:00 PM		12:00 PM				12:00 PM		
Volume	20	73	79	45	18	10	2	1	0	1	0	0	0	202		

15th Percentile:	17.0 MPH	Average Speed:	22.8 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	23.0 MPH	10 MPH Pace:	18 to 27 MPH	Number of Vehicles > 25 MPH:	669
85th Percentile:	29.0 MPH	Number in Pace:	1577	Percent of Vehicles > 25 MPH:	27.3%
95th Percentile:	34.0 MPH	Percent in Pace:	64.4%		

Chapel Street north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Monday, January 29, 2024

Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	2	0	1	0	0	0	0	0	0	0	0	0	0	3	18.2	15.7
1:00 AM	0	1	1	1	0	0	0	0	0	0	0	0	0	3	26.8	23.7
2:00 AM	1	0	0	1	1	0	0	0	0	0	0	0	0	3	31.6	24.7
3:00 AM	0	1	1	1	2	0	0	0	0	0	0	0	0	5	31.4	25.4
4:00 AM	0	0	1	4	0	0	0	0	0	0	0	0	0	5	27.8	26.4
5:00 AM	1	3	9	6	1	1	0	0	0	0	0	0	0	21	28.0	23.0
6:00 AM	7	12	27	29	6	0	0	0	0	0	0	0	0	81	28.0	22.8
7:00 AM	7	22	50	39	3	0	0	0	0	0	0	0	0	121	27.0	22.6
8:00 AM	15	39	75	17	4	0	0	0	0	0	0	0	0	150	24.0	20.3
9:00 AM	14	23	43	10	1	0	0	0	0	0	0	0	0	91	24.0	19.8
10:00 AM	10	28	59	19	4	0	0	0	0	0	0	0	0	120	25.0	21.0
11:00 AM	17	29	40	20	3	0	0	0	0	0	0	0	0	109	25.0	20.1
12:00 PM	18	51	44	16	2	0	0	0	0	0	0	0	0	131	24.0	19.5
1:00 PM	13	58	70	17	3	0	0	0	0	0	0	0	0	161	24.0	19.9
2:00 PM	22	62	71	19	7	0	0	0	0	0	0	0	0	181	24.0	20.0
3:00 PM	23	54	80	31	10	0	0	0	0	0	0	0	0	198	25.0	20.4
4:00 PM	20	45	79	38	2	0	0	0	0	0	0	0	0	184	25.0	20.8
5:00 PM	14	43	73	22	7	0	0	0	0	0	0	0	0	159	25.0	20.7
6:00 PM	7	25	52	26	3	1	0	0	0	0	0	0	0	114	26.0	21.7
7:00 PM	1	11	28	22	4	0	0	0	0	0	0	0	0	66	28.0	23.3
8:00 PM	2	12	22	30	6	3	0	0	0	0	0	0	0	75	29.0	24.2
9:00 PM	0	1	10	20	8	1	0	0	0	0	0	0	0	40	30.2	26.8
10:00 PM	0	1	1	7	1	1	0	0	0	0	0	0	0	11	29.5	27.4
11:00 PM	0	0	2	7	4	0	0	0	0	0	0	0	0	13	32.2	28.0
Total	194	521	839	402	82	7	0	0	0	0	0	0	0	2045	26.0	21.1
Percent	9.49%	25.48%	41.03%	19.66%	4.01%	0.34%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	8:00 AM	8:00 AM	7:00 AM	6:00 AM	5:00 AM								8:00 AM		
Volume	17	39	75	39	6	1	0	0	0	0	0	0	0	150		
PM Peak	3:00 PM	2:00 PM	3:00 PM	4:00 PM	3:00 PM	8:00 PM								3:00 PM		
Volume	23	62	80	38	10	3	0	0	0	0	0	0	0	198		

15th Percentile:	16.0 MPH	Average Speed:	21.1 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	371
85th Percentile:	26.0 MPH	Number in Pace:	1418	Percent of Vehicles > 25 MPH:	18.1%
95th Percentile:	29.0 MPH	Percent in Pace:	69.3%		

Chapel Street north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-C (Speed)

Count Date
Monday, January 29, 2024

Speed (60-minute)

Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	5	2	3	1	0	0	0	0	0	0	0	0	0	11	22.0	17.2
1:00 AM	0	2	2	2	0	1	0	0	0	0	0	0	0	7	29.9	25.0
2:00 AM	4	1	0	1	1	0	0	0	0	0	0	0	0	7	26.8	18.1
3:00 AM	3	4	4	4	2	0	0	0	0	0	0	0	0	17	27.8	21.5
4:00 AM	0	2	11	7	0	0	0	0	0	0	0	0	0	20	26.2	23.0
5:00 AM	2	8	11	21	3	1	0	1	1	0	0	0	0	48	29.0	24.5
6:00 AM	9	27	53	56	11	1	2	0	0	0	0	0	0	159	28.0	23.4
7:00 AM	16	54	118	79	25	7	3	2	0	0	0	0	0	304	28.0	23.7
8:00 AM	30	91	155	54	12	3	1	0	0	0	0	0	0	346	25.3	21.0
9:00 AM	23	72	103	38	2	1	1	1	0	0	0	0	0	241	25.0	20.7
10:00 AM	20	65	114	44	12	0	1	1	0	0	0	0	0	257	26.0	21.5
11:00 AM	36	82	116	50	19	6	0	0	0	0	0	0	0	309	26.0	21.1
12:00 PM	36	124	123	34	11	2	2	0	0	1	0	0	0	333	24.2	20.2
1:00 PM	33	94	127	38	12	3	2	1	0	0	0	0	0	310	25.7	20.6
2:00 PM	38	102	130	58	19	6	0	0	0	0	0	0	0	353	26.2	21.1
3:00 PM	31	111	145	57	22	8	0	0	0	0	0	0	0	374	27.0	21.2
4:00 PM	38	67	144	75	18	8	1	1	0	0	0	0	0	352	27.0	21.9
5:00 PM	25	65	152	62	21	9	1	0	0	0	0	0	0	335	27.0	22.2
6:00 PM	13	44	111	71	21	6	1	0	0	0	0	0	0	267	28.0	23.3
7:00 PM	6	24	61	51	18	9	2	0	0	0	0	0	0	171	30.0	24.4
8:00 PM	3	20	34	64	18	13	2	0	0	0	0	0	0	154	31.0	26.0
9:00 PM	1	2	14	31	13	4	0	0	0	0	0	0	0	65	31.0	27.2
10:00 PM	0	2	5	15	3	2	1	0	0	0	0	0	0	28	30.0	27.1
11:00 PM	0	0	4	10	9	2	1	0	0	0	0	0	0	26	33.3	29.4
Total	372	1065	1740	923	272	92	21	7	1	1	0	0	0	4494	27.0	22.0
Percent	8.28%	23.70%	38.72%	20.54%	6.05%	2.05%	0.47%	0.16%	0.02%	0.02%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	8:00 AM	8:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	5:00 AM					8:00 AM		
Volume	36	91	155	79	25	7	3	2	1	0	0	0	0	346		
PM Peak	2:00 PM	12:00 PM	5:00 PM	4:00 PM	3:00 PM	8:00 PM	12:00 PM	1:00 PM		12:00 PM				3:00 PM		
Volume	38	124	152	75	22	13	2	1	0	1	0	0	0	374		

15th Percentile:	17.0 MPH	Average Speed:	22.0 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	1007
85th Percentile:	27.0 MPH	Number in Pace:	2980	Percent of Vehicles > 25 MPH:	22.4%
95th Percentile:	32.0 MPH	Percent in Pace:	66.3%		

Highland Avenue north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Tuesday, January 23, 2024

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	2	2	0	0	0	0	0	0	0	0	0	4	27.1	24.5
1:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	2	24.9	24.5
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
3:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	24.0	24.0
4:00 AM	1	0	0	1	1	0	0	1	0	0	0	0	0	4	41.4	30.0
5:00 AM	0	2	1	4	5	2	0	0	0	0	0	0	0	14	33.1	28.6
6:00 AM	4	11	11	15	7	0	0	0	0	0	0	0	0	48	29.0	23.4
7:00 AM	6	40	45	23	16	2	2	0	0	0	0	0	0	134	29.1	22.7
8:00 AM	5	28	73	28	23	2	1	1	0	0	0	0	0	161	30.0	23.7
9:00 AM	4	30	52	24	13	1	0	1	0	0	0	0	0	125	27.4	22.7
10:00 AM	13	42	51	20	7	0	0	0	1	0	0	0	0	134	26.0	20.9
11:00 AM	12	49	56	19	9	1	0	0	0	0	0	0	0	146	26.0	20.7
12:00 PM	9	29	40	18	5	1	1	0	0	0	0	0	0	103	26.7	21.3
1:00 PM	12	29	55	22	5	0	0	0	0	0	0	0	0	123	26.0	21.3
2:00 PM	3	27	46	19	5	5	0	0	0	0	0	0	0	105	27.0	22.5
3:00 PM	25	45	60	32	12	0	0	0	0	0	0	0	0	174	26.0	20.7
4:00 PM	17	52	71	30	7	1	0	0	0	0	0	0	0	178	25.5	20.7
5:00 PM	11	27	62	29	7	1	1	0	0	0	0	0	0	138	27.0	22.2
6:00 PM	9	40	50	24	6	0	0	0	0	0	0	0	0	129	26.0	21.2
7:00 PM	7	18	32	22	5	1	0	0	0	0	0	0	0	85	27.0	22.2
8:00 PM	1	10	30	12	6	2	0	0	0	0	0	0	0	61	28.0	23.4
9:00 PM	1	6	5	9	6	0	0	0	0	0	0	0	0	27	31.1	24.4
10:00 PM	0	3	5	5	5	0	0	0	0	0	0	0	0	18	31.0	25.3
11:00 PM	0	1	1	4	1	0	0	0	0	0	0	0	0	7	29.2	25.9
Total	140	489	750	363	151	19	5	3	1	0	0	0	0	1921	27.0	22.0
Percent	7.29%	25.46%	39.04%	18.90%	7.86%	0.99%	0.26%	0.16%	0.05%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	11:00 AM	8:00 AM	8:00 AM	8:00 AM	5:00 AM	7:00 AM	4:00 AM	10:00 AM					8:00 AM		
Volume	13	49	73	28	23	2	2	1	1	0	0	0	0	161		
PM Peak	3:00 PM	4:00 PM	4:00 PM	3:00 PM	3:00 PM	2:00 PM	12:00 PM							4:00 PM		
Volume	25	52	71	32	12	5	1	0	0	0	0	0	0	178		

15th Percentile:	16.0 MPH	Average Speed:	22.0 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	446
85th Percentile:	27.0 MPH	Number in Pace:	1284	Percent of Vehicles > 25 MPH:	23.2%
95th Percentile:	32.0 MPH	Percent in Pace:	66.8%		

Highland Avenue north of
Great Plain Avenue (Route 135)
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Client: Nitsch/ B. Zimolka
Site Code: TBA

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157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Tuesday, January 23, 2024

Speed (60-minute)

EB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	1	2	0	0	0	0	0	0	0	0	0	3	28.7	25.7
1:00 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	2	13.4	12.0
2:00 AM	1	2	0	0	0	0	0	0	0	0	0	0	0	3	17.8	14.3
3:00 AM	2	2	3	0	0	0	0	0	0	0	0	0	0	7	24.0	17.7
4:00 AM	5	1	0	0	0	0	0	0	0	0	0	0	0	6	12.8	9.8
5:00 AM	0	1	0	1	1	2	0	0	0	0	0	0	0	5	36.2	29.6
6:00 AM	3	0	5	12	1	0	1	0	0	0	0	0	0	22	28.9	24.6
7:00 AM	14	20	19	8	2	0	0	0	0	0	0	0	0	63	24.7	18.5
8:00 AM	17	17	25	21	6	0	0	0	0	0	0	0	0	86	27.0	20.6
9:00 AM	43	16	25	24	4	1	0	0	0	0	0	0	0	113	26.0	18.0
10:00 AM	63	18	12	12	1	1	0	0	0	0	0	0	0	107	23.1	14.5
11:00 AM	61	33	41	13	1	0	0	0	0	0	0	0	0	149	23.0	16.1
12:00 PM	59	20	26	11	2	1	0	0	0	0	0	0	0	119	24.0	15.8
1:00 PM	47	20	11	4	2	0	0	0	0	0	0	0	0	84	22.0	14.6
2:00 PM	50	21	13	4	2	0	0	0	0	0	0	0	0	90	21.0	14.1
3:00 PM	67	31	14	8	0	1	0	0	0	0	0	0	0	121	20.0	14.1
4:00 PM	49	27	32	19	7	0	0	0	0	0	0	0	0	134	26.0	17.6
5:00 PM	25	19	51	20	9	0	0	0	0	0	0	0	0	124	27.0	20.7
6:00 PM	33	16	11	10	3	0	0	0	0	0	0	0	0	73	25.2	16.6
7:00 PM	11	8	19	14	3	0	0	0	0	0	0	0	0	55	26.9	20.9
8:00 PM	20	5	11	23	12	6	1	0	0	0	0	0	0	78	31.0	22.8
9:00 PM	2	2	7	10	7	1	0	0	0	0	0	0	0	29	31.8	25.9
10:00 PM	2	1	0	4	0	2	0	0	0	0	0	0	0	9	33.6	23.8
11:00 PM	0	1	1	7	5	0	0	0	0	0	0	0	0	14	31.0	27.5
Total	576	281	327	227	68	15	2	0	0	0	0	0	0	1496	26.0	17.7
Percent	38.50%	18.78%	21.86%	15.17%	4.55%	1.00%	0.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	11:00 AM	11:00 AM	9:00 AM	8:00 AM	5:00 AM	6:00 AM							11:00 AM		
Volume	63	33	41	24	6	2	1	0	0	0	0	0	0	149		
PM Peak	3:00 PM	3:00 PM	5:00 PM	8:00 PM	8:00 PM	8:00 PM	8:00 PM							4:00 PM		
Volume	67	31	51	23	12	6	1	0	0	0	0	0	0	134		

15th Percentile:	9.0 MPH	Average Speed:	17.7 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	17.5 MPH	10 MPH Pace:	10 to 19 MPH	Number of Vehicles > 25 MPH:	257
85th Percentile:	26.0 MPH	Number in Pace:	612	Percent of Vehicles > 25 MPH:	17.2%
95th Percentile:	30.0 MPH	Percent in Pace:	40.9%		

Highland Avenue north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Tuesday, January 23, 2024

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	3	4	0	0	0	0	0	0	0	0	0	7	28.1	25.0
1:00 AM	2	0	1	1	0	0	0	0	0	0	0	0	0	4	24.6	18.3
2:00 AM	1	2	0	0	0	0	0	0	0	0	0	0	0	3	17.8	14.3
3:00 AM	2	2	4	0	0	0	0	0	0	0	0	0	0	8	24.0	18.5
4:00 AM	6	1	0	1	1	0	0	1	0	0	0	0	0	10	29.6	17.9
5:00 AM	0	3	1	5	6	4	0	0	0	0	0	0	0	19	35.0	28.8
6:00 AM	7	11	16	27	8	0	1	0	0	0	0	0	0	70	29.0	23.8
7:00 AM	20	60	64	31	18	2	2	0	0	0	0	0	0	197	28.0	21.4
8:00 AM	22	45	98	49	29	2	1	1	0	0	0	0	0	247	29.0	22.6
9:00 AM	47	46	77	48	17	2	0	1	0	0	0	0	0	238	27.0	20.5
10:00 AM	76	60	63	32	8	1	0	0	1	0	0	0	0	241	25.0	18.0
11:00 AM	73	82	97	32	10	1	0	0	0	0	0	0	0	295	24.0	18.4
12:00 PM	68	49	66	29	7	2	1	0	0	0	0	0	0	222	25.0	18.4
1:00 PM	59	49	66	26	7	0	0	0	0	0	0	0	0	207	25.0	18.6
2:00 PM	53	48	59	23	7	5	0	0	0	0	0	0	0	195	25.0	18.6
3:00 PM	92	76	74	40	12	1	0	0	0	0	0	0	0	295	25.0	18.0
4:00 PM	66	79	103	49	14	1	0	0	0	0	0	0	0	312	26.0	19.4
5:00 PM	36	46	113	49	16	1	1	0	0	0	0	0	0	262	27.0	21.5
6:00 PM	42	56	61	34	9	0	0	0	0	0	0	0	0	202	26.0	19.5
7:00 PM	18	26	51	36	8	1	0	0	0	0	0	0	0	140	27.0	21.7
8:00 PM	21	15	41	35	18	8	1	0	0	0	0	0	0	139	30.0	23.1
9:00 PM	3	8	12	19	13	1	0	0	0	0	0	0	0	56	31.8	25.2
10:00 PM	2	4	5	9	5	2	0	0	0	0	0	0	0	27	31.1	24.8
11:00 PM	0	2	2	11	6	0	0	0	0	0	0	0	0	21	31.0	27.0
Total	716	770	1077	590	219	34	7	3	1	0	0	0	0	3417	27.0	20.1
Percent	20.95%	22.53%	31.52%	17.27%	6.41%	1.00%	0.20%	0.09%	0.03%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	11:00 AM	8:00 AM	8:00 AM	8:00 AM	5:00 AM	7:00 AM	4:00 AM	10:00 AM					11:00 AM		
Volume	76	82	98	49	29	4	2	1	1	0	0	0	0	295		
PM Peak	3:00 PM	4:00 PM	5:00 PM	4:00 PM	8:00 PM	8:00 PM	12:00 PM							4:00 PM		
Volume	92	79	113	49	18	8	1	0	0	0	0	0	0	312		

15th Percentile:	13.0 MPH	Average Speed:	20.1 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	703
85th Percentile:	27.0 MPH	Number in Pace:	1875	Percent of Vehicles > 25 MPH:	20.6%
95th Percentile:	31.0 MPH	Percent in Pace:	54.9%		

Highland Avenue north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Wednesday, January 24, 2024

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	1	0	4	2	1	0	0	0	0	0	0	0	8	33.9	29.3
1:00 AM	0	1	1	1	0	0	0	0	0	0	0	0	0	3	25.6	22.3
2:00 AM	0	1	1	1	0	0	0	0	0	0	0	0	0	3	24.4	22.3
3:00 AM	1	5	4	1	2	0	0	0	0	0	0	0	0	13	27.4	21.5
4:00 AM	3	5	4	4	1	0	0	0	0	0	0	0	0	17	26.0	20.1
5:00 AM	1	2	4	7	8	1	1	0	0	0	0	0	0	24	33.0	27.5
6:00 AM	0	9	14	13	5	0	0	0	0	0	0	0	0	41	28.0	23.6
7:00 AM	14	42	42	31	10	3	0	0	0	0	0	0	0	142	28.0	21.8
8:00 AM	20	54	55	29	16	1	0	0	0	0	0	0	0	175	26.9	21.1
9:00 AM	8	45	63	33	13	2	2	1	0	0	0	0	0	167	28.0	22.3
10:00 AM	15	58	46	17	6	1	0	0	0	0	0	0	0	143	25.0	20.0
11:00 AM	10	52	49	24	8	0	0	1	0	0	0	0	0	144	26.0	21.0
12:00 PM	8	60	43	16	8	0	0	0	0	0	0	0	0	135	26.0	20.3
1:00 PM	10	56	49	18	6	4	0	0	0	0	0	0	0	143	25.0	20.9
2:00 PM	13	35	41	24	9	0	1	0	0	0	0	0	0	123	26.7	21.2
3:00 PM	9	39	63	21	6	1	0	0	0	0	0	0	0	139	26.0	21.1
4:00 PM	10	31	53	18	4	2	1	0	0	0	0	0	0	119	25.0	21.2
5:00 PM	11	38	46	22	2	0	0	0	0	0	0	0	0	119	26.0	20.6
6:00 PM	10	32	50	14	3	0	0	0	0	0	0	0	0	109	24.8	20.6
7:00 PM	6	18	37	12	4	0	0	0	0	0	0	0	0	77	26.0	21.3
8:00 PM	6	5	27	13	3	0	0	0	0	0	0	0	0	54	28.0	22.3
9:00 PM	0	5	4	15	2	3	0	0	0	0	0	0	0	29	30.4	25.8
10:00 PM	0	0	4	2	1	0	0	0	0	0	0	0	0	7	29.2	25.7
11:00 PM	0	0	2	2	2	1	0	0	0	0	0	0	0	7	31.7	28.6
Total	155	594	702	342	121	20	5	2	0	0	0	0	0	1941	27.0	21.4
Percent	7.99%	30.60%	36.17%	17.62%	6.23%	1.03%	0.26%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	10:00 AM	9:00 AM	9:00 AM	8:00 AM	7:00 AM	9:00 AM	9:00 AM						8:00 AM		
Volume	20	58	63	33	16	3	2	1	0	0	0	0	0	175		
PM Peak	2:00 PM	12:00 PM	3:00 PM	2:00 PM	2:00 PM	1:00 PM	2:00 PM							1:00 PM		
Volume	13	60	63	24	9	4	1	0	0	0	0	0	0	143		

15th Percentile:	16.0 MPH	Average Speed:	21.4 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	390
85th Percentile:	27.0 MPH	Number in Pace:	1330	Percent of Vehicles > 25 MPH:	20.1%
95th Percentile:	31.0 MPH	Percent in Pace:	68.5%		

Highland Avenue north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Wednesday, January 24, 2024

Speed (60-minute)

EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	33.1	31.0
1:00 AM	0	1	0	1	1	0	0	0	0	0	0	0	0	3	29.1	25.3
2:00 AM	0	1	1	1	0	0	0	0	0	0	0	0	0	3	27.2	22.3
3:00 AM	2	0	3	2	0	0	0	0	0	0	0	0	0	7	27.0	20.1
4:00 AM	7	0	0	1	1	0	0	0	0	0	0	0	0	9	24.2	13.0
5:00 AM	6	1	4	6	0	0	0	0	0	0	0	0	0	17	27.6	18.7
6:00 AM	1	3	5	10	1	1	0	0	0	0	0	0	0	21	28.0	24.9
7:00 AM	7	8	15	8	6	1	1	0	0	0	0	0	0	46	30.0	22.4
8:00 AM	28	11	19	11	6	0	0	0	0	0	0	0	0	75	25.9	18.1
9:00 AM	41	10	13	11	4	0	0	0	0	0	0	0	0	79	25.3	16.4
10:00 AM	48	14	12	10	0	0	0	0	0	0	0	0	0	84	23.0	14.4
11:00 AM	48	18	13	4	2	0	0	0	0	0	0	0	0	85	22.0	14.6
12:00 PM	67	24	14	6	2	1	1	0	0	0	0	0	0	115	21.0	13.8
1:00 PM	64	25	13	4	3	0	0	0	0	0	0	0	0	109	21.0	14.1
2:00 PM	60	18	25	9	1	0	0	0	0	0	0	0	0	113	23.0	15.3
3:00 PM	51	28	31	12	7	0	0	0	0	0	0	0	0	129	24.0	16.7
4:00 PM	40	21	17	13	6	1	0	0	0	0	0	0	0	98	26.5	17.4
5:00 PM	67	22	33	9	4	0	0	0	0	0	0	0	0	135	23.0	15.7
6:00 PM	51	23	26	8	3	0	0	0	0	0	0	0	0	111	23.0	16.2
7:00 PM	31	11	10	3	4	0	0	0	0	0	0	0	0	59	23.3	15.4
8:00 PM	2	3	5	4	3	0	0	0	0	0	0	0	0	17	29.6	23.5
9:00 PM	3	0	1	3	3	0	0	0	0	0	0	0	0	10	32.0	22.9
10:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	30.7	30.0
11:00 PM	0	1	0	3	1	0	0	0	0	0	0	0	0	5	29.8	25.2
Total	624	243	260	141	60	4	2	0	0	0	0	0	0	1334	25.0	16.3
Percent	46.78%	18.22%	19.49%	10.57%	4.50%	0.30%	0.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	11:00 AM	8:00 AM	8:00 AM	7:00 AM	6:00 AM	7:00 AM							11:00 AM		
Volume	48	18	19	11	6	1	1	0	0	0	0	0	0	85		
PM Peak	12:00 PM	3:00 PM	5:00 PM	4:00 PM	3:00 PM	12:00 PM	12:00 PM							5:00 PM		
Volume	67	28	33	13	7	1	1	0	0	0	0	0	0	135		

15th Percentile:	8.0 MPH	Average Speed:	16.3 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	15.0 MPH	10 MPH Pace:	8 to 17 MPH	Number of Vehicles > 25 MPH:	169
85th Percentile:	25.0 MPH	Number in Pace:	624	Percent of Vehicles > 25 MPH:	12.7%
95th Percentile:	29.0 MPH	Percent in Pace:	46.8%		

Highland Avenue north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Wednesday, January 24, 2024

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	1	0	5	3	1	0	0	0	0	0	0	0	10	34.0	29.6
1:00 AM	0	2	1	2	1	0	0	0	0	0	0	0	0	6	28.5	23.8
2:00 AM	0	2	2	2	0	0	0	0	0	0	0	0	0	6	26.0	22.3
3:00 AM	3	5	7	3	2	0	0	0	0	0	0	0	0	20	27.0	21.0
4:00 AM	10	5	4	5	2	0	0	0	0	0	0	0	0	26	26.0	17.7
5:00 AM	7	3	8	13	8	1	1	0	0	0	0	0	0	41	32.0	23.9
6:00 AM	1	12	19	23	6	1	0	0	0	0	0	0	0	62	28.0	24.0
7:00 AM	21	50	57	39	16	4	1	0	0	0	0	0	0	188	28.0	21.9
8:00 AM	48	65	74	40	22	1	0	0	0	0	0	0	0	250	26.0	20.2
9:00 AM	49	55	76	44	17	2	2	1	0	0	0	0	0	246	27.0	20.4
10:00 AM	63	72	58	27	6	1	0	0	0	0	0	0	0	227	24.1	17.9
11:00 AM	58	70	62	28	10	0	0	1	0	0	0	0	0	229	25.0	18.7
12:00 PM	75	84	57	22	10	1	1	0	0	0	0	0	0	250	24.0	17.3
1:00 PM	74	81	62	22	9	4	0	0	0	0	0	0	0	252	24.0	18.0
2:00 PM	73	53	66	33	10	0	1	0	0	0	0	0	0	236	25.0	18.3
3:00 PM	60	67	94	33	13	1	0	0	0	0	0	0	0	268	25.0	19.0
4:00 PM	50	52	70	31	10	3	1	0	0	0	0	0	0	217	26.0	19.5
5:00 PM	78	60	79	31	6	0	0	0	0	0	0	0	0	254	24.0	18.0
6:00 PM	61	55	76	22	6	0	0	0	0	0	0	0	0	220	24.0	18.4
7:00 PM	37	29	47	15	8	0	0	0	0	0	0	0	0	136	25.0	18.7
8:00 PM	8	8	32	17	6	0	0	0	0	0	0	0	0	71	28.0	22.6
9:00 PM	3	5	5	18	5	3	0	0	0	0	0	0	0	39	31.3	25.0
10:00 PM	0	0	4	3	2	0	0	0	0	0	0	0	0	9	30.6	26.7
11:00 PM	0	1	2	5	3	1	0	0	0	0	0	0	0	12	31.0	27.2
Total	779	837	962	483	181	24	7	2	0	0	0	0	0	3275	26.0	19.3
Percent	23.79%	25.56%	29.37%	14.75%	5.53%	0.73%	0.21%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	10:00 AM	9:00 AM	9:00 AM	8:00 AM	7:00 AM	9:00 AM	9:00 AM						8:00 AM		
Volume	63	72	76	44	22	4	2	1	0	0	0	0	0	250		
PM Peak	5:00 PM	12:00 PM	3:00 PM	2:00 PM	3:00 PM	1:00 PM	12:00 PM							3:00 PM		
Volume	78	84	94	33	13	4	1	0	0	0	0	0	0	268		

15th Percentile:	12.0 MPH	Average Speed:	19.3 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	20.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	559
85th Percentile:	26.0 MPH	Number in Pace:	1810	Percent of Vehicles > 25 MPH:	17.1%
95th Percentile:	31.0 MPH	Percent in Pace:	55.3%		

Highland Avenue north of
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Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Thursday, January 25, 2024

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	1	1	1	0	0	0	0	0	0	0	0	3	28.8	26.3
1:00 AM	0	0	1	1	1	0	0	0	0	0	0	0	0	3	29.8	26.3
2:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	29.3	27.5
3:00 AM	0	0	1	1	2	0	0	0	0	0	0	0	0	4	31.6	28.3
4:00 AM	0	0	3	3	3	2	0	0	0	0	0	0	0	11	34.5	29.5
5:00 AM	1	6	7	8	4	0	0	0	0	0	0	0	0	26	28.5	23.3
6:00 AM	2	15	17	19	4	0	0	0	0	0	0	0	0	57	28.6	22.7
7:00 AM	9	38	66	34	9	0	0	0	0	0	0	0	0	156	27.0	21.9
8:00 AM	6	32	62	48	14	0	0	0	0	0	0	0	0	162	28.0	22.9
9:00 AM	11	34	33	27	16	0	1	0	0	0	0	0	0	122	29.0	22.3
10:00 AM	10	43	56	20	10	1	1	0	0	0	0	0	0	141	27.0	21.5
11:00 AM	4	35	49	20	12	1	0	0	0	0	0	0	0	121	27.0	22.1
12:00 PM	10	36	63	21	5	1	0	0	0	0	0	0	0	136	25.0	21.0
1:00 PM	8	39	56	27	9	1	1	0	0	0	0	0	0	141	26.0	21.8
2:00 PM	18	53	54	18	7	0	0	0	0	0	0	0	0	150	25.7	20.1
3:00 PM	22	43	46	18	4	1	0	0	0	0	0	0	0	134	25.0	19.7
4:00 PM	14	55	53	17	10	0	0	0	0	0	0	0	0	149	25.0	20.3
5:00 PM	16	36	49	18	5	0	0	0	0	0	0	0	0	124	25.0	20.1
6:00 PM	16	33	29	16	1	0	0	0	0	0	0	0	0	95	25.0	19.4
7:00 PM	4	25	45	19	4	1	0	0	0	0	0	0	0	98	26.0	21.8
8:00 PM	1	3	19	12	7	2	0	0	0	0	0	0	0	44	30.6	24.8
9:00 PM	1	2	11	9	5	0	0	0	0	0	0	0	0	28	30.9	25.3
10:00 PM	0	2	8	7	3	0	0	0	0	0	0	0	0	20	28.5	25.1
11:00 PM	0	1	3	4	1	0	0	1	0	0	0	0	0	10	29.6	26.8
Total	153	531	732	369	138	10	3	1	0	0	0	0	0	1937	27.0	21.6
Percent	7.90%	27.41%	37.79%	19.05%	7.12%	0.52%	0.15%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	9:00 AM	10:00 AM	7:00 AM	8:00 AM	9:00 AM	4:00 AM	9:00 AM							8:00 AM		
Volume	11	43	66	48	16	2	1	0	0	0	0	0	0	162		
PM Peak	3:00 PM	4:00 PM	12:00 PM	1:00 PM	4:00 PM	8:00 PM	1:00 PM	11:00 PM						2:00 PM		
Volume	22	55	63	27	10	2	1	1	0	0	0	0	0	150		

15th Percentile:	16.0 MPH	Average Speed:	21.6 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	404
85th Percentile:	27.0 MPH	Number in Pace:	1303	Percent of Vehicles > 25 MPH:	20.9%
95th Percentile:	31.0 MPH	Percent in Pace:	67.3%		

Highland Avenue north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Thursday, January 25, 2024

Speed (60-minute)

EB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	31.0	28.5
1:00 AM	0	0	0	1	0	0	1	0	0	0	0	0	0	2	39.2	35.0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
3:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	24.0	24.0
4:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	31.4	30.0
5:00 AM	1	1	1	1	0	0	0	0	0	0	0	0	0	4	25.8	21.0
6:00 AM	0	1	1	4	4	0	0	0	0	0	0	0	0	10	31.0	26.8
7:00 AM	9	11	23	14	7	2	0	0	0	0	0	0	0	66	29.0	22.1
8:00 AM	25	19	26	23	7	0	0	0	0	0	0	0	0	100	26.2	19.7
9:00 AM	20	10	8	11	4	0	0	0	0	0	0	0	0	53	28.2	18.5
10:00 AM	41	19	19	16	0	1	0	0	0	0	0	0	0	96	25.0	16.4
11:00 AM	62	20	22	11	3	1	0	0	0	0	0	0	0	119	24.0	15.6
12:00 PM	73	27	30	16	3	0	0	0	0	0	0	0	0	149	24.0	15.5
1:00 PM	41	20	20	17	6	0	0	0	0	0	0	0	0	104	25.0	17.5
2:00 PM	75	29	26	5	1	0	0	0	0	0	0	0	0	136	22.0	14.0
3:00 PM	58	30	13	12	2	0	0	0	0	0	0	0	0	115	22.9	15.1
4:00 PM	33	37	24	5	3	1	0	0	0	0	0	0	0	103	23.0	16.8
5:00 PM	29	16	19	7	3	0	0	0	0	0	0	0	0	74	23.1	16.7
6:00 PM	52	27	20	11	3	0	0	0	0	0	0	0	0	113	24.0	15.8
7:00 PM	44	11	12	11	3	0	0	0	0	0	0	0	0	81	26.0	15.9
8:00 PM	25	5	17	14	5	0	0	0	0	0	0	0	0	66	27.0	18.7
9:00 PM	1	6	10	18	8	2	0	0	0	0	0	0	0	45	30.0	25.5
10:00 PM	3	3	5	4	4	0	0	0	0	0	0	0	0	19	30.3	21.9
11:00 PM	1	1	1	6	6	2	0	0	0	0	0	0	0	17	33.2	28.1
Total	593	293	298	209	74	9	1	0	0	0	0	0	0	1477	26.0	17.3
Percent	40.15%	19.84%	20.18%	14.15%	5.01%	0.61%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	11:00 AM	8:00 AM	8:00 AM	7:00 AM	7:00 AM	1:00 AM							11:00 AM		
Volume	62	20	26	23	7	2	1	0	0	0	0	0	0	119		
PM Peak	2:00 PM	4:00 PM	12:00 PM	9:00 PM	9:00 PM	9:00 PM								12:00 PM		
Volume	75	37	30	18	8	2	0	0	0	0	0	0	0	149		

15th Percentile:	9.0 MPH	Average Speed:	17.3 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	17.0 MPH	10 MPH Pace:	8 to 17 MPH	Number of Vehicles > 25 MPH:	231
85th Percentile:	26.0 MPH	Number in Pace:	632	Percent of Vehicles > 25 MPH:	15.6%
95th Percentile:	30.0 MPH	Percent in Pace:	42.8%		

Highland Avenue north of
Great Plain Avenue (Route 135)
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Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Thursday, January 25, 2024

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	1	2	2	0	0	0	0	0	0	0	0	5	30.8	27.2
1:00 AM	0	0	1	2	1	0	1	0	0	0	0	0	0	5	35.0	29.8
2:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	29.3	27.5
3:00 AM	0	0	2	1	2	0	0	0	0	0	0	0	0	5	31.4	27.4
4:00 AM	0	0	3	4	4	2	0	0	0	0	0	0	0	13	34.2	29.6
5:00 AM	2	7	8	9	4	0	0	0	0	0	0	0	0	30	28.0	23.0
6:00 AM	2	16	18	23	8	0	0	0	0	0	0	0	0	67	29.0	23.3
7:00 AM	18	49	89	48	16	2	0	0	0	0	0	0	0	222	27.0	22.0
8:00 AM	31	51	88	71	21	0	0	0	0	0	0	0	0	262	28.0	21.7
9:00 AM	31	44	41	38	20	0	1	0	0	0	0	0	0	175	29.0	21.2
10:00 AM	51	62	75	36	10	2	1	0	0	0	0	0	0	237	26.0	19.5
11:00 AM	66	55	71	31	15	2	0	0	0	0	0	0	0	240	26.0	18.9
12:00 PM	83	63	93	37	8	1	0	0	0	0	0	0	0	285	25.0	18.1
1:00 PM	49	59	76	44	15	1	1	0	0	0	0	0	0	245	26.0	19.9
2:00 PM	93	82	80	23	8	0	0	0	0	0	0	0	0	286	24.0	17.2
3:00 PM	80	73	59	30	6	1	0	0	0	0	0	0	0	249	24.0	17.6
4:00 PM	47	92	77	22	13	1	0	0	0	0	0	0	0	252	24.0	18.9
5:00 PM	45	52	68	25	8	0	0	0	0	0	0	0	0	198	25.0	18.9
6:00 PM	68	60	49	27	4	0	0	0	0	0	0	0	0	208	24.0	17.4
7:00 PM	48	36	57	30	7	1	0	0	0	0	0	0	0	179	26.0	19.1
8:00 PM	26	8	36	26	12	2	0	0	0	0	0	0	0	110	28.7	21.1
9:00 PM	2	8	21	27	13	2	0	0	0	0	0	0	0	73	30.2	25.4
10:00 PM	3	5	13	11	7	0	0	0	0	0	0	0	0	39	30.3	23.5
11:00 PM	1	2	4	10	7	2	0	1	0	0	0	0	0	27	32.2	27.6
Total	746	824	1030	578	212	19	4	1	0	0	0	0	0	3414	26.0	19.7
Percent	21.85%	24.14%	30.17%	16.93%	6.21%	0.56%	0.12%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	10:00 AM	7:00 AM	8:00 AM	8:00 AM	4:00 AM	1:00 AM							8:00 AM		
Volume	66	62	89	71	21	2	1	0	0	0	0	0	0	262		
PM Peak	2:00 PM	4:00 PM	12:00 PM	1:00 PM	1:00 PM	8:00 PM	1:00 PM	11:00 PM						2:00 PM		
Volume	93	92	93	44	15	2	1	1	0	0	0	0	0	286		

15th Percentile:	12.0 MPH	Average Speed:	19.7 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	20.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	635
85th Percentile:	26.0 MPH	Number in Pace:	1875	Percent of Vehicles > 25 MPH:	18.6%
95th Percentile:	31.0 MPH	Percent in Pace:	54.9%		

Highland Avenue north of
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Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Friday, January 26, 2024

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	1	0	2	0	0	0	0	0	0	0	0	0	3	27.1	23.7
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16.0	16.0
2:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	22.0	22.0
3:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	26.0	26.0
4:00 AM	0	0	1	3	5	0	0	0	0	0	0	0	0	9	33.6	29.8
5:00 AM	0	5	3	5	0	0	0	0	0	0	0	0	0	13	28.0	22.7
6:00 AM	2	7	8	19	4	0	1	0	0	0	0	0	0	41	29.0	24.4
7:00 AM	8	32	49	39	4	0	0	0	0	0	0	0	0	132	26.0	21.6
8:00 AM	21	33	50	24	4	1	0	0	0	0	0	0	0	133	26.2	20.5
9:00 AM	10	29	46	14	5	1	0	0	0	0	0	0	0	105	25.4	20.7
10:00 AM	12	22	47	26	7	0	0	0	0	0	0	0	0	114	27.0	21.7
11:00 AM	8	35	41	13	5	0	0	0	0	0	0	0	0	102	25.0	20.6
12:00 PM	18	48	34	8	0	0	0	0	0	0	0	0	0	108	23.0	18.5
1:00 PM	18	58	39	8	3	1	0	0	0	0	0	0	0	127	23.0	18.9
2:00 PM	14	39	40	12	2	0	0	0	0	0	0	0	0	107	24.0	19.8
3:00 PM	15	41	56	17	7	0	0	0	0	0	0	0	0	136	25.0	20.4
4:00 PM	10	33	59	13	4	0	0	0	0	0	0	0	0	119	24.0	20.4
5:00 PM	20	46	42	23	2	0	0	0	0	0	0	0	0	133	25.0	19.5
6:00 PM	16	37	38	17	3	0	0	0	0	0	0	0	0	111	25.0	19.6
7:00 PM	10	37	33	14	3	0	0	0	0	0	0	0	0	97	25.0	20.0
8:00 PM	3	7	22	12	3	0	0	0	0	0	0	0	0	47	27.1	22.5
9:00 PM	0	5	12	15	5	1	0	0	0	0	0	0	0	38	29.5	24.3
10:00 PM	0	3	9	10	7	0	0	0	0	0	0	0	0	29	31.8	25.9
11:00 PM	0	0	0	4	6	1	0	0	0	0	0	0	0	11	33.0	30.6
Total	185	519	630	299	79	5	1	0	0	0	0	0	0	1718	26.0	20.7
Percent	10.77%	30.21%	36.67%	17.40%	4.60%	0.29%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	8:00 AM	11:00 AM	8:00 AM	7:00 AM	10:00 AM	8:00 AM	6:00 AM							8:00 AM		
Volume	21	35	50	39	7	1	1	0	0	0	0	0	0	133		
PM Peak	5:00 PM	1:00 PM	4:00 PM	5:00 PM	3:00 PM	1:00 PM								3:00 PM		
Volume	20	58	59	23	7	1	0	0	0	0	0	0	0	136		

15th Percentile:	15.0 MPH	Average Speed:	20.7 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	292
85th Percentile:	26.0 MPH	Number in Pace:	1167	Percent of Vehicles > 25 MPH:	17.0%
95th Percentile:	29.0 MPH	Percent in Pace:	67.9%		

Highland Avenue north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
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157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Friday, January 26, 2024

Speed (60-minute)

EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	31.3	29.5
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
2:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	25.0	25.0
3:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28.0	28.0
4:00 AM	2	1	0	0	1	2	0	0	0	0	0	0	0	6	37.0	24.8
5:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	26.0	26.0
6:00 AM	0	0	2	0	2	0	0	0	0	0	0	0	0	4	31.0	26.5
7:00 AM	4	10	9	8	1	0	0	0	0	0	0	0	0	32	28.4	20.6
8:00 AM	15	12	16	10	6	1	0	0	0	0	0	0	0	60	28.0	19.8
9:00 AM	50	17	7	8	1	0	0	0	0	0	0	0	0	83	22.4	14.3
10:00 AM	50	13	6	5	2	0	0	0	0	0	0	0	0	76	20.0	13.6
11:00 AM	37	20	5	4	0	0	0	0	0	0	0	0	0	66	19.0	13.8
12:00 PM	51	16	7	7	0	0	0	0	0	0	0	0	0	81	20.0	13.7
1:00 PM	71	15	9	6	1	0	0	0	0	0	0	0	0	102	19.9	12.6
2:00 PM	67	21	14	12	0	1	0	0	0	0	0	0	0	115	21.0	14.3
3:00 PM	53	17	24	9	3	0	0	0	0	0	0	0	0	106	24.0	15.5
4:00 PM	43	16	23	5	2	0	0	0	0	0	0	0	0	89	23.0	15.3
5:00 PM	26	26	24	8	1	0	0	0	0	0	0	0	0	85	24.0	17.5
6:00 PM	52	20	6	1	1	0	0	0	0	0	0	0	0	80	18.0	12.5
7:00 PM	23	13	6	8	1	0	0	0	0	0	0	0	0	51	25.5	15.5
8:00 PM	13	5	7	10	0	1	0	0	0	0	0	0	0	36	26.0	17.7
9:00 PM	21	4	3	7	5	2	1	0	0	0	0	0	0	43	30.0	19.1
10:00 PM	14	3	4	1	5	0	0	0	0	0	0	0	0	27	30.2	16.9
11:00 PM	0	0	1	5	3	2	0	0	0	0	0	0	0	11	35.5	30.0
Total	592	229	173	118	36	9	1	0	0	0	0	0	0	1158	24.0	15.5
Percent	51.12%	19.78%	14.94%	10.19%	3.11%	0.78%	0.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	9:00 AM	11:00 AM	8:00 AM	8:00 AM	8:00 AM	4:00 AM								9:00 AM		
Volume	50	20	16	10	6	2	0	0	0	0	0	0	0	83		
PM Peak	1:00 PM	5:00 PM	3:00 PM	2:00 PM	9:00 PM	9:00 PM	9:00 PM							2:00 PM		
Volume	71	26	24	12	5	2	1	0	0	0	0	0	0	115		

15th Percentile:	8.0 MPH	Average Speed:	15.5 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	14.0 MPH	10 MPH Pace:	7 to 16 MPH	Number of Vehicles > 25 MPH:	137
85th Percentile:	24.0 MPH	Number in Pace:	594	Percent of Vehicles > 25 MPH:	11.8%
95th Percentile:	29.0 MPH	Percent in Pace:	51.3%		

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Count Date
Friday, January 26, 2024

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	1	0	3	1	0	0	0	0	0	0	0	0	5	29.6	26.0
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16.0	16.0
2:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	2	24.6	23.5
3:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	2	27.7	27.0
4:00 AM	2	1	1	3	6	2	0	0	0	0	0	0	0	15	34.0	27.8
5:00 AM	0	5	3	6	0	0	0	0	0	0	0	0	0	14	28.0	22.9
6:00 AM	2	7	10	19	6	0	1	0	0	0	0	0	0	45	29.4	24.6
7:00 AM	12	42	58	47	5	0	0	0	0	0	0	0	0	164	26.6	21.4
8:00 AM	36	45	66	34	10	2	0	0	0	0	0	0	0	193	27.0	20.3
9:00 AM	60	46	53	22	6	1	0	0	0	0	0	0	0	188	25.0	17.9
10:00 AM	62	35	53	31	9	0	0	0	0	0	0	0	0	190	26.0	18.5
11:00 AM	45	55	46	17	5	0	0	0	0	0	0	0	0	168	24.0	17.9
12:00 PM	69	64	41	15	0	0	0	0	0	0	0	0	0	189	22.0	16.4
1:00 PM	89	73	48	14	4	1	0	0	0	0	0	0	0	229	22.8	16.1
2:00 PM	81	60	54	24	2	1	0	0	0	0	0	0	0	222	23.9	16.9
3:00 PM	68	58	80	26	10	0	0	0	0	0	0	0	0	242	24.0	18.3
4:00 PM	53	49	82	18	6	0	0	0	0	0	0	0	0	208	24.0	18.2
5:00 PM	46	72	66	31	3	0	0	0	0	0	0	0	0	218	25.0	18.7
6:00 PM	68	57	44	18	4	0	0	0	0	0	0	0	0	191	23.0	16.6
7:00 PM	33	50	39	22	4	0	0	0	0	0	0	0	0	148	25.0	18.5
8:00 PM	16	12	29	22	3	1	0	0	0	0	0	0	0	83	27.0	20.4
9:00 PM	21	9	15	22	10	3	1	0	0	0	0	0	0	81	30.0	21.6
10:00 PM	14	6	13	11	12	0	0	0	0	0	0	0	0	56	31.8	21.5
11:00 PM	0	0	1	9	9	3	0	0	0	0	0	0	0	22	33.9	30.3
Total	777	748	803	417	115	14	2	0	0	0	0	0	0	2876	25.0	18.6
Percent	27.02%	26.01%	27.92%	14.50%	4.00%	0.49%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	11:00 AM	8:00 AM	7:00 AM	8:00 AM	4:00 AM	6:00 AM							8:00 AM		
Volume	62	55	66	47	10	2	1	0	0	0	0	0	0	193		
PM Peak	1:00 PM	1:00 PM	4:00 PM	5:00 PM	10:00 PM	9:00 PM	9:00 PM							3:00 PM		
Volume	89	73	82	31	12	3	1	0	0	0	0	0	0	242		

15th Percentile:	11.0 MPH	Average Speed:	18.6 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	19.0 MPH	10 MPH Pace:	15 to 24 MPH	Number of Vehicles > 25 MPH:	635
85th Percentile:	25.0 MPH	Number in Pace:	1551	Percent of Vehicles > 25 MPH:	22.1%
95th Percentile:	29.0 MPH	Percent in Pace:	53.9%		

Highland Avenue north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Saturday, January 27, 2024

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	2	2	3	1	0	0	0	0	0	0	0	8	31.0	27.8
1:00 AM	0	0	1	0	2	0	0	0	0	0	0	0	0	3	31.4	28.3
2:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	2	32.0	32.0
3:00 AM	0	0	1	1	1	0	0	1	0	0	0	0	0	4	39.3	32.0
4:00 AM	0	0	3	0	2	2	0	0	0	0	0	0	0	7	35.0	29.0
5:00 AM	0	0	4	2	4	1	0	0	0	0	0	0	0	11	32.0	27.4
6:00 AM	0	2	7	9	6	0	0	0	0	0	0	0	0	24	30.0	25.9
7:00 AM	2	8	10	34	9	2	0	0	0	0	0	0	0	65	30.0	25.8
8:00 AM	2	13	30	19	10	0	0	0	0	0	0	0	0	74	28.0	23.4
9:00 AM	5	28	24	33	4	1	0	0	0	0	0	0	0	95	27.0	22.2
10:00 AM	9	36	46	23	9	2	0	0	0	0	0	0	0	125	26.0	21.5
11:00 AM	24	55	63	28	1	1	0	0	0	0	0	0	0	172	25.0	19.7
12:00 PM	13	48	64	19	4	1	0	0	0	0	0	0	0	149	25.0	20.6
1:00 PM	19	56	68	18	6	0	0	0	0	0	0	0	0	167	24.0	20.1
2:00 PM	10	58	63	30	11	1	0	0	0	0	0	0	0	173	26.0	21.3
3:00 PM	11	43	63	28	7	2	0	0	0	0	0	0	0	154	27.0	21.4
4:00 PM	6	17	52	38	12	0	0	0	0	0	0	0	0	125	28.0	23.4
5:00 PM	15	40	38	26	6	0	0	0	0	0	0	0	0	125	26.0	20.6
6:00 PM	25	43	42	11	3	0	0	0	0	0	0	0	0	124	24.0	18.8
7:00 PM	5	38	25	10	6	1	0	2	0	0	0	0	0	87	27.1	21.1
8:00 PM	2	10	22	17	4	1	0	0	0	0	0	0	0	56	28.8	23.3
9:00 PM	1	1	9	9	8	3	0	0	0	0	0	0	0	31	31.5	26.4
10:00 PM	0	4	5	5	5	1	0	0	0	0	0	0	0	20	31.0	25.5
11:00 PM	0	3	1	4	5	0	0	0	0	0	0	0	0	13	31.2	26.1
Total	149	503	643	366	130	20	0	3	0	0	0	0	0	1814	27.0	21.6
Percent	8.21%	27.73%	35.45%	20.18%	7.17%	1.10%	0.00%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	11:00 AM	11:00 AM	7:00 AM	8:00 AM	4:00 AM		3:00 AM						11:00 AM		
Volume	24	55	63	34	10	2	0	1	0	0	0	0	0	172		
PM Peak	6:00 PM	2:00 PM	1:00 PM	4:00 PM	4:00 PM	9:00 PM		7:00 PM						2:00 PM		
Volume	25	58	68	38	12	3	0	2	0	0	0	0	0	173		

15th Percentile:	16.0 MPH	Average Speed:	21.6 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	427
85th Percentile:	27.0 MPH	Number in Pace:	1156	Percent of Vehicles > 25 MPH:	23.5%
95th Percentile:	31.0 MPH	Percent in Pace:	63.7%		

Highland Avenue north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Saturday, January 27, 2024

Speed (60-minute)

EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	0	0	1	2	0	0	0	0	0	0	0	0	4	31.1	24.8
1:00 AM	0	0	0	2	1	0	0	0	0	0	0	0	0	3	30.8	28.3
2:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	29.6	28.5
3:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	2	27.9	27.5
4:00 AM	0	0	0	2	1	0	0	0	0	0	0	0	0	3	30.8	28.3
5:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	31.0	31.0
6:00 AM	0	0	0	5	2	0	0	0	0	0	0	0	0	7	33.0	29.1
7:00 AM	1	0	6	8	7	0	0	0	0	0	0	0	0	22	30.0	26.6
8:00 AM	16	7	7	7	3	0	0	0	0	0	0	0	0	40	26.2	17.7
9:00 AM	26	9	4	7	4	0	0	0	0	0	0	0	0	50	27.0	15.9
10:00 AM	55	18	8	2	2	2	0	0	0	0	0	0	0	87	21.1	13.9
11:00 AM	70	17	10	7	1	1	0	0	0	0	0	0	0	106	21.3	13.1
12:00 PM	74	33	9	5	3	0	0	0	0	0	0	0	0	124	19.0	13.5
1:00 PM	57	22	20	12	1	0	0	0	0	0	0	0	0	112	22.0	15.2
2:00 PM	38	31	45	28	10	1	0	0	0	0	0	0	0	153	27.0	19.7
3:00 PM	39	22	51	39	7	0	0	0	0	0	0	0	0	158	27.0	20.3
4:00 PM	34	18	23	15	6	0	0	0	0	0	0	0	0	96	26.8	18.3
5:00 PM	14	10	13	15	4	1	0	0	0	0	0	0	0	57	27.0	20.1
6:00 PM	27	9	5	10	0	2	0	0	0	0	0	0	0	53	27.0	15.8
7:00 PM	14	6	5	1	0	1	0	0	0	0	0	0	0	27	22.1	15.1
8:00 PM	9	4	8	8	0	0	0	0	0	0	0	0	0	29	27.8	19.1
9:00 PM	3	5	8	13	6	0	0	0	0	0	0	0	0	35	29.9	23.7
10:00 PM	0	6	1	4	6	0	0	0	0	0	0	0	0	17	32.0	24.8
11:00 PM	0	0	1	2	5	0	1	0	0	0	0	0	0	9	32.8	30.6
Total	478	217	224	196	73	8	1	0	0	0	0	0	0	1197	27.0	17.7
Percent	39.93%	18.13%	18.71%	16.37%	6.10%	0.67%	0.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	10:00 AM	11:00 AM	7:00 AM	7:00 AM	10:00 AM								11:00 AM		
Volume	70	18	10	8	7	2	0	0	0	0	0	0	0	106		
PM Peak	12:00 PM	12:00 PM	3:00 PM	3:00 PM	2:00 PM	6:00 PM	11:00 PM							3:00 PM		
Volume	74	33	51	39	10	2	1	0	0	0	0	0	0	158		

15th Percentile:	9.0 MPH	Average Speed:	17.7 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	17.0 MPH	10 MPH Pace:	8 to 17 MPH	Number of Vehicles > 25 MPH:	225
85th Percentile:	27.0 MPH	Number in Pace:	504	Percent of Vehicles > 25 MPH:	18.8%
95th Percentile:	30.0 MPH	Percent in Pace:	42.1%		

Highland Avenue north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Saturday, January 27, 2024

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	0	2	3	5	1	0	0	0	0	0	0	0	12	31.4	26.8
1:00 AM	0	0	1	2	3	0	0	0	0	0	0	0	0	6	32.0	28.3
2:00 AM	0	0	0	1	3	0	0	0	0	0	0	0	0	4	32.0	30.3
3:00 AM	0	0	1	3	1	0	0	1	0	0	0	0	0	6	34.8	30.5
4:00 AM	0	0	3	2	3	2	0	0	0	0	0	0	0	10	34.7	28.8
5:00 AM	0	0	4	2	5	1	0	0	0	0	0	0	0	12	32.0	27.7
6:00 AM	0	2	7	14	8	0	0	0	0	0	0	0	0	31	30.5	26.6
7:00 AM	3	8	16	42	16	2	0	0	0	0	0	0	0	87	30.0	26.0
8:00 AM	18	20	37	26	13	0	0	0	0	0	0	0	0	114	28.0	21.4
9:00 AM	31	37	28	40	8	1	0	0	0	0	0	0	0	145	27.0	20.0
10:00 AM	64	54	54	25	11	4	0	0	0	0	0	0	0	212	26.0	18.4
11:00 AM	94	72	73	35	2	2	0	0	0	0	0	0	0	278	24.0	17.2
12:00 PM	87	81	73	24	7	1	0	0	0	0	0	0	0	273	24.0	17.4
1:00 PM	76	78	88	30	7	0	0	0	0	0	0	0	0	279	24.0	18.1
2:00 PM	48	89	108	58	21	2	0	0	0	0	0	0	0	326	27.0	20.5
3:00 PM	50	65	114	67	14	2	0	0	0	0	0	0	0	312	27.0	20.8
4:00 PM	40	35	75	53	18	0	0	0	0	0	0	0	0	221	27.0	21.2
5:00 PM	29	50	51	41	10	1	0	0	0	0	0	0	0	182	26.0	20.4
6:00 PM	52	52	47	21	3	2	0	0	0	0	0	0	0	177	24.0	17.9
7:00 PM	19	44	30	11	6	2	0	2	0	0	0	0	0	114	26.0	19.7
8:00 PM	11	14	30	25	4	1	0	0	0	0	0	0	0	85	28.0	21.9
9:00 PM	4	6	17	22	14	3	0	0	0	0	0	0	0	66	30.0	24.9
10:00 PM	0	10	6	9	11	1	0	0	0	0	0	0	0	37	31.6	25.2
11:00 PM	0	3	2	6	10	0	1	0	0	0	0	0	0	22	32.0	27.9
Total	627	720	867	562	203	28	1	3	0	0	0	0	0	3011	27.0	20.1
Percent	20.82%	23.91%	28.79%	18.66%	6.74%	0.93%	0.03%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	11:00 AM	11:00 AM	7:00 AM	7:00 AM	10:00 AM		3:00 AM						11:00 AM		
Volume	94	72	73	42	16	4	0	1	0	0	0	0	0	278		
PM Peak	12:00 PM	2:00 PM	3:00 PM	3:00 PM	2:00 PM	9:00 PM	11:00 PM	7:00 PM						2:00 PM		
Volume	87	89	114	67	21	3	1	2	0	0	0	0	0	326		

15th Percentile:	13.0 MPH	Average Speed:	20.1 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	20.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	635
85th Percentile:	27.0 MPH	Number in Pace:	1594	Percent of Vehicles > 25 MPH:	21.1%
95th Percentile:	31.0 MPH	Percent in Pace:	52.9%		

Highland Avenue north of
Great Plain Avenue (Route 135)
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PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Sunday, January 28, 2024

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	1	1	1	5	0	0	0	0	0	0	0	0	8	33.0	28.9
1:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	29.3	27.5
2:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	2	29.0	26.5
3:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	2	31.7	31.0
4:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	32.0	32.0
5:00 AM	0	0	3	2	3	0	0	0	0	0	0	0	0	8	32.9	27.6
6:00 AM	1	0	2	6	8	0	0	0	0	0	0	0	0	17	31.6	27.8
7:00 AM	0	3	10	7	7	0	0	0	0	0	0	0	0	27	31.2	25.5
8:00 AM	0	11	14	15	11	3	0	0	0	0	0	0	0	54	31.0	25.4
9:00 AM	2	8	24	23	13	0	0	0	0	0	0	0	0	70	30.0	24.7
10:00 AM	4	29	34	15	10	3	0	0	0	0	0	0	0	95	28.9	22.3
11:00 AM	10	30	33	18	8	1	0	0	0	0	0	0	0	100	27.0	21.3
12:00 PM	8	20	26	38	5	3	0	0	0	0	0	0	0	100	28.0	23.1
1:00 PM	3	16	37	33	12	1	0	0	0	0	0	0	0	102	29.0	23.9
2:00 PM	2	9	25	28	13	1	0	0	0	0	0	0	0	78	31.0	24.6
3:00 PM	2	6	19	18	6	0	0	0	0	0	0	0	0	51	28.0	23.5
4:00 PM	4	6	17	13	5	1	0	0	0	0	0	0	0	46	28.0	22.8
5:00 PM	4	18	18	12	4	0	0	0	0	0	0	0	0	56	28.0	21.8
6:00 PM	5	14	29	14	4	0	0	0	0	0	0	0	0	66	27.3	22.0
7:00 PM	2	11	17	9	1	0	0	0	0	0	0	0	0	40	26.2	21.8
8:00 PM	1	3	5	3	2	1	0	0	0	0	0	0	0	15	31.6	23.5
9:00 PM	0	0	2	5	0	1	0	0	0	0	0	0	0	8	28.0	27.0
10:00 PM	1	3	5	9	0	0	1	0	0	0	0	0	0	19	27.3	23.6
11:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	17.0	17.0
Total	49	189	322	270	122	15	1	0	0	0	0	0	0	968	29.0	23.4
Percent	5.06%	19.52%	33.26%	27.89%	12.60%	1.55%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	11:00 AM	11:00 AM	10:00 AM	9:00 AM	9:00 AM	8:00 AM								11:00 AM		
Volume	10	30	34	23	13	3	0	0	0	0	0	0	0	100		
PM Peak	12:00 PM	12:00 PM	1:00 PM	12:00 PM	2:00 PM	12:00 PM	10:00 PM							1:00 PM		
Volume	8	20	37	38	13	3	1	0	0	0	0	0	0	102		

15th Percentile:	18.0 MPH	Average Speed:	23.4 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	23.0 MPH	10 MPH Pace:	19 to 28 MPH	Number of Vehicles > 25 MPH:	343
85th Percentile:	29.0 MPH	Number in Pace:	610	Percent of Vehicles > 25 MPH:	35.4%
95th Percentile:	32.0 MPH	Percent in Pace:	63.0%		

Highland Avenue north of
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PDI File #: 239698 ATR-D (Speed)

Count Date
Sunday, January 28, 2024

Speed (60-minute)

EB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	2	0	2	1	0	0	0	0	0	0	0	0	5	29.8	24.4
1:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	2	24.9	20.0
2:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	23.0	23.0
3:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	2	35.4	34.0
4:00 AM	0	0	2	0	2	0	0	0	0	0	0	0	0	4	33.1	27.3
5:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	29.9	29.5
6:00 AM	4	1	3	1	1	2	0	0	0	0	0	0	0	12	33.1	21.3
7:00 AM	2	2	2	6	2	0	0	0	0	0	0	0	0	14	29.1	23.5
8:00 AM	12	6	5	4	2	0	1	0	0	0	0	0	0	30	27.6	17.5
9:00 AM	5	5	3	4	2	1	0	0	0	0	0	0	0	20	28.5	20.1
10:00 AM	27	9	10	8	1	1	0	0	0	0	0	0	0	56	26.0	16.4
11:00 AM	4	6	8	9	2	1	0	0	0	0	0	0	0	30	28.7	22.0
12:00 PM	8	3	3	5	0	0	0	0	0	0	0	0	0	19	28.0	17.9
1:00 PM	6	3	4	4	4	1	0	0	0	0	0	0	0	22	32.0	21.4
2:00 PM	18	8	16	11	2	0	1	0	0	0	0	0	0	56	27.0	19.3
3:00 PM	7	4	6	7	7	0	0	0	0	0	0	0	0	31	30.0	22.6
4:00 PM	2	2	6	13	2	0	0	0	0	0	0	0	0	25	28.0	23.9
5:00 PM	7	3	7	7	0	1	0	0	0	0	0	0	0	25	26.4	20.1
6:00 PM	3	2	4	4	0	0	0	0	0	0	0	0	0	13	28.0	21.2
7:00 PM	0	2	1	0	1	0	0	0	0	0	0	0	0	4	27.4	22.0
8:00 PM	19	1	5	5	2	0	0	0	0	0	0	0	0	32	25.7	15.8
9:00 PM	1	1	2	2	0	0	0	0	0	0	0	0	0	6	27.0	20.2
10:00 PM	0	0	3	0	1	0	0	0	0	0	0	0	0	4	27.4	23.5
11:00 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	2	35.1	33.0
Total	126	60	91	94	35	9	2	0	0	0	0	0	0	417	29.0	20.0
Percent	30.22%	14.39%	21.82%	22.54%	8.39%	2.16%	0.48%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	10:00 AM	10:00 AM	11:00 AM	4:00 AM	6:00 AM	8:00 AM							10:00 AM		
Volume	27	9	10	9	2	2	1	0	0	0	0	0	0	56		
PM Peak	8:00 PM	2:00 PM	2:00 PM	4:00 PM	3:00 PM	1:00 PM	2:00 PM							2:00 PM		
Volume	19	8	16	13	7	1	1	0	0	0	0	0	0	56		

15th Percentile:	11.0 MPH	Average Speed:	20.0 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	21.0 MPH	10 MPH Pace:	20 to 29 MPH	Number of Vehicles > 25 MPH:	124
85th Percentile:	29.0 MPH	Number in Pace:	185	Percent of Vehicles > 25 MPH:	29.7%
95th Percentile:	32.0 MPH	Percent in Pace:	44.4%		

Highland Avenue north of
Great Plain Avenue (Route 135)
City, State: Needham, MA
Client: Nitsch/ B. Zimolka
Site Code: TBA

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Sunday, January 28, 2024

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	3	1	3	6	0	0	0	0	0	0	0	0	13	32.2	27.2
1:00 AM	1	0	0	2	1	0	0	0	0	0	0	0	0	4	28.7	23.8
2:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	3	27.9	25.3
3:00 AM	0	0	0	0	3	1	0	0	0	0	0	0	0	4	34.2	32.5
4:00 AM	0	0	2	0	3	0	0	0	0	0	0	0	0	5	32.8	28.2
5:00 AM	0	0	3	3	4	0	0	0	0	0	0	0	0	10	32.0	28.0
6:00 AM	5	1	5	7	9	2	0	0	0	0	0	0	0	29	32.0	25.1
7:00 AM	2	5	12	13	9	0	0	0	0	0	0	0	0	41	31.0	24.8
8:00 AM	12	17	19	19	13	3	1	0	0	0	0	0	0	84	30.6	22.5
9:00 AM	7	13	27	27	15	1	0	0	0	0	0	0	0	90	30.0	23.7
10:00 AM	31	38	44	23	11	4	0	0	0	0	0	0	0	151	28.0	20.1
11:00 AM	14	36	41	27	10	2	0	0	0	0	0	0	0	130	28.0	21.5
12:00 PM	16	23	29	43	5	3	0	0	0	0	0	0	0	119	28.0	22.3
1:00 PM	9	19	41	37	16	2	0	0	0	0	0	0	0	124	29.0	23.5
2:00 PM	20	17	41	39	15	1	1	0	0	0	0	0	0	134	29.0	22.4
3:00 PM	9	10	25	25	13	0	0	0	0	0	0	0	0	82	29.9	23.2
4:00 PM	6	8	23	26	7	1	0	0	0	0	0	0	0	71	28.0	23.2
5:00 PM	11	21	25	19	4	1	0	0	0	0	0	0	0	81	28.0	21.2
6:00 PM	8	16	33	18	4	0	0	0	0	0	0	0	0	79	28.0	21.8
7:00 PM	2	13	18	9	2	0	0	0	0	0	0	0	0	44	26.6	21.8
8:00 PM	20	4	10	8	4	1	0	0	0	0	0	0	0	47	28.0	18.3
9:00 PM	1	1	4	7	0	1	0	0	0	0	0	0	0	14	28.0	24.1
10:00 PM	1	3	8	9	1	0	1	0	0	0	0	0	0	23	27.7	23.6
11:00 PM	0	1	0	0	1	1	0	0	0	0	0	0	0	3	34.2	27.7
Total	175	249	413	364	157	24	3	0	0	0	0	0	0	1385	29.0	22.4
Percent	12.64%	17.98%	29.82%	26.28%	11.34%	1.73%	0.22%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	10:00 AM	10:00 AM	10:00 AM	9:00 AM	9:00 AM	10:00 AM	8:00 AM							10:00 AM		
Volume	31	38	44	27	15	4	1	0	0	0	0	0	0	151		
PM Peak	2:00 PM	12:00 PM	1:00 PM	12:00 PM	1:00 PM	12:00 PM	2:00 PM							2:00 PM		
Volume	20	23	41	43	16	3	1	0	0	0	0	0	0	134		

15th Percentile:	15.0 MPH	Average Speed:	22.4 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	23.0 MPH	10 MPH Pace:	19 to 28 MPH	Number of Vehicles > 25 MPH:	635
85th Percentile:	29.0 MPH	Number in Pace:	785	Percent of Vehicles > 25 MPH:	45.8%
95th Percentile:	32.0 MPH	Percent in Pace:	56.7%		

Highland Avenue north of
Great Plain Avenue (Route 135)
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Site Code: TBA

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Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Monday, January 29, 2024

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	1	2	0	1	0	0	0	0	0	0	0	0	5	25.8	20.6
1:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	2	28.4	24.5
2:00 AM	2	0	2	0	0	0	0	0	0	0	0	0	0	4	21.0	16.5
3:00 AM	5	7	2	5	0	0	0	0	0	0	0	0	0	19	26.3	19.1
4:00 AM	0	3	6	3	2	0	0	0	0	0	0	0	0	14	29.2	23.7
5:00 AM	0	0	13	9	5	0	0	0	0	0	0	0	0	27	31.0	25.0
6:00 AM	6	10	17	18	4	0	0	0	0	0	0	0	0	55	28.0	22.3
7:00 AM	13	32	65	32	6	1	0	0	0	0	0	0	0	149	26.0	21.7
8:00 AM	12	39	40	23	17	5	0	0	0	0	0	0	0	136	30.8	22.3
9:00 AM	5	27	51	23	15	2	1	0	0	0	0	0	0	124	29.0	23.2
10:00 AM	5	22	35	24	13	0	0	0	0	0	0	0	0	99	28.3	22.8
11:00 AM	2	33	47	26	14	2	2	0	0	0	0	0	0	126	28.3	23.2
12:00 PM	18	24	53	25	4	3	2	0	0	0	0	0	0	129	27.0	21.6
1:00 PM	15	34	51	23	6	1	0	0	0	0	0	0	0	130	26.0	21.0
2:00 PM	10	34	54	17	12	1	0	0	0	0	0	0	0	128	25.0	21.4
3:00 PM	17	39	58	25	10	2	0	1	0	0	0	0	0	152	27.0	21.4
4:00 PM	11	45	63	26	7	0	1	0	0	0	0	0	0	153	26.0	21.3
5:00 PM	17	34	46	7	4	1	0	0	0	0	0	0	0	109	23.8	19.8
6:00 PM	17	43	49	15	4	0	0	0	0	0	0	0	0	128	24.0	19.8
7:00 PM	7	14	27	20	3	0	0	0	0	0	0	0	0	71	28.0	21.9
8:00 PM	0	6	20	15	5	0	0	0	0	0	0	0	0	46	28.0	23.8
9:00 PM	0	4	8	5	3	2	0	0	0	0	0	0	0	22	32.0	25.3
10:00 PM	0	0	3	3	5	2	1	0	0	0	0	0	0	14	35.0	30.1
11:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	2	22.9	22.5
Total	163	452	714	344	141	22	7	1	0	0	0	0	0	1844	27.0	21.8
Percent	8.84%	24.51%	38.72%	18.66%	7.65%	1.19%	0.38%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%			
AM Peak	7:00 AM	8:00 AM	7:00 AM	7:00 AM	8:00 AM	8:00 AM	11:00 AM							7:00 AM		
Volume	13	39	65	32	17	5	2	0	0	0	0	0	0	149		
PM Peak	12:00 PM	4:00 PM	4:00 PM	4:00 PM	2:00 PM	12:00 PM	12:00 PM	3:00 PM						4:00 PM		
Volume	18	45	63	26	12	3	2	1	0	0	0	0	0	153		

15th Percentile:	16.0 MPH	Average Speed:	21.8 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	22.0 MPH	10 MPH Pace:	17 to 26 MPH	Number of Vehicles > 25 MPH:	403
85th Percentile:	27.0 MPH	Number in Pace:	1232	Percent of Vehicles > 25 MPH:	21.9%
95th Percentile:	32.0 MPH	Percent in Pace:	66.8%		

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Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 239698 ATR-D (Speed)

Count Date
Monday, January 29, 2024

Speed (60-minute)

EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21.0	21.0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
2:00 AM	1	1	1	0	0	0	0	0	0	0	0	0	0	3	22.2	17.3
3:00 AM	14	4	0	2	0	0	0	0	0	0	0	0	0	20	18.0	12.7
4:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	25.0	25.0
5:00 AM	0	1	5	0	1	0	0	0	0	0	0	0	0	7	23.7	22.3
6:00 AM	2	1	2	1	1	0	0	0	0	0	0	0	0	7	28.2	20.6
7:00 AM	5	7	12	8	1	0	0	0	0	0	0	0	0	33	27.0	20.8
8:00 AM	23	11	6	9	3	2	0	0	0	0	0	0	0	54	26.0	17.2
9:00 AM	44	16	10	7	2	0	0	0	0	0	0	0	0	79	22.3	14.5
10:00 AM	20	12	9	9	0	0	0	0	0	0	0	0	0	50	25.0	16.7
11:00 AM	40	17	23	7	5	0	0	0	0	0	0	0	0	92	23.4	16.6
12:00 PM	59	25	7	6	2	0	0	0	0	0	0	0	0	99	19.3	14.0
1:00 PM	37	24	16	18	11	0	0	0	0	0	1	0	0	107	28.1	18.8
2:00 PM	52	30	24	10	3	2	0	0	0	0	0	0	0	121	23.0	16.2
3:00 PM	45	24	32	17	5	0	1	0	0	0	0	0	0	124	26.0	18.1
4:00 PM	51	30	10	12	2	1	0	0	0	0	0	0	0	106	24.0	15.4
5:00 PM	54	34	15	6	2	0	0	0	0	0	0	0	0	111	22.0	14.4
6:00 PM	42	19	12	10	0	0	0	0	0	0	0	0	0	83	24.0	15.2
7:00 PM	13	10	15	17	12	0	0	0	0	0	0	0	0	67	30.0	22.1
8:00 PM	8	6	20	15	6	1	0	0	0	0	0	0	0	56	28.8	22.5
9:00 PM	4	3	5	7	6	1	0	0	0	0	0	0	0	26	30.0	23.6
10:00 PM	0	1	0	2	2	1	0	0	0	0	0	0	0	6	32.8	27.7
11:00 PM	0	0	1	1	3	2	1	0	0	0	0	0	0	8	37.9	31.5
Total	514	276	226	165	67	10	2	0	0	0	1	0	0	1261	26.0	17.2
Percent	40.76%	21.89%	17.92%	13.08%	5.31%	0.79%	0.16%	0.00%	0.00%	0.00%	0.08%	0.00%	0.00%			
AM Peak	9:00 AM	11:00 AM	11:00 AM	8:00 AM	11:00 AM	8:00 AM								11:00 AM		
Volume	44	17	23	9	5	2	0	0	0	0	0	0	0	92		
PM Peak	12:00 PM	5:00 PM	3:00 PM	1:00 PM	7:00 PM	2:00 PM	3:00 PM				1:00 PM			3:00 PM		
Volume	59	34	32	18	12	2	1	0	0	0	1	0	0	124		

15th Percentile:	9.0 MPH	Average Speed:	17.2 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	16.0 MPH	10 MPH Pace:	9 to 18 MPH	Number of Vehicles > 25 MPH:	204
85th Percentile:	26.0 MPH	Number in Pace:	588	Percent of Vehicles > 25 MPH:	16.2%
95th Percentile:	30.0 MPH	Percent in Pace:	46.6%		

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PDI File #: 239698 ATR-D (Speed)

Count Date
Monday, January 29, 2024

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	1	1	3	0	1	0	0	0	0	0	0	0	0	6	24.0	20.7
1:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	2	28.4	24.5
2:00 AM	3	1	3	0	0	0	0	0	0	0	0	0	0	7	21.3	16.9
3:00 AM	19	11	2	7	0	0	0	0	0	0	0	0	0	39	25.0	15.8
4:00 AM	0	3	6	4	2	0	0	0	0	0	0	0	0	15	28.8	23.8
5:00 AM	0	1	18	9	6	0	0	0	0	0	0	0	0	34	30.1	24.4
6:00 AM	8	11	19	19	5	0	0	0	0	0	0	0	0	62	28.0	22.1
7:00 AM	18	39	77	40	7	1	0	0	0	0	0	0	0	182	26.9	21.5
8:00 AM	35	50	46	32	20	7	0	0	0	0	0	0	0	190	29.0	20.9
9:00 AM	49	43	61	30	17	2	1	0	0	0	0	0	0	203	26.7	19.8
10:00 AM	25	34	44	33	13	0	0	0	0	0	0	0	0	149	27.0	20.7
11:00 AM	42	50	70	33	19	2	2	0	0	0	0	0	0	218	27.0	20.5
12:00 PM	77	49	60	31	6	3	2	0	0	0	0	0	0	228	25.0	18.3
1:00 PM	52	58	67	41	17	1	0	0	0	0	1	0	0	237	27.0	20.0
2:00 PM	62	64	78	27	15	3	0	0	0	0	0	0	0	249	25.0	18.9
3:00 PM	62	63	90	42	15	2	1	1	0	0	0	0	0	276	26.8	19.9
4:00 PM	62	75	73	38	9	1	1	0	0	0	0	0	0	259	25.0	18.9
5:00 PM	71	68	61	13	6	1	0	0	0	0	0	0	0	220	23.0	17.1
6:00 PM	59	62	61	25	4	0	0	0	0	0	0	0	0	211	24.0	18.0
7:00 PM	20	24	42	37	15	0	0	0	0	0	0	0	0	138	29.0	22.0
8:00 PM	8	12	40	30	11	1	0	0	0	0	0	0	0	102	28.0	23.1
9:00 PM	4	7	13	12	9	3	0	0	0	0	0	0	0	48	31.9	24.4
10:00 PM	0	1	3	5	7	3	1	0	0	0	0	0	0	20	35.0	29.4
11:00 PM	0	0	3	1	3	2	1	0	0	0	0	0	0	10	37.0	29.7
Total	677	728	940	509	208	32	9	1	0	0	1	0	0	3105	27.0	19.9
Percent	21.80%	23.45%	30.27%	16.39%	6.70%	1.03%	0.29%	0.03%	0.00%	0.00%	0.03%	0.00%	0.00%			
AM Peak	9:00 AM	8:00 AM	7:00 AM	7:00 AM	8:00 AM	8:00 AM	11:00 AM							11:00 AM		
Volume	49	50	77	40	20	7	2	0	0	0	0	0	0	218		
PM Peak	12:00 PM	4:00 PM	3:00 PM	3:00 PM	1:00 PM	12:00 PM	12:00 PM	3:00 PM			1:00 PM			3:00 PM		
Volume	77	75	90	42	17	3	2	1	0	0	1	0	0	276		

15th Percentile:	12.0 MPH	Average Speed:	19.9 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	20.0 MPH	10 MPH Pace:	16 to 25 MPH	Number of Vehicles > 25 MPH:	635
85th Percentile:	27.0 MPH	Number in Pace:	1683	Percent of Vehicles > 25 MPH:	20.5%
95th Percentile:	31.0 MPH	Percent in Pace:	54.2%		

MassDOT Yearly Growth Rates

for data from 2014 to 2018

Growth					
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

updated 5/1/2020

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

January - (1.06 + 0.99 + 1.03)/3 = 1.03
April - (0.94 + 0.96 + 0.95)/3 = 0.95
May - (0.93 + 0.91 + 0.92)/3 = 0.92
November - (0.97 + 1.01 + 0.96)/3 = 0.98

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.

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.

5/26/2020

Massachusetts Highway Department

Statewide Traffic Data Collection

2018 Weekday Seasonal Factors

Factor Group	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Axle Factor
R1	1.37	1.26	1.30	1.08	0.97	0.93	0.87	0.83	0.96	0.98	1.05	1.13	0.78
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	0.98
R4-R7	1.10	1.07	1.03	1.00	0.90	0.92	0.94	0.94	0.96	0.94	1.03	1.02	0.93
U1-Boston	1.05	0.98	1.01	0.93	0.92	0.91	0.95	0.93	0.94	0.92	0.96	0.99	0.96
U1-Essex	1.05	1.01	1.04	0.93	0.92	0.89	0.90	0.90	0.94	0.93	0.98	1.01	0.91
U1-Southeast	1.11	1.05	1.07	0.99	0.93	0.89	0.88	0.87	0.93	0.95	1.01	1.05	0.98
U1-West	1.15	1.08	1.07	0.98	0.94	0.92	0.92	0.88	0.92	0.91	1.00	1.06	0.83
U1-Worcester	1.18	1.11	1.09	0.99	0.95	0.94	0.95	0.91	0.97	0.97	1.01	1.05	0.87
U2	1.04	0.99	0.99	0.94	0.92	0.90	0.93	0.91	0.94	0.92	0.96	0.98	0.99
U3	0.99	1.00	1.02	0.96	0.91	0.89	0.92	0.90	0.95	0.92	1.01	0.97	0.97
U4-U7	1.03	1.02	0.97	0.95	0.88	0.89	0.96	0.93	0.94	0.93	1.00	1.00	0.99
Rec - East	1.22	1.15	1.09	1.12	0.90	0.89	0.82	0.83	0.92	0.98	1.06	1.08	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	0.97

Round off:
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1 - Interstate
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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.

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5/26/2020

Massachusetts Highway Department

Statewide Traffic Data Collection

2017 Weekday Seasonal Factors

Factor Group	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Axle Factor
R1	1.30	1.23	1.21	1.04	0.98	0.92	0.86	0.81	0.95	0.99	1.03	1.10	0.80
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	1.05	1.01	1.04	0.99	0.94	0.93	0.91	0.92	0.96	0.94	1.01	1.03	0.97
R4-R7	1.10	1.07	1.09	1.00	0.95	0.89	0.88	0.87	0.92	0.95	1.04	1.09	0.93
U1-Boston	1.01	1.04	0.99	0.94	0.93	0.92	0.96	0.93	0.94	0.93	0.95	0.98	0.95
U1-Essex	1.04	1.05	1.00	0.96	0.93	0.89	0.90	0.90	0.93	0.93	0.98	1.03	0.90
U1-Southeast	1.07	1.05	1.02	0.97	0.95	0.90	0.89	0.88	0.92	0.94	0.98	1.01	0.97
U1-West	1.00	0.96	0.94	0.92	0.93	0.92	0.95	0.93	0.92	0.92	0.97	0.97	0.89
U1-Worcester	1.10	1.10	1.04	0.97	0.95	0.94	0.93	0.91	0.95	0.96	0.98	1.04	0.89
U2	1.01	1.03	0.98	0.95	0.93	0.91	0.94	0.92	0.95	0.95	0.95	0.97	0.98
U3	1.03	1.05	1.01	0.95	0.92	0.90	0.94	0.93	0.93	0.92	0.96	0.99	0.96
U4-U7	1.06	1.05	1.02	0.96	0.92	0.89	0.95	0.95	0.92	0.92	0.98	1.03	0.98
Rec - East	1.18	1.17	1.08	1.03	0.95	0.87	0.83	0.83	0.97	0.98	1.19	1.19	0.98
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	0.95

Round off:
0-999 = 10
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U = Urban
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1 - Interstate
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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.

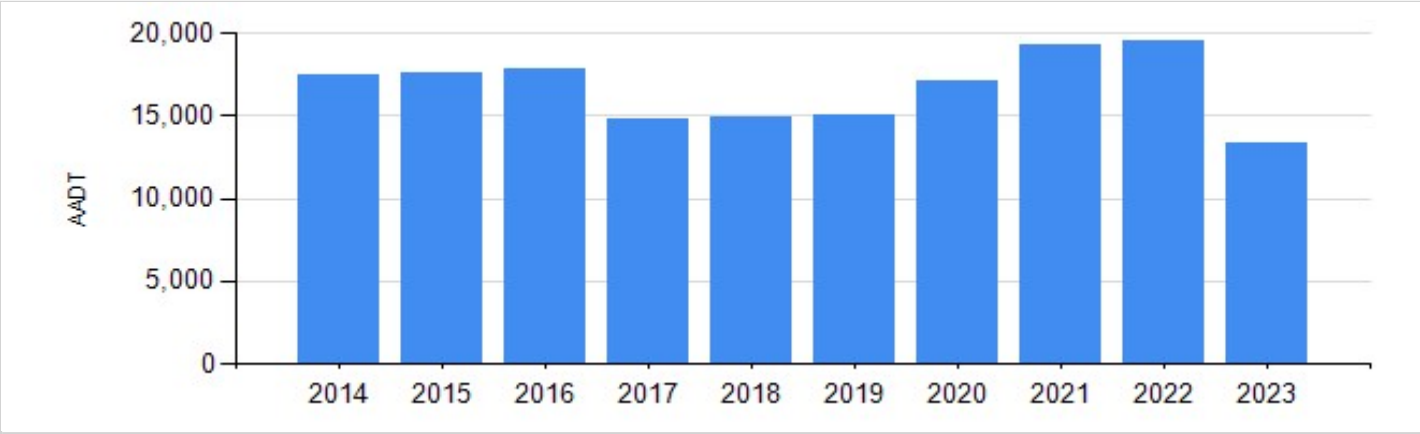
Recreational - West Group - Continuous Stations 2 and 189 including stations 1066,1067,1083,1084,1085,1086,1087,1088,1089,1090,1091,1092,1093,1094,1095,1096,1097,1098,1099,1100,1101,1102,1103,1104,1105,1106,1107,1108,1113,1114,1116,2196,2197 and 2198.

5/26/2020

Massachusetts Highway Department

AADT by Year Comparison for 1/1/2014 - 12/31/2023
Criteria: Location ID = 6738, From 1/1/1900 To 12/31/2049 12:00:00 AM

District:
County: Norfolk
Community: Needham
Location ID: 6738
Located On: HIGHLAND AVENUE
At: ROSEMARY STREET
LRS ID: N066 NB
LRS Point: 0.421958



Year	AADT	% Change YOY
2014	17,439	21.0%
2015	17,631	1.1%
2016	17,860	1.3%
2017	14,785	-17.2%
2018	14,992	1.4%
2019	15,052	0.4%
2020	17,106	13.6%
2021	19,261	12.6%
2022	19,550	1.5%
2023	13,327	-31.8%

NOTE: Red text means percent change is >20%

TRIP GENERATION CALCULATIONS

Trip Generation Summary
ITE TripGeneration Manual, 11th Ed.
Needham MBTA Communities Traffic Impact Analysis: Scenario A (Base Compliance)

			Unadjusted Trips	Internal Capture[1]	External Trips	National VOR[2]	Person Trips	Walk/Other Share[3]	Transit Share[3]	Vehicle Share[3]	Local VOR	Walk/Bike Trips	Transit Trips	Vehicle Trips
Daily	LUC 220[a]	In	749		749		1,251					200	38	607
		Out	749		749	1.67	1,251	16%	3%	81%	1.67	200	38	607
		Total	1,498		1,498		2,502					400	76	1,214
	LUC 221[b]	In			0		0					0	0	0
		Out			0	1.67	0	16%	3%	81%	1.67	0	0	0
		Total			0		0					0	0	0
	TOTAL	In	749		749		1,251					200	38	607
		Out	749		749		1,251					200	38	607
		Total	1,498		1,498		2,502					400	76	1,214
Morning Peak Hour	LUC 220	In	22		22		37					6	1	18
		Out	70		70	1.67	117	16%	3%	81%	1.67	19	4	57
		Total	92		92		154					25	5	75
	LUC 221	In			0		0					0	0	0
		Out			0	1.67	0	16%	3%	81%	1.67	0	0	0
		Total			0		0					0	0	0
	TOTAL	In	22		22		37					6	1	18
		Out	70		70		117					19	4	57
		Total	92		92		154					25	5	75
Evening Peak Hour	LUC 220	In	73		73		122					20	4	59
		Out	43		43	1.67	72	16%	3%	81%	1.67	12	2	35
		Total	116		116		194					32	6	94
	LUC 221	In			0		0					0	0	0
		Out			0	1.67	0	16%	3%	81%	1.67	0	0	0
		Total			0		0					0	0	0
	TOTAL	In	73		73		122					20	4	59
		Out	43		43		72					12	2	35
		Total	116		116		194					32	6	94

[a] Land Use Code (LUC) 220 - Multifamily Housing (Low-Rise); Average Vehicle Trips Ends vs Dwelling Units; Independent Variable (X) = 222

[b] Land Use Code (LUC) 221 - Multifamily Housing (Mid-Rise); Average Vehicle Trips Ends vs Dwelling Units; Independent Variable (X) = 0

[1] National Cooperative Highway Research Program (NCHRP). (2011). NCHRP Report 684: Internal Trip Capture Estimation Tool (Spreadsheet).

[2] United States Department of Transportation. (2017). Summary of Travel Trends, 2017 National Household Travel Survey, Table 16. Average Vehicle Occupancy for Selected Trip Purposes.

[3] Mode Shares based Traffic Data Set for the Town of Needham." Replica, 2024.

Trip Generation Summary
ITE TripGeneration Manual, 11th Ed.
Needham MBTA Communities Traffic Impact Analysis: Scenario B (Neighborhood Housing)

			Unadjusted Trips	Internal Capture[1]	External Trips	National VOR[2]	Person Trips	Walk/Other Share[3]	Transit Share[3]	Vehicle Share[3]	Local VOR	Walk/Bike Trips	Transit Trips	Vehicle Trips
Daily	LUC 220[a]	In	2,387		2,387		3,986					638	120	1,933
		Out	2,387		2,387	1.67	3,986	16%	3%	81%	1.67	638	120	1,933
		Total	4,774		4,774		7,972					1,276	240	3,866
	LUC 221[b]	In	850		850		1,420					227	43	689
		Out	850		850	1.67	1,420	16%	3%	81%	1.67	227	43	689
		Total	1,700		1,700		2,840					454	86	1,378
	TOTAL	In	3,237		3,237		5,406					865	163	2,622
		Out	3,237		3,237		5,406					865	163	2,622
		Total	6,474		6,474		10,812					1,730	326	5,244
Morning Peak Hour	LUC 220	In	60		60		100					16	3	49
		Out	190		190	1.67	317	16%	3%	81%	1.67	51	10	154
		Total	250		250		417					67	13	203
	LUC 221	In	34		34		57					9	2	28
		Out	115		115	1.67	192	16%	3%	81%	1.67	31	6	93
		Total	149		149		249					40	8	121
	TOTAL	In	94		94		157					25	5	77
		Out	305		305		509					82	16	247
		Total	399		399		666					107	21	324
Evening Peak Hour	LUC 220	In	212		212		354					57	11	172
		Out	124		124	1.67	207	16%	3%	81%	1.67	33	6	100
		Total	336		336		561					90	17	272
	LUC 221	In	87		87		145					23	4	70
		Out	56		56	1.67	94	16%	3%	81%	1.67	15	3	46
		Total	143		143		239					38	7	116
	TOTAL	In	299		299		499					80	15	242
		Out	180		180		301					48	9	146
		Total	479		479		800					128	24	388

[a] Land Use Code (LUC) 220 - Multifamily Housing (Low-Rise); Average Vehicle Trips Ends vs Dwelling Units; Independent Variable (X) = 733

[b] Land Use Code (LUC) 221 - Multifamily Housing (Mid-Rise); Average Vehicle Trips Ends vs Dwelling Units; Independent Variable (X) = 366

[1] National Cooperative Highway Research Program (NCHRP). (2011). NCHRP Report 684: Internal Trip Capture Estimation Tool (Spreadsheet).

[2] United States Department of Transportation. (2017). Summary of Travel Trends, 2017 National Household Travel Survey, Table 16. Average Vehicle Occupancy for Selected Trip Purposes.

[3] Mode Shares based Traffic Data Set for the Town of Needham." Replica, 2024.

Scenario A: Base Compliance

Institute of Transportation Engineers (ITE)

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

General Urban/Suburban

Average Vehicle Trips Ends vs: Dwelling Units
Independent Variable (X): 222

AVERAGE WEEKDAY DAILY

T = 6.41 * (X) + 75.31
T = 6.41 * 222 + 75.31
T = 1498.33
T = 1,498 vehicle trips
with 50% (749 vpd) entering and 50% (749 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.31 * (X) + 22.85
T = 0.31 * 222 + 22.85
T = 91.67
T = 92 vehicle trips
with 24% (22 vph) entering and 76% (70 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.43 * (X) + 20.55
T = 0.43 * 222 + 20.55
T = 116.01
T = 116 vehicle trips
with 63% (73 vph) entering and 37% (43 vph) exiting.

SATURDAY DAILY

T = 4.55 * (X)
T = 4.55 * 222
T = 1010.10
T = 1,010 vehicle trips
with 50% (505 vpd) entering and 50% (505 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 0.41 * (X)
T = 0.41 * 222
T = 91.02
T = 91 vehicle trips
*with 51% (46 vph) entering and 49% (45 vph) exiting.

** Distribution not given for Sat Midday Peak Hour, used distribution from LUC 221 - Dwelling Units*

Scenario B: Neighborhood Housing Plan

Institute of Transportation Engineers (ITE)

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

General Urban/Suburban

Average Vehicle Trips Ends vs: Dwelling Units
Independent Variable (X): 733

AVERAGE WEEKDAY DAILY

T = 6.41 * (X) + 75.31
T = 6.41 * 733 + 75.31
T = 4773.84
T = 4,774 vehicle trips
with 50% (2,387 vpd) entering and 50% (### vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.31 * (X) + 22.85
T = 0.31 * 733 + 22.85
T = 250.08
T = 250 vehicle trips
with 24% (60 vph) entering and 76% (190 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.43 * (X) + 20.55
T = 0.43 * 733 + 20.55
T = 335.74
T = 336 vehicle trips
with 63% (212 vph) entering and 37% (124 vph) exiting.

SATURDAY DAILY

T = 4.55 * (X)
T = 4.55 * 733
T = 3335.15
T = 3,336 vehicle trips
with 50% (1,668 vpd) entering and 50% (### vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 0.41 * (X)
T = 0.41 * 733
T = 300.53
T = 301 vehicle trips
*with 51% (154 vph) entering and 49% (147 vph) exiting.

** Distribution not given for Sat Midday Peak Hour, used distribution from LUC 221 - Dwelling Units*

Scenario B: Neighborhood Housing Plan

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 221 - Multifamily Housing (Mid-Rise)

General Urban/Suburban

Average Vehicle Trips Ends vs: Dwelling Units
Independent Variable (X): 366

AVERAGE WEEKDAY DAILY

T = 4.77 * (X) - 46.46
T = 4.77 * 366 - 46.46
T = 1699.36
T = 1,700 vehicle trips
with 50% (850 vpd) entering and 50% (850 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.44 * (X) - 11.61
T = 0.44 * 366 - 11.61
T = 149.43
T = 149 vehicle trips
with 23% (34 vph) entering and 77% (115 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.39 * (X) + 0.34
T = 0.39 * 366 + 0.34
T = 143.08
T = 143 vehicle trips
with 61% (87 vph) entering and 39% (56 vph) exiting.

SATURDAY DAILY

Ln T = 0.94 Ln (X) + 1.84
Ln T = 0.94 Ln(366) + 1.84
Ln T = 7.39
T = 1617.24
T = 1,618 vehicle trips
with 50% (809 vpd) entering and 50% (809 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

Ln T = 1.00 Ln (X) - 0.91
Ln T = 1.00 Ln(366) - 0.91
Ln T = 4.99
T = 147.32
T = 147 vehicle trips
with 51% (75 vpd) entering and 49% (72 vpd) exiting.

SYNCHRO OUTPUTS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	161	26	15	164	227	41	394	19	141	457	43
Future Volume (vph)	82	161	26	15	164	227	41	394	19	141	457	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	10	10	12	10	10	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00	0.98	1.00				1.00	
Frt		0.981				0.850		0.991			0.988	
Flt Protected		0.984			0.997		0.950			0.950		
Satd. Flow (prot)	0	3088	0	0	1679	1507	1636	1737	0	1685	1730	0
Flt Permitted		0.728			0.953		0.420			0.147		
Satd. Flow (perm)	0	2284	0	0	1604	1474	722	1737	0	261	1730	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								3				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			193			991			1083	
Travel Time (s)		8.6			4.4			22.5			24.6	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.80	0.93	0.66	0.91	0.73	0.53	0.67	0.66	0.52	0.47	0.81	0.91
Heavy Vehicles (%)	4%	4%	12%	10%	5%	0%	3%	1%	4%	0%	1%	2%
Adj. Flow (vph)	103	173	39	16	225	428	61	597	37	300	564	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	315	0	0	241	428	61	634	0	300	611	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.09	1.09	1.09	1.09	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phase	4	4		8	8	5	6	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	10.0	10.0		6.0	10.0	
Minimum Split (s)	12.5	12.5		12.5	12.5	10.0	17.5	17.5		10.0	17.5	
Total Split (s)	22.0	22.0		22.0	22.0	10.0	30.0	30.0		10.0	40.0	
Total Split (%)	24.4%	24.4%		24.4%	24.4%	11.1%	33.3%	33.3%		11.1%	44.4%	
Maximum Green (s)	15.5	15.5		15.5	15.5	6.0	22.5	22.5		6.0	32.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	31%
Maximum Green (s)	24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	0.0	3.5	3.5		0.0	3.5	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.3			14.3	23.1	23.1	23.1		37.0	33.4	
Actuated g/C Ratio		0.22			0.22	0.35	0.35	0.35		0.56	0.50	
v/c Ratio		0.64			0.69	0.83	0.24	1.04		1.08	0.70	
Control Delay		32.6			38.6	35.3	22.9	73.9		96.1	21.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		32.6			38.6	35.3	22.9	73.9		96.1	21.7	
LOS		C			D	D	C	E		F	C	
Approach Delay		32.6			36.5			69.4			46.2	
Approach LOS		C			D			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 66.2			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 48.3		Intersection LOS: D	
Intersection Capacity Utilization 75.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Highland Ave & Webster St

Lane Group	Ø9
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

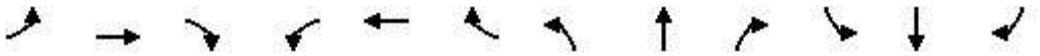
Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	315	241	428	61	634	300	611
v/c Ratio	0.64	0.69	0.83	0.24	1.04	1.08	0.70
Control Delay	32.6	38.6	35.3	22.9	73.9	96.1	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	38.6	35.3	22.9	73.9	96.1	21.7
Queue Length 50th (ft)	54	80	116	16	~233	~71	155
Queue Length 95th (ft)	#159	#186	172	47	#448	#97	#467
Internal Link Dist (ft)	299	113			911		1003
Turn Bay Length (ft)				60			
Base Capacity (vph)	549	385	516	252	608	278	872
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.63	0.83	0.24	1.04	1.08	0.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

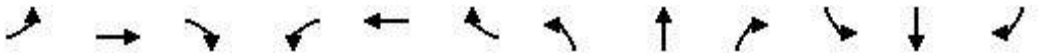
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	161	26	15	164	227	41	394	19	141	457	43
Future Volume (vph)	82	161	26	15	164	227	41	394	19	141	457	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	12	10	10	10	10	12	10	10	12
Total Lost time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Lane Util. Factor		0.95			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.98			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3088			1678	1485	1634	1737		1685	1731	
Flt Permitted		0.73			0.95	1.00	0.42	1.00		0.15	1.00	
Satd. Flow (perm)		2286			1605	1485	723	1737		261	1731	
Peak-hour factor, PHF	0.80	0.93	0.66	0.91	0.73	0.53	0.67	0.66	0.52	0.47	0.81	0.91
Adj. Flow (vph)	102	173	39	16	225	428	61	597	37	300	564	47
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	315	0	0	241	428	61	632	0	300	611	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	4%	12%	10%	5%	0%	3%	1%	4%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		14.3			14.3	20.5	23.2	23.2		33.4	33.4	
Effective Green, g (s)		14.3			14.3	20.5	23.2	23.2		33.4	33.4	
Actuated g/C Ratio		0.21			0.21	0.30	0.34	0.34		0.48	0.48	
Clearance Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		472			331	439	242	582		253	835	
v/s Ratio Prot						c0.09		0.36		c0.11	0.35	
v/s Ratio Perm		0.14			0.15	0.20	0.08			c0.47		
v/c Ratio		0.67			0.73	0.97	0.25	1.09		1.19	0.73	
Uniform Delay, d1		25.3			25.6	24.1	16.7	23.0		15.4	14.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.8			6.6	36.0	0.2	62.7		116.3	2.9	
Delay (s)		28.0			32.3	60.1	16.9	85.7		131.6	17.2	
Level of Service		C			C	E	B	F		F	B	
Approach Delay (s)		28.0			50.1			79.7			54.9	
Approach LOS		C			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	57.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	22.0
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	66	65	4	49	16	106	386	13	9	432	59
Future Volume (vph)	32	66	65	4	49	16	106	386	13	9	432	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	11	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.951			0.950			0.994			0.983	
Flt Protected		0.989			0.996			0.989			0.999	
Satd. Flow (prot)	0	1594	0	0	1530	0	0	1656	0	0	1672	0
Flt Permitted		0.989			0.996			0.989			0.999	
Satd. Flow (perm)	0	1594	0	0	1530	0	0	1656	0	0	1672	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		695			444			621			443	
Travel Time (s)		15.8			10.1			14.1			10.1	
Confl. Peds. (#/hr)	1								1			
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.60	0.65	0.73	0.50	0.80	0.40	0.69	0.80	0.46	0.75	0.90	0.81
Heavy Vehicles (%)	0%	5%	6%	0%	4%	0%	4%	5%	8%	0%	4%	3%
Adj. Flow (vph)	53	102	89	8	61	40	154	483	28	12	480	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	244	0	0	109	0	0	665	0	0	565	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	1.14	1.10	1.14	1.14	1.19	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 86.7%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	102.9

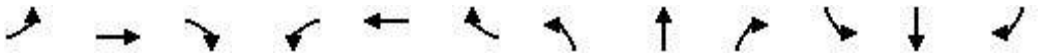
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	66	65	4	49	16	106	386	13	9	432	59
Future Vol, veh/h	32	66	65	4	49	16	106	386	13	9	432	59
Conflicting Peds, #/hr	1	0	0	0	0	0	0	0	1	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	65	73	50	80	40	69	80	46	75	90	81
Heavy Vehicles, %	0	5	6	0	4	0	4	5	8	0	4	3
Mvmt Flow	53	102	89	8	61	40	154	483	28	12	480	73

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1398	1361	517	1442	1383	499	553	0	0	512	0	0
Stage 1	541	541	-	806	806	-	-	-	-	-	-	-
Stage 2	857	820	-	636	577	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.55	6.26	7.1	6.54	6.2	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.55	-	6.1	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.55	-	6.1	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.045	3.354	3.5	4.036	3.3	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	119	146	550	111	142	576	1007	-	-	1064	-	-
Stage 1	529	516	-	379	392	-	-	-	-	-	-	-
Stage 2	355	385	-	469	498	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 52	113	550	18	110	575	1007	-	-	1063	-	-
Mov Cap-2 Maneuver	~ 52	113	-	18	110	-	-	-	-	-	-	-
Stage 1	416	508	-	298	308	-	-	-	-	-	-	-
Stage 2	208	302	-	309	490	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 577.2	187.7	2.1	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1007	-	-	117	102	1063	-	-
HCM Lane V/C Ratio	0.153	-	-	2.085	1.071	0.011	-	-
HCM Control Delay (s)	9.2	0	-	$ 577.2	187.7	8.4	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.5	-	-	20.4	6.9	0	-	-

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



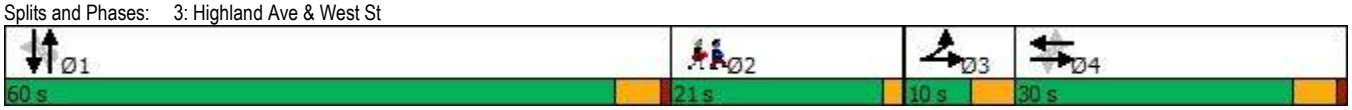
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	202	28	17	128	37	18	351	27	15	300	169
Future Volume (vph)	159	202	28	17	128	37	18	351	27	15	300	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	9	10	12	12	13	12	12	13	12
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.99	0.99			0.99			0.99	
Frt		0.974			0.968			0.990			0.946	
Flt Protected	0.950			0.950				0.997			0.998	
Satd. Flow (prot)	1462	1479	0	1037	1468	0	0	1658	0	0	1576	0
Flt Permitted	0.469			0.593				0.953			0.969	
Satd. Flow (perm)	720	1479	0	641	1468	0	0	1584	0	0	1529	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		455			303			836			621	
Travel Time (s)		10.3			6.9			19.0			14.1	
Confl. Peds. (#/hr)	2		6	6		2	5		46	46		5
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.89	0.90	0.61	0.53	0.78	0.82	0.64	0.74	0.72	0.63	0.87	0.69
Heavy Vehicles (%)	0%	1%	0%	41%	6%	0%	6%	5%	0%	0%	5%	5%
Adj. Flow (vph)	179	224	46	32	164	45	28	474	38	24	345	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	270	0	32	209	0	0	540	0	0	614	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)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.14	1.30	1.25	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Detector Phase	3	3 4		4	4		1	1		1	1	
Switch Phase												
Minimum Initial (s)	6.0			6.0	6.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.0			11.0	11.0		15.0	15.0		15.0	15.0	
Total Split (s)	10.0			30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	8.3%			24.8%	24.8%		49.6%	49.6%		49.6%	49.6%	
Maximum Green (s)	6.0			25.0	25.0		55.0	55.0		55.0	55.0	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	17%
Maximum Green (s)	19.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0			4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0			1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.0			5.0	5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			4.0	4.0		2.0	2.0		2.0	2.0	
Recall Mode	None			None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	28.2	32.7		20.5	20.5			45.6			45.6	
Actuated g/C Ratio	0.29	0.33		0.21	0.21			0.46			0.46	
v/c Ratio	0.70	0.55		0.24	0.69			0.74			0.87	
Control Delay	50.5	37.2		44.8	53.2			31.0			40.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	50.5	37.2		44.8	53.2			31.0			40.6	
LOS	D	D		D	D			C			D	
Approach Delay		42.5			52.0			31.0			40.6	
Approach LOS		D			D			C			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 121			
Actuated Cycle Length: 98.5			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 39.7		Intersection LOS: D	
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Highland Ave & West St



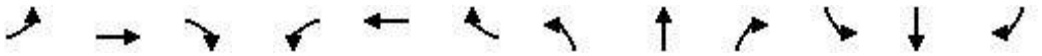
Lane Group	Ø2
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	29
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	179	270	32	209	540	614
v/c Ratio	0.70	0.55	0.24	0.69	0.74	0.87
Control Delay	50.5	37.2	44.8	53.2	31.0	40.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	37.2	44.8	53.2	31.0	40.6
Queue Length 50th (ft)	112	181	21	152	336	421
Queue Length 95th (ft)	#216	276	30	201	355	#617
Internal Link Dist (ft)		375		223	756	541
Turn Bay Length (ft)			150			
Base Capacity (vph)	256	596	179	411	976	942
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.45	0.18	0.51	0.55	0.65

Intersection Summary

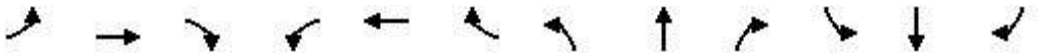
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	202	28	17	128	37	18	351	27	15	300	169
Future Volume (vph)	159	202	28	17	128	37	18	351	27	15	300	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	12	9	10	12	12	13	12	12	13	12
Total Lost time (s)	4.0	4.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.97			0.99			0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1460	1480		1027	1467			1659			1575	
Flt Permitted	0.47	1.00		0.59	1.00			0.95			0.97	
Satd. Flow (perm)	720	1480		641	1467			1585			1530	
Peak-hour factor, PHF	0.89	0.90	0.61	0.53	0.78	0.82	0.64	0.74	0.72	0.63	0.87	0.69
Adj. Flow (vph)	179	224	46	32	164	45	28	474	38	24	345	245
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	179	270	0	32	209	0	0	540	0	0	614	0
Confl. Peds. (#/hr)	2		6	6		2	5		46	46		5
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	1%	0%	41%	6%	0%	6%	5%	0%	0%	5%	5%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Actuated Green, G (s)	27.1	31.1		20.5	20.5			45.6			45.6	
Effective Green, g (s)	27.1	31.1		20.5	20.5			45.6			45.6	
Actuated g/C Ratio	0.28	0.32		0.21	0.21			0.47			0.47	
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	
Vehicle Extension (s)	2.0			4.0	4.0			2.0			2.0	
Lane Grp Cap (vph)	248	469		134	306			737			711	
v/s Ratio Prot	c0.05	0.18			0.14							
v/s Ratio Perm	c0.15			0.05				0.34			c0.40	
v/c Ratio	0.72	0.58		0.24	0.68			0.73			0.86	
Uniform Delay, d1	31.2	27.9		32.3	35.8			21.3			23.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	8.5	1.1		1.3	6.7			3.3			10.3	
Delay (s)	39.7	29.0		33.5	42.4			24.5			33.7	
Level of Service	D	C		C	D			C			C	
Approach Delay (s)		33.2			41.3			24.5			33.7	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	0	158	49	53	18	101	398	0	0	324	27
Future Volume (vph)	19	0	158	49	53	18	101	398	0	0	324	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	9	11	9	12	11	13	12	12	16	12
Storage Length (ft)	0		25	50		0	60		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.90		0.95	0.99		0.99				1.00	
Frt		0.880			0.964						0.989	
Flt Protected		0.995		0.950			0.950					
Satd. Flow (prot)	0	1207	0	1570	1438	0	1540	1683	0	0	1831	0
Flt Permitted		0.944		0.446			0.420					
Satd. Flow (perm)	0	1143	0	699	1438	0	676	1683	0	0	1831	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		232			17							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1036			474			1055			1271	
Travel Time (s)		23.5			10.8			24.0			28.9	
Confl. Peds. (#/hr)	8		46	46		8	12		17	17		12
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.68	0.92	0.68	0.60	0.59	0.64	0.75	0.83	0.92	0.92	0.79	0.72
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%	2%	5%	0%	0%	4%	8%
Adj. Flow (vph)	28	0	232	82	90	28	135	480	0	0	410	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	260	0	82	118	0	135	480	0	0	448	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)		11			11			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.30	1.19	1.30	1.14	1.19	1.10	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2			2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	20	100		20	100		20	100			100	
Trailing Detector (ft)	0	0		0	0		0	0			0	
Detector 1 Position(ft)	0	0		0	0		0	0			0	
Detector 1 Size(ft)	20	6		20	6		20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0			12.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0			40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%			44.4%	
Maximum Green (s)	23.0	23.0		23.0	23.0		33.0	33.0			33.0	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		Max	Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		13.2		13.2	13.2		34.6	34.6			34.6	
Actuated g/C Ratio		0.18		0.18	0.18		0.48	0.48			0.48	
v/c Ratio		0.66		0.65	0.43		0.42	0.60			0.51	
Control Delay		14.7		53.8	29.6		24.1	23.0			20.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		14.7		53.8	29.6		24.1	23.0			20.4	
LOS		B		D	C		C	C			C	
Approach Delay		14.7			39.5			23.2			20.4	
Approach LOS		B			D			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 72.8			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 23.1		Intersection LOS: C	
Intersection Capacity Utilization 66.6%		ICU Level of Service C	
Analysis Period (min) 15			

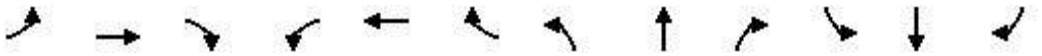
Splits and Phases: 4: Highland Ave & Rosemary St

Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	41
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	260	82	118	135	480	448
v/c Ratio	0.66	0.65	0.43	0.42	0.60	0.51
Control Delay	14.7	53.8	29.6	24.1	23.0	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	53.8	29.6	24.1	23.0	20.4
Queue Length 50th (ft)	12	39	46	49	195	172
Queue Length 95th (ft)	83	53	55	95	320	262
Internal Link Dist (ft)	956		394		975	1191
Turn Bay Length (ft)		50		60		
Base Capacity (vph)	534	231	488	321	800	871
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.35	0.24	0.42	0.60	0.51

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	0	158	49	53	18	101	398	0	0	324	27
Future Volume (vph)	19	0	158	49	53	18	101	398	0	0	324	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	9	11	9	12	11	13	12	12	16	12
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		0.87		1.00	0.99		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		0.94	1.00		0.99	1.00			1.00	
Frt		0.88		1.00	0.96		1.00	1.00			0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1160		1469	1437		1530	1683			1831	
Flt Permitted		0.94		0.45	1.00		0.42	1.00			1.00	
Satd. Flow (perm)		1101		690	1437		676	1683			1831	
Peak-hour factor, PHF	0.68	0.92	0.68	0.60	0.59	0.64	0.75	0.83	0.92	0.92	0.79	0.72
Adj. Flow (vph)	28	0	232	82	90	28	135	480	0	0	410	38
RTOR Reduction (vph)	0	190	0	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	70	0	82	104	0	135	480	0	0	448	0
Confl. Peds. (#/hr)	8		46	46		8	12		17	17		12
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%	2%	5%	0%	0%	4%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		13.2		13.2	13.2		34.6	34.6			34.6	
Effective Green, g (s)		13.2		13.2	13.2		34.6	34.6			34.6	
Actuated g/C Ratio		0.18		0.18	0.18		0.47	0.47			0.47	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		198		124	259		319	796			866	
v/s Ratio Prot					0.07			c0.29			0.24	
v/s Ratio Perm		0.06		c0.12			0.20					
v/c Ratio		0.35		0.66	0.40		0.42	0.60			0.52	
Uniform Delay, d1		26.2		27.9	26.5		12.7	14.2			13.4	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.1		12.5	1.0		4.1	3.4			2.2	
Delay (s)		27.3		40.3	27.5		16.8	17.6			15.6	
Level of Service		C		D	C		B	B			B	
Approach Delay (s)		27.3			32.8			17.4			15.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	73.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

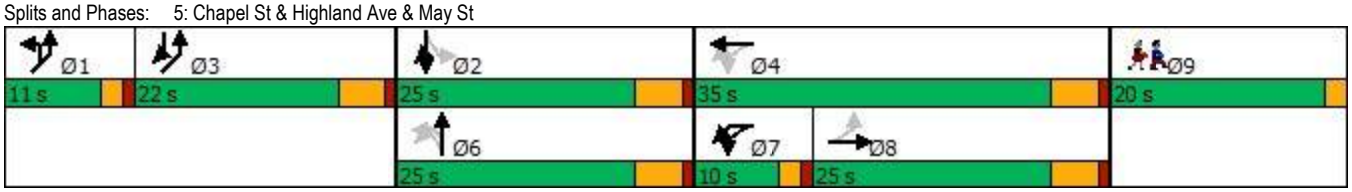
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	78	122	33	12	28	35	149	48	2	9	156	18
Future Volume (vph)	78	122	33	12	28	35	149	48	2	9	156	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12	10	12	12	12	16	12
Storage Length (ft)	0		0			0		0		0		0
Storage Lanes	0		0			0		0		0		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					0.99				1.00	
Frt		0.978					0.974				0.984	
Flt Protected		0.985					0.987				0.997	
Satd. Flow (prot)	0	1666	0	0	0	0	1492	0	0	0	1823	0
Flt Permitted		0.667					0.734				0.972	
Satd. Flow (perm)	0	1126	0	0	0	0	1109	0	0	0	1777	0
Right Turn on Red				No				Yes				No
Satd. Flow (RTOR)							10					
Link Speed (mph)		30					30				30	
Link Distance (ft)		453					923				945	
Travel Time (s)		10.3					21.0				21.5	
Confl. Peds. (#/hr)	7							7		3		2
Peak Hour Factor	0.72	0.62	0.92	0.50	0.64	0.55	0.65	0.60	0.50	0.56	0.64	0.50
Heavy Vehicles (%)	0%	3%	0%	8%	0%	0%	4%	0%	0%	0%	4%	6%
Adj. Flow (vph)	108	197	36	24	44	64	229	80	4	16	244	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	365	0	0	0	0	417	0	0	0	300	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Left	Left	Right
Median Width(ft)		0					0				0	
Link Offset(ft)		0					0				0	
Crosswalk Width(ft)		16					16				16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2		1	1	2	
Detector Template	Left	Thru			Left	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100		20	20	100	
Trailing Detector (ft)	0	0			0	0	0		0	0	0	
Detector 1 Position(ft)	0	0			0	0	0		0	0	0	
Detector 1 Size(ft)	20	6			20	20	6		20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Detector Phase	8	8			7	7	4		6	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0			2.0	2.0	6.0		6.0	6.0	6.0	
Minimum Split (s)	11.0	11.0			6.0	6.0	11.0		11.0	11.0	11.0	
Total Split (s)	25.0	25.0			10.0	10.0	35.0		25.0	25.0	25.0	
Total Split (%)	22.1%	22.1%			8.8%	8.8%	31.0%		22.1%	22.1%	22.1%	
Maximum Green (s)	20.0	20.0			7.0	7.0	30.0		20.0	20.0	20.0	
Yellow Time (s)	4.0	4.0			2.0	2.0	4.0		4.0	4.0	4.0	

Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Lane Configurations										
Traffic Volume (vph)	14	117	171	81	10	243	35	8		
Future Volume (vph)	14	117	171	81	10	243	35	8		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	10	11	12	10	11	11	11		
Storage Length (ft)	0		120			0	60			
Storage Lanes	0		1			2	1			
Taper Length (ft)	25					25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00				0.99				
Frt			0.850			0.970				
Flt Protected		0.994			0.950	0.962				
Satd. Flow (prot)	0	1533	1352	0	1516	1447	0	0		
Flt Permitted		0.877			0.950	0.962				
Satd. Flow (perm)	0	1352	1352	0	1516	1436	0	0		
Right Turn on Red				No				Yes		
Satd. Flow (RTOR)						116				
Link Speed (mph)		30				30				
Link Distance (ft)		644				580				
Travel Time (s)		14.6				13.2				
Confl. Peds. (#/hr)	2			3		7	2			
Peak Hour Factor	0.70	0.79	0.91	0.81	0.63	0.91	0.63	0.67		
Heavy Vehicles (%)	7%	3%	6%	0%	0%	7%	3%	0%		
Adj. Flow (vph)	20	148	188	100	16	267	56	12		
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	168	288	0	16	335	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Right	Left	Left	Right	Right		
Median Width(ft)		0				21				
Link Offset(ft)		0				0				
Crosswalk Width(ft)		16				16				
Two way Left Turn Lane										
Headway Factor	1.14	1.25	1.19	1.14	1.25	1.19	1.19	1.19		
Turning Speed (mph)	15		9	9	15	15	9	9		
Number of Detectors	1	2	1		1	1				
Detector Template	Left	Thru	Right		Left	Left				
Leading Detector (ft)	20	100	20		20	20				
Trailing Detector (ft)	0	0	0		0	0				
Detector 1 Position(ft)	0	0	0		0	0				
Detector 1 Size(ft)	20	6	20		20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)		94								
Detector 2 Size(ft)		6								
Detector 2 Type		Cl+Ex								
Detector 2 Channel										
Detector 2 Extend (s)		0.0								
Turn Type	Perm	NA	custom		Prot	Prot				
Protected Phases		2	2 3		1	1 3			3	9
Permitted Phases	2									
Detector Phase	2	2	2 3		1	1 3				
Switch Phase										
Minimum Initial (s)	6.0	6.0			1.0				4.0	5.0
Minimum Split (s)	11.0	11.0			6.0				9.0	20.0
Total Split (s)	25.0	25.0			11.0				22.0	20.0
Total Split (%)	22.1%	22.1%			9.7%				19%	18%
Maximum Green (s)	20.0	20.0			8.0				17.0	18.0
Yellow Time (s)	4.0	4.0			2.0				4.0	2.0

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0				0.0	
Total Lost Time (s)		5.0					5.0				5.0	
Lead/Lag	Lag	Lag			Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None			None	None	None		Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		30.2					30.2				19.9	
Actuated g/C Ratio		0.32					0.32				0.21	
v/c Ratio		1.03					1.17				0.81	
Control Delay		90.0					133.7				56.0	
Queue Delay		0.0					0.0				0.0	
Total Delay		90.0					133.7				56.0	
LOS		F					F				E	
Approach Delay		90.0					133.7				56.0	
Approach LOS		F					F				E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 113			
Actuated Cycle Length: 95.7			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.17			
Intersection Signal Delay: 68.7		Intersection LOS: E	
Intersection Capacity Utilization 69.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: Chapel St & Highland Ave & May St



Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
All-Red Time (s)	1.0	1.0			1.0				1.0	0.0
Lost Time Adjust (s)		0.0			0.0					
Total Lost Time (s)		5.0			3.0					
Lead/Lag					Lead				Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0
Recall Mode	Min	Min			None				None	None
Walk Time (s)										7.0
Flash Dont Walk (s)										11.0
Pedestrian Calls (#/hr)										12
Act Effct Green (s)		19.9	40.9		8.1	29.1				
Actuated g/C Ratio		0.21	0.43		0.08	0.30				
v/c Ratio		0.60	0.50		0.13	0.64				
Control Delay		46.4	25.0		46.7	26.0				
Queue Delay		0.0	0.0		0.0	0.0				
Total Delay		46.4	25.0		46.7	26.0				
LOS		D	C		D	C				
Approach Delay		32.8				27.0				
Approach LOS		C				C				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR	NEL2	NEL
Lane Group Flow (vph)	365	417	300	168	288	16	335
v/c Ratio	1.03	1.17	0.81	0.60	0.50	0.13	0.64
Control Delay	90.0	133.7	56.0	46.4	25.0	46.7	26.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.0	133.7	56.0	46.4	25.0	46.7	26.0
Queue Length 50th (ft)	~216	~287	168	89	115	9	107
Queue Length 95th (ft)	#283	#367	214	166	258	23	258
Internal Link Dist (ft)	373	843	865	564			500
Turn Bay Length (ft)					120		
Base Capacity (vph)	355	357	374	284	567	127	536
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	1.17	0.80	0.59	0.51	0.13	0.63

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	78	122	33	12	28	35	149	48	2	9	156	18
Future Volume (vph)	78	122	33	12	28	35	149	48	2	9	156	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12	10	12	12	12	16	12
Total Lost time (s)		5.0					5.0				5.0	
Lane Util. Factor		1.00					1.00				1.00	
Frpb, ped/bikes		1.00					0.99				1.00	
Flpb, ped/bikes		1.00					1.00				1.00	
Frt		0.98					0.97				0.98	
Flt Protected		0.99					0.99				1.00	
Satd. Flow (prot)		1665					1493				1822	
Flt Permitted		0.67					0.73				0.97	
Satd. Flow (perm)		1126					1110				1776	
Peak-hour factor, PHF	0.72	0.62	0.92	0.50	0.64	0.55	0.65	0.60	0.50	0.56	0.64	0.50
Adj. Flow (vph)	108	197	36	24	44	64	229	80	4	16	244	36
RTOR Reduction (vph)	0	0	0	0	0	0	7	0	0	0	0	0
Lane Group Flow (vph)	0	365	0	0	0	0	410	0	0	0	300	0
Confl. Peds. (#/hr)	7							7		3		2
Heavy Vehicles (%)	0%	3%	0%	8%	0%	0%	4%	0%	0%	0%	4%	6%
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Actuated Green, G (s)		30.2					30.2				19.9	
Effective Green, g (s)		30.2					30.2				19.9	
Actuated g/C Ratio		0.31					0.31				0.20	
Clearance Time (s)		5.0					5.0				5.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		349					344				363	
v/s Ratio Prot												
v/s Ratio Perm		0.32					c0.37				c0.17	
v/c Ratio		1.05					1.19				0.83	
Uniform Delay, d1		33.5					33.5				37.0	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		60.7					111.6				14.2	
Delay (s)		94.2					145.1				51.2	
Level of Service		F					F				D	
Approach Delay (s)		94.2					145.1				51.2	
Approach LOS		F					F				D	

Intersection Summary			
HCM 2000 Control Delay	71.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	97.2	Sum of lost time (s)	23.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	14	117	171	81	10	243	35	8
Future Volume (vph)	14	117	171	81	10	243	35	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	10	11	11	11
Total Lost time (s)		5.0	5.0		3.0	3.0		
Lane Util. Factor		1.00	1.00		1.00	1.00		
Frpb, ped/bikes		1.00	1.00		1.00	1.00		
Flpb, ped/bikes		1.00	1.00		1.00	1.00		
Frt		1.00	0.85		1.00	0.97		
Flt Protected		0.99	1.00		0.95	0.96		
Satd. Flow (prot)		1533	1352		1516	1446		
Flt Permitted		0.88	1.00		0.95	0.96		
Satd. Flow (perm)		1352	1352		1516	1446		
Peak-hour factor, PHF	0.70	0.79	0.91	0.81	0.63	0.91	0.63	0.67
Adj. Flow (vph)	20	148	188	100	16	267	56	12
RTOR Reduction (vph)	0	0	0	0	0	84	0	0
Lane Group Flow (vph)	0	168	288	0	16	251	0	0
Confl. Peds. (#/hr)	2			3		7	2	
Heavy Vehicles (%)	7%	3%	6%	0%	0%	7%	3%	0%
Turn Type	Perm	NA	custom		Prot	Prot		
Protected Phases		2	2 3		1	1 3		
Permitted Phases	2							
Actuated Green, G (s)		19.9	40.9		8.1	27.1		
Effective Green, g (s)		19.9	40.9		8.1	27.1		
Actuated g/C Ratio		0.20	0.42		0.08	0.28		
Clearance Time (s)		5.0			3.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		276	568		126	403		
v/s Ratio Prot			0.21		0.01	c0.17		
v/s Ratio Perm		0.12						
v/c Ratio		0.61	0.51		0.13	0.62		
Uniform Delay, d1		35.1	20.7		41.3	30.6		
Progression Factor		1.00	1.00		1.00	1.00		
Incremental Delay, d2		3.8	0.7		0.5	3.0		
Delay (s)		38.9	21.4		41.7	33.6		
Level of Service		D	C		D	C		
Approach Delay (s)		27.9				34.0		
Approach LOS		C				C		

Intersection Summary

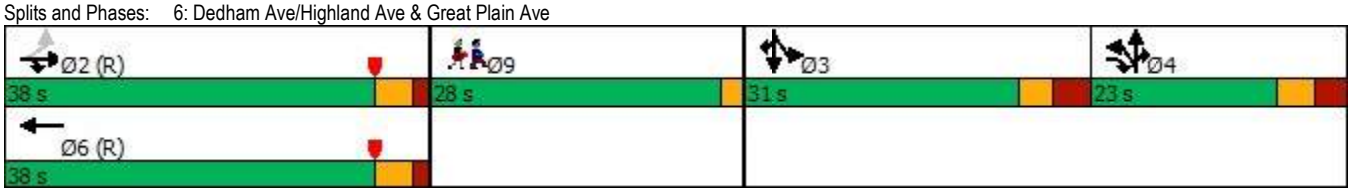
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	245	244	0	298	66	238	146	22	27	78	28
Future Volume (vph)	50	245	244	0	298	66	238	146	22	27	78	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	10	10	10	10	10	10	10	10	12
Storage Length (ft)	0		0	0		0	0		35	0		90
Storage Lanes	0		1	0		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt			0.850		0.967				0.850			0.850
Flt Protected		0.992					0.950				0.986	
Satd. Flow (prot)	0	1557	1338	0	2783	0	1458	1565	1292	0	1498	1358
Flt Permitted		0.813					0.950				0.986	
Satd. Flow (perm)	0	1274	1338	0	2783	0	1455	1565	1292	0	1497	1358
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									95			95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		238			434			312			945	
Travel Time (s)		5.4			9.9			7.1			21.5	
Confl. Peds. (#/hr)	11		4	4		11	1		2	2		1
Peak Hour Factor	0.68	0.62	0.77	0.92	0.92	0.71	0.87	0.81	0.69	0.65	0.73	0.52
Heavy Vehicles (%)	0%	2%	5%	0%	4%	6%	4%	2%	5%	0%	7%	7%
Adj. Flow (vph)	74	395	317	0	324	93	274	180	32	42	107	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	469	317	0	417	0	274	180	32	0	149	54
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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1		2		1	2	1	1	2	1
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20		100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20		6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Detector Phase	2	2	2 4		6		4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0			10.0		11.5	11.5	11.5	11.5	11.5	11.5
Total Split (s)	38.0	38.0			38.0		23.0	23.0	23.0	31.0	31.0	31.0
Total Split (%)	31.7%	31.7%			31.7%		19.2%	19.2%	19.2%	25.8%	25.8%	25.8%
Maximum Green (s)	33.0	33.0			33.0		16.5	16.5	16.5	24.5	24.5	24.5
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5	3.0	3.0	3.0

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	26.0
Yellow Time (s)	2.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	1.5	1.5			1.5		3.0	3.0	3.0	3.5	3.5	3.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Lead/Lag							Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Min	C-Min			C-Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		41.6	81.4		41.6		33.4	33.4	33.4		16.3	16.3
Actuated g/C Ratio		0.35	0.68		0.35		0.28	0.28	0.28		0.14	0.14
v/c Ratio		1.06	0.35		0.43		0.68	0.41	0.07		0.73	0.20
Control Delay		85.5	5.8		33.2		51.3	43.1	0.3		69.9	3.3
Queue Delay		14.4	1.2		0.1		0.6	0.0	0.0		0.0	0.0
Total Delay		99.9	7.1		33.4		51.9	43.1	0.3		69.9	3.3
LOS		F	A		C		D	D	A		E	A
Approach Delay		62.5			33.4			45.3			52.2	
Approach LOS		E			C			D			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.06			
Intersection Signal Delay: 50.5		Intersection LOS: D	
Intersection Capacity Utilization 69.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Dedham Ave/Highland Ave & Great Plain Ave



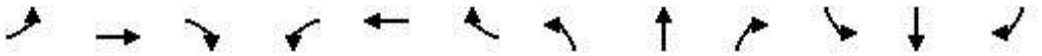
Lane Group	Ø9
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	469	317	417	274	180	32	149	54
v/c Ratio	1.06	0.35	0.43	0.68	0.41	0.07	0.73	0.20
Control Delay	85.5	5.8	33.2	51.3	43.1	0.3	69.9	3.3
Queue Delay	14.4	1.2	0.1	0.6	0.0	0.0	0.0	0.0
Total Delay	99.9	7.1	33.4	51.9	43.1	0.3	69.9	3.3
Queue Length 50th (ft)	340	24	114	184	111	0	112	0
Queue Length 95th (ft)	#371	65	198	#407	191	0	137	0
Internal Link Dist (ft)	158		354		232		865	
Turn Bay Length (ft)						35		90
Base Capacity (vph)	441	908	963	405	435	428	305	352
Starvation Cap Reductn	43	384	0	0	0	0	0	0
Spillback Cap Reductn	0	0	86	20	0	0	0	5
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.60	0.48	0.71	0.41	0.07	0.49	0.16

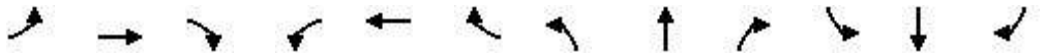
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	245	244	0	298	66	238	146	22	27	78	28
Future Volume (vph)	50	245	244	0	298	66	238	146	22	27	78	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	11	10	10	10	10	10	10	10	10	12
Total Lost time (s)		5.0	5.0		5.0		6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00		1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)		1555	1338		2784		1458	1565	1292		1498	1358
Flt Permitted		0.81	1.00		1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)		1274	1338		2784		1458	1565	1292		1498	1358
Peak-hour factor, PHF	0.68	0.62	0.77	0.92	0.92	0.71	0.87	0.81	0.69	0.65	0.73	0.52
Adj. Flow (vph)	74	395	317	0	324	93	274	180	32	42	107	54
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	23	0	0	47
Lane Group Flow (vph)	0	469	317	0	417	0	274	180	9	0	149	7
Confl. Peds. (#/hr)	11		4	4		11	1		2	2		1
Heavy Vehicles (%)	0%	2%	5%	0%	4%	6%	4%	2%	5%	0%	7%	7%
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Actuated Green, G (s)		40.3	80.2		40.3		33.4	33.4	33.4		16.3	16.3
Effective Green, g (s)		40.3	73.7		40.3		33.4	33.4	33.4		16.3	16.3
Actuated g/C Ratio		0.34	0.61		0.34		0.28	0.28	0.28		0.14	0.14
Clearance Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		2.0			2.0		2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		427	821		934		405	435	359		203	184
v/s Ratio Prot			0.24		0.15		c0.19	0.12	0.01		c0.10	0.01
v/s Ratio Perm		c0.37										
v/c Ratio		1.10	0.39		0.45		0.68	0.41	0.02		0.73	0.04
Uniform Delay, d1		39.9	11.7		31.1		38.5	35.3	31.5		49.8	45.1
Progression Factor		0.65	0.39		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		68.6	0.1		1.5		3.5	0.2	0.0		11.2	0.0
Delay (s)		94.7	4.7		32.7		42.0	35.5	31.5		61.0	45.1
Level of Service		F	A		C		D	D	C		E	D
Approach Delay (s)		58.4			32.7			38.9			56.7	
Approach LOS		E			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	47.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



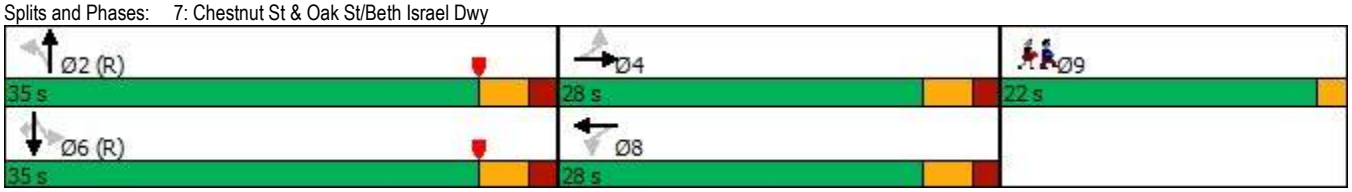
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	8	67	7	5	13	105	490	9	21	245	65
Future Volume (vph)	73	8	67	7	5	13	105	490	9	21	245	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	8	8	11	11	11	9	9	12	12	9	9
Storage Length (ft)	0		0	0		0	80		0	0		150
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.939			0.930			0.997				0.850
Flt Protected		0.976			0.985		0.950				0.996	
Satd. Flow (prot)	0	1332	0	0	1485	0	1433	1504	0	0	1503	1283
Flt Permitted		0.841			0.925		0.538				0.944	
Satd. Flow (perm)	0	1147	0	0	1394	0	812	1504	0	0	1424	1283
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								1				71
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			314			227			439	
Travel Time (s)		13.8			7.1			5.2			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	9	73	8	5	14	114	533	10	23	266	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	161	0	0	27	0	114	543	0	0	289	71
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			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.19	1.19	1.19	1.30	1.30	1.14	1.14	1.30	1.30
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	28.0	28.0		28.0	28.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	32.9%	32.9%		32.9%	32.9%		41.2%	41.2%		41.2%	41.2%	41.2%
Maximum Green (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	30.0
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0			5.0	5.0

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	22.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		23.0			23.0		43.2	43.2			43.2	43.2
Actuated g/C Ratio		0.27			0.27		0.51	0.51			0.51	0.51
v/c Ratio		0.52			0.07		0.28	0.71			0.40	0.10
Control Delay		33.4			23.8		18.6	27.5			18.5	5.5
Queue Delay		0.0			0.0		0.0	0.0			0.0	0.0
Total Delay		33.4			23.8		18.6	27.5			18.5	5.5
LOS		C			C		B	C			B	A
Approach Delay		33.4			23.8			25.9			15.9	
Approach LOS		C			C			C			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 23.9		Intersection LOS: C	
Intersection Capacity Utilization 73.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Chestnut St & Oak St/Beth Israel Dwy



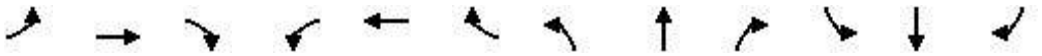
Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	161	27	114	543	289	71
v/c Ratio	0.52	0.07	0.28	0.71	0.40	0.10
Control Delay	33.4	23.8	18.6	27.5	18.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	23.8	18.6	27.5	18.5	5.5
Queue Length 50th (ft)	73	11	25	159	68	0
Queue Length 95th (ft)	136	31	93	#508	206	27
Internal Link Dist (ft)	526	234		147	359	
Turn Bay Length (ft)			80			150
Base Capacity (vph)	310	377	412	764	723	686
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.07	0.28	0.71	0.40	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	8	67	7	5	13	105	490	9	21	245	65
Future Volume (vph)	73	8	67	7	5	13	105	490	9	21	245	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	11	11	11	9	9	12	12	9	9
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	1.00
Frt		0.94			0.93		1.00	1.00			1.00	0.85
Flt Protected		0.98			0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1331			1485		1433	1505			1503	1282
Flt Permitted		0.84			0.92		0.54	1.00			0.94	1.00
Satd. Flow (perm)		1147			1394		812	1505			1424	1282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	9	73	8	5	14	114	533	10	23	266	71
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	36
Lane Group Flow (vph)	0	161	0	0	27	0	114	542	0	0	289	35
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		23.0			23.0		42.0	42.0			42.0	42.0
Effective Green, g (s)		23.0			23.0		42.0	42.0			42.0	42.0
Actuated g/C Ratio		0.27			0.27		0.49	0.49			0.49	0.49
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		310			377		401	743			703	633
v/s Ratio Prot								c0.36				
v/s Ratio Perm		c0.14			0.02		0.14				0.20	0.03
v/c Ratio		0.52			0.07		0.28	0.73			0.41	0.06
Uniform Delay, d1		26.3			23.1		12.7	17.0			13.6	11.2
Progression Factor		1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		6.1			0.4		1.8	6.2			1.8	0.2
Delay (s)		32.4			23.4		14.4	23.2			15.4	11.3
Level of Service		C			C		B	C			B	B
Approach Delay (s)		32.4			23.4			21.7			14.6	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

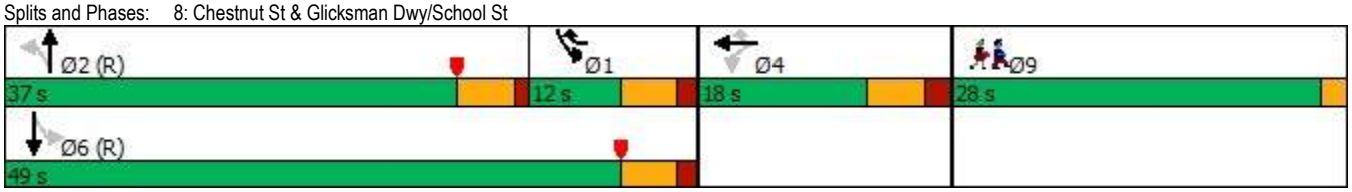
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	150	4	48	5	417	212	46	184	4
Future Volume (vph)	0	0	0	150	4	48	5	417	212	46	184	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	9	13	9	12	12	9	12	12
Storage Length (ft)	0		0	0		150	40		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			70			70			100		
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						0.850		0.949			0.997	
Flt Protected					0.953		0.950			0.950		
Satd. Flow (prot)	0	0	0	0	1438	1473	1433	1591	0	1433	1671	0
Flt Permitted					0.953		0.630			0.232		
Satd. Flow (perm)	0	0	0	0	1438	1473	951	1591	0	350	1671	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						52		29			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		162			420			439			782	
Travel Time (s)		3.7			9.5			10.0			17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	163	4	52	5	453	230	50	200	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	167	52	5	683	0	50	204	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.30	1.30	1.10	1.30	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2		1	2	
Detector Template				Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)				20	100	20	20	100		20	100	
Trailing Detector (ft)				0	0	0	0	0		0	0	
Detector 1 Position(ft)				0	0	0	0	0		0	0	
Detector 1 Size(ft)				20	6	20	20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Detector Phase				4	4	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)				6.0	6.0	6.0	2.0	2.0		6.0	10.0	
Minimum Split (s)				12.0	12.0	11.5	7.0	7.0		11.5	15.5	
Total Split (s)				18.0	18.0	12.0	37.0	37.0		12.0	49.0	
Total Split (%)				18.9%	18.9%	12.6%	38.9%	38.9%		12.6%	51.6%	
Maximum Green (s)				12.0	12.0	6.5	32.0	32.0		6.5	43.5	
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)				2.0	2.0	1.5	1.0	1.0		1.5	1.5	
Lost Time Adjust (s)					0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	29%
Maximum Green (s)	26.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag						Lag	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode				None	None	None	C-Min	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					12.0	21.9	51.4	51.4		61.5	60.3	
Actuated g/C Ratio					0.13	0.23	0.54	0.54		0.65	0.63	
v/c Ratio					0.92	0.14	0.01	0.78		0.17	0.19	
Control Delay					92.6	8.9	19.4	30.4		15.5	11.2	
Queue Delay					0.0	0.0	0.0	14.4		0.0	0.0	
Total Delay					92.6	8.9	19.4	44.8		15.5	11.2	
LOS					F	A	B	D		B	B	
Approach Delay					72.7			44.6			12.0	
Approach LOS					E			D			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 95			
Actuated Cycle Length: 95			
Offset: 9 (9%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 42.8		Intersection LOS: D	
Intersection Capacity Utilization 61.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 8: Chestnut St & Glicksman Dwy/School St



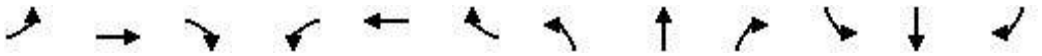
Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	167	52	5	683	50	204
v/c Ratio	0.92	0.14	0.01	0.78	0.17	0.19
Control Delay	92.6	8.9	19.4	30.4	15.5	11.2
Queue Delay	0.0	0.0	0.0	14.4	0.0	0.0
Total Delay	92.6	8.9	19.4	44.8	15.5	11.2
Queue Length 50th (ft)	101	0	1	225	6	28
Queue Length 95th (ft)	#224	29	10	#723	38	122
Internal Link Dist (ft)	340			359		702
Turn Bay Length (ft)		150	40		115	
Base Capacity (vph)	181	349	514	874	301	1060
Starvation Cap Reductn	0	0	0	184	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.15	0.01	0.99	0.17	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	150	4	48	5	417	212	46	184	4
Future Volume (vph)	0	0	0	150	4	48	5	417	212	46	184	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	9	9	13	9	12	12	9	12	12
Total Lost time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frt					1.00	0.85	1.00	0.95		1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1439	1472	1433	1592		1433	1672	
Flt Permitted					0.95	1.00	0.63	1.00		0.23	1.00	
Satd. Flow (perm)					1439	1472	950	1592		351	1672	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	163	4	52	5	453	230	50	200	4
RTOR Reduction (vph)	0	0	0	0	0	43	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	167	9	5	669	0	50	204	0
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Actuated Green, G (s)					12.0	17.0	49.1	49.1		59.1	59.1	
Effective Green, g (s)					12.0	17.0	49.1	49.1		59.1	59.1	
Actuated g/C Ratio					0.13	0.18	0.52	0.52		0.62	0.62	
Clearance Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Vehicle Extension (s)					3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)					181	348	491	822		275	1040	
v/s Ratio Prot						0.00		c0.42		0.01	c0.12	
v/s Ratio Perm					0.12	0.00	0.01			0.10		
v/c Ratio					0.92	0.03	0.01	0.81		0.18	0.20	
Uniform Delay, d1					41.0	32.2	11.1	19.1		19.9	7.7	
Progression Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2					45.1	0.0	0.0	8.7		0.3	0.4	
Delay (s)					86.1	32.2	11.2	27.8		20.2	8.1	
Level of Service					F	C	B	C		C	A	
Approach Delay (s)		0.0			73.3			27.7			10.5	
Approach LOS		A			E			C			B	

Intersection Summary				
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	18.5	
Intersection Capacity Utilization	61.5%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	139	589	542	27	4	129
Future Volume (vph)	139	589	542	27	4	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.993		0.871	
Flt Protected		0.990			0.998	
Satd. Flow (prot)	0	2932	2944	0	1371	0
Flt Permitted		0.990			0.998	
Satd. Flow (perm)	0	2932	2944	0	1371	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		180	394		416	
Travel Time (s)		4.1	9.0		9.5	
Confl. Peds. (#/hr)	23			23		
Peak Hour Factor	0.75	0.77	0.84	0.81	0.50	0.78
Heavy Vehicles (%)	4%	2%	2%	8%	0%	5%
Adj. Flow (vph)	185	765	645	33	8	165
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	950	678	0	173	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.25	1.25	1.25	1.19	1.19
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.4%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	139	589	542	27	4	129
Future Vol, veh/h	139	589	542	27	4	129
Conflicting Peds, #/hr	23	0	0	23	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	77	84	81	50	78
Heavy Vehicles, %	4	2	2	8	0	5
Mvmt Flow	185	765	645	33	8	165

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	701	0	-	0	1438	362
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	753	-
Critical Hdwy	4.18	-	-	-	6.8	7
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.24	-	-	-	3.5	3.35
Pot Cap-1 Maneuver	879	-	-	-	126	626
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	431	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	861	-	-	-	76	613
Mov Cap-2 Maneuver	-	-	-	-	76	-
Stage 1	-	-	-	-	286	-
Stage 2	-	-	-	-	422	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	17.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	861	-	-	-	462
HCM Lane V/C Ratio	0.215	-	-	-	0.375
HCM Control Delay (s)	10.3	1.3	-	-	17.4
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	0.8	-	-	-	1.7

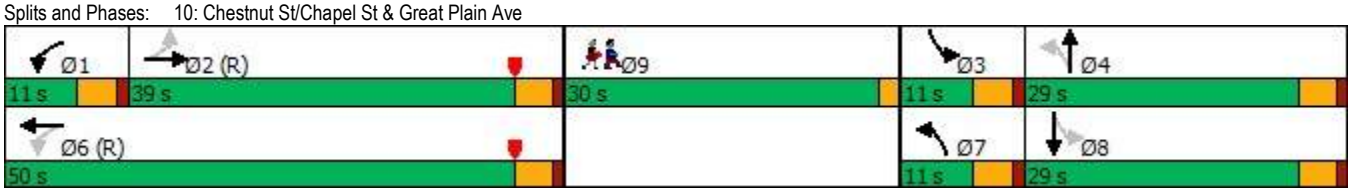
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	473	67	75	450	39	87	245	50	16	135	32
Future Volume (vph)	53	473	67	75	450	39	87	245	50	16	135	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	175		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.983			0.989			0.975			0.959	
Flt Protected		0.995			0.993		0.950			0.950		
Satd. Flow (prot)	0	2861	0	0	2876	0	1444	1527	0	1430	1483	0
Flt Permitted		0.757			0.658		0.409			0.374		
Satd. Flow (perm)	0	2177	0	0	1906	0	621	1527	0	563	1483	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			238			782			424	
Travel Time (s)		9.0			5.4			17.8			9.6	
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.66	0.76	0.76	0.75	0.83	0.75	0.81	0.88	0.89	0.50	0.91	0.57
Heavy Vehicles (%)	8%	2%	9%	3%	4%	0%	5%	6%	2%	6%	4%	13%
Adj. Flow (vph)	80	622	88	100	542	52	107	278	56	32	148	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	790	0	0	694	0	107	334	0	32	204	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.19	1.19	1.25	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	29.0		11.0	29.0	
Total Split (%)	32.5%	32.5%		9.2%	41.7%		9.2%	24.2%		9.2%	24.2%	
Maximum Green (s)	34.5	34.5		6.5	45.5		6.5	24.5		6.5	24.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	30.0
Total Split (%)	25%
Maximum Green (s)	28.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		63.8			63.8		40.9	34.3		34.3	27.1	
Actuated g/C Ratio		0.53			0.53		0.34	0.29		0.29	0.23	
v/c Ratio		0.68			0.69		0.38	0.77		0.15	0.61	
Control Delay		27.0			15.3		31.9	53.0		27.6	50.6	
Queue Delay		1.0			0.4		0.0	0.0		0.0	0.0	
Total Delay		28.0			15.7		31.9	53.0		27.6	50.6	
LOS		C			B		C	D		C	D	
Approach Delay		28.0			15.7			47.9			47.4	
Approach LOS		C			B			D			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 30.2		Intersection LOS: C	
Intersection Capacity Utilization 73.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 10: Chestnut St/Chapel St & Great Plain Ave



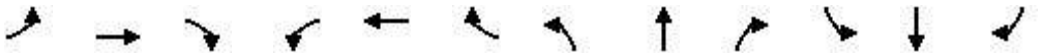
Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	790	694	107	334	32	204
v/c Ratio	0.68	0.69	0.38	0.77	0.15	0.61
Control Delay	27.0	15.3	31.9	53.0	27.6	50.6
Queue Delay	1.0	0.4	0.0	0.0	0.0	0.0
Total Delay	28.0	15.7	31.9	53.0	27.6	50.6
Queue Length 50th (ft)	228	152	53	232	15	135
Queue Length 95th (ft)	312	#356	96	#456	23	234
Internal Link Dist (ft)	314	158		702		344
Turn Bay Length (ft)			175		100	
Base Capacity (vph)	1156	1013	282	436	215	341
Starvation Cap Reductn	0	61	0	0	0	0
Spillback Cap Reductn	160	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.73	0.38	0.77	0.15	0.60

Intersection Summary

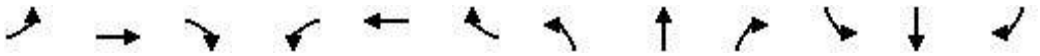
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	473	67	75	450	39	87	245	50	16	135	32
Future Volume (vph)	53	473	67	75	450	39	87	245	50	16	135	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	11	11	10	11	11
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.97		1.00	0.96	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2863			2875		1444	1527		1430	1483	
Flt Permitted		0.76			0.66		0.41	1.00		0.37	1.00	
Satd. Flow (perm)		2178			1906		622	1527		564	1483	
Peak-hour factor, PHF	0.66	0.76	0.76	0.75	0.83	0.75	0.81	0.88	0.89	0.50	0.91	0.57
Adj. Flow (vph)	80	622	88	100	542	52	107	278	56	32	148	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	790	0	0	694	0	107	334	0	32	204	0
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	8%	2%	9%	3%	4%	0%	5%	6%	2%	6%	4%	13%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		60.4			60.4		43.6	34.3		33.6	28.8	
Effective Green, g (s)		60.4			60.4		43.6	34.3		33.6	28.8	
Actuated g/C Ratio		0.50			0.50		0.36	0.29		0.28	0.24	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1096			959		296	436		192	355	
v/s Ratio Prot							c0.03	c0.22		0.01	0.14	
v/s Ratio Perm		0.36			c0.36		0.10			0.04		
v/c Ratio		0.72			0.72		0.36	0.77		0.17	0.57	
Uniform Delay, d1		23.2			23.3		26.9	39.2		32.2	40.2	
Progression Factor		1.00			0.44		1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.1			2.4		0.8	7.9		0.4	2.2	
Delay (s)		27.3			12.6		27.7	47.0		32.6	42.4	
Level of Service		C			B		C	D		C	D	
Approach Delay (s)		27.3			12.6			42.3			41.1	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	116	7	142	95	5	7	2	122	9	1	4
Future Volume (vph)	1	116	7	142	95	5	7	2	122	9	1	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	14	12	12	13	12	12	10	12
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
Ped Bike Factor												
Frt		0.994			0.997			0.881			0.961	
Flt Protected		0.999			0.972			0.995			0.972	
Satd. Flow (prot)	0	1738	0	0	1721	0	0	1503	0	0	1491	0
Flt Permitted		0.999			0.972			0.995			0.972	
Satd. Flow (perm)	0	1738	0	0	1721	0	0	1503	0	0	1491	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		521			453			566			491	
Travel Time (s)		11.8			10.3			12.9			11.2	
Confl. Peds. (#/hr)	1		3	3		1						
Peak Hour Factor	0.25	0.71	0.88	0.70	0.66	0.63	0.44	0.50	0.80	0.56	0.25	0.50
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	14%	0%	2%	0%	0%	0%
Adj. Flow (vph)	4	163	8	203	144	8	16	4	153	16	4	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	175	0	0	355	0	0	173	0	0	28	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	1.14	1.10	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	116	7	142	95	5	7	2	122	9	1	4
Future Vol, veh/h	1	116	7	142	95	5	7	2	122	9	1	4
Conflicting Peds, #/hr	1	0	3	3	0	1	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	25	71	88	70	66	63	44	50	80	56	25	50
Heavy Vehicles, %	0	1	0	4	1	0	14	0	2	0	0	0
Mvmt Flow	4	163	8	203	144	8	16	4	153	16	4	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	153	0	0	174	0	0	738	737	170	809	737	149
Stage 1	-	-	-	-	-	-	178	178	-	555	555	-
Stage 2	-	-	-	-	-	-	560	559	-	254	182	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.24	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.24	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.24	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.626	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1440	-	-	1391	-	-	319	348	874	301	348	903
Stage 1	-	-	-	-	-	-	797	756	-	520	516	-
Stage 2	-	-	-	-	-	-	492	514	-	755	753	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1439	-	-	1387	-	-	273	290	871	215	290	902
Mov Cap-2 Maneuver	-	-	-	-	-	-	273	290	-	215	290	-
Stage 1	-	-	-	-	-	-	792	751	-	518	433	-
Stage 2	-	-	-	-	-	-	406	431	-	618	748	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	4.6	11.8	18.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	698	1439	-	-	1387	-	-	288
HCM Lane V/C Ratio	0.247	0.003	-	-	0.146	-	-	0.097
HCM Control Delay (s)	11.8	7.5	0	-	8	0	-	18.8
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1	0	-	-	0.5	-	-	0.3

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	159	134	118	59	62	48
Future Volume (vph)	159	134	118	59	62	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.963		0.942	
Flt Protected		0.979			0.972	
Satd. Flow (prot)	0	1667	1518	0	1624	0
Flt Permitted		0.979			0.972	
Satd. Flow (perm)	0	1667	1518	0	1624	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		525	1036		802	
Travel Time (s)		11.9	23.5		18.2	
Confl. Peds. (#/hr)	4			4		1
Peak Hour Factor	0.90	0.56	0.59	0.78	0.74	0.75
Heavy Vehicles (%)	1%	0%	1%	2%	2%	4%
Adj. Flow (vph)	177	239	200	76	84	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	416	276	0	148	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.25	1.25	1.05	1.05
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	159	134	118	59	62	48
Future Vol, veh/h	159	134	118	59	62	48
Conflicting Peds, #/hr	4	0	0	4	0	1
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	90	56	59	78	74	75
Heavy Vehicles, %	1	0	1	2	2	4
Mvmt Flow	177	239	200	76	84	64

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	280	0	-	0	835	243
Stage 1	-	-	-	-	242	-
Stage 2	-	-	-	-	593	-
Critical Hdwy	4.11	-	-	-	6.42	6.24
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.209	-	-	-	3.518	3.336
Pot Cap-1 Maneuver	1288	-	-	-	338	791
Stage 1	-	-	-	-	798	-
Stage 2	-	-	-	-	552	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1282	-	-	-	282	787
Mov Cap-2 Maneuver	-	-	-	-	282	-
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	550	-

Approach	EB	WB	SB
HCM Control Delay, s	3.5	0	19.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1282	-	-	-	391
HCM Lane V/C Ratio	0.138	-	-	-	0.378
HCM Control Delay (s)	8.3	0	-	-	19.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.5	-	-	-	1.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	317	22	90	206	29	8	61	78	8	65	16
Future Volume (vph)	25	317	22	90	206	29	8	61	78	8	65	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	12	12	14	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.990			0.985			0.928			0.974	
Flt Protected		0.995			0.985			0.997			0.996	
Satd. Flow (prot)	0	1486	0	0	1729	0	0	1596	0	0	1616	0
Flt Permitted		0.995			0.985			0.997			0.996	
Satd. Flow (perm)	0	1486	0	0	1729	0	0	1596	0	0	1616	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		459			455			883			496	
Travel Time (s)		10.4			10.3			20.1			11.3	
Confl. Peds. (#/hr)	14		7	7		14	2		3	3		2
Peak Hour Factor	0.63	0.90	0.69	0.70	0.81	0.60	0.67	0.66	0.65	0.67	0.63	0.57
Heavy Vehicles (%)	0%	2%	5%	2%	3%	0%	0%	2%	3%	25%	2%	13%
Adj. Flow (vph)	40	352	32	129	254	48	12	92	120	12	103	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	424	0	0	431	0	0	224	0	0	143	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	1.14	1.30	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.7%		ICU Level of Service B	
Analysis Period (min) 15			

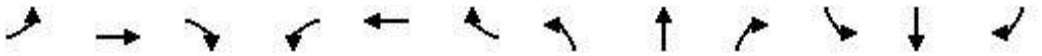
Intersection	
Int Delay, s/veh	18.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	317	22	90	206	29	8	61	78	8	65	16
Future Vol, veh/h	25	317	22	90	206	29	8	61	78	8	65	16
Conflicting Peds, #/hr	14	0	7	7	0	14	2	0	3	3	0	2
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	63	90	69	70	81	60	67	66	65	67	63	57
Heavy Vehicles, %	0	2	5	2	3	0	0	2	3	25	2	13
Mvmt Flow	40	352	32	129	254	48	12	92	120	12	103	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	316	0	0	391	0	0	1059	1029	378	1107	1021	294
Stage 1	-	-	-	-	-	-	455	455	-	550	550	-
Stage 2	-	-	-	-	-	-	604	574	-	557	471	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.52	6.23	7.35	6.52	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.35	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.35	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4.018	3.327	3.725	4.018	3.417
Pot Cap-1 Maneuver	1256	-	-	1168	-	-	204	234	667	169	236	720
Stage 1	-	-	-	-	-	-	589	569	-	480	516	-
Stage 2	-	-	-	-	-	-	489	503	-	476	560	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1238	-	-	1160	-	-	99	190	660	74	192	709
Mov Cap-2 Maneuver	-	-	-	-	-	-	99	190	-	74	192	-
Stage 1	-	-	-	-	-	-	561	542	-	454	440	-
Stage 2	-	-	-	-	-	-	311	429	-	309	533	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	2.5	52.5	62.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	284	1238	-	-	1160	-	-	194
HCM Lane V/C Ratio	0.79	0.032	-	-	0.111	-	-	0.738
HCM Control Delay (s)	52.5	8	0	-	8.5	0	-	62.8
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	6.2	0.1	-	-	0.4	-	-	4.8



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	121	25	21	169	29	35	81	19	23	46	9
Future Volume (vph)	16	121	25	21	169	29	35	81	19	23	46	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	15	12	12	13	12
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
Ped Bike Factor												
Frt		0.975			0.978			0.982			0.981	
Flt Protected		0.994			0.994			0.987			0.983	
Satd. Flow (prot)	0	1645	0	0	1514	0	0	1775	0	0	1640	0
Flt Permitted		0.994			0.994			0.987			0.983	
Satd. Flow (perm)	0	1645	0	0	1514	0	0	1775	0	0	1640	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			695			637			578	
Travel Time (s)		9.3			15.8			14.5			13.1	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.67	0.82	0.63	0.66	0.88	0.66	0.67	0.65	0.68	0.58	0.77	0.56
Heavy Vehicles (%)	0%	0%	4%	5%	1%	7%	0%	2%	11%	4%	2%	11%
Adj. Flow (vph)	24	148	40	32	192	44	52	125	28	40	60	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	212	0	0	268	0	0	205	0	0	116	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	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.01	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	121	25	21	169	29	35	81	19	23	46	9
Future Vol, veh/h	16	121	25	21	169	29	35	81	19	23	46	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	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	67	82	63	66	88	66	67	65	68	58	77	56
Heavy Vehicles, %	0	0	4	5	1	7	0	2	11	4	2	11
Mvmt Flow	24	148	40	32	192	44	52	125	28	40	60	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	236	0	0	188	0	0	532	516	170	573	514	214
Stage 1	-	-	-	-	-	-	216	216	-	278	278	-
Stage 2	-	-	-	-	-	-	316	300	-	295	236	-
Critical Hdwy	4.1	-	-	4.15	-	-	7.1	6.52	6.31	7.14	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.14	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.14	5.52	-
Follow-up Hdwy	2.2	-	-	2.245	-	-	3.5	4.018	3.399	3.536	4.018	3.399
Pot Cap-1 Maneuver	1343	-	-	1368	-	-	461	463	851	427	464	804
Stage 1	-	-	-	-	-	-	791	724	-	724	680	-
Stage 2	-	-	-	-	-	-	699	666	-	709	710	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1343	-	-	1368	-	-	391	442	850	312	443	804
Mov Cap-2 Maneuver	-	-	-	-	-	-	391	442	-	312	443	-
Stage 1	-	-	-	-	-	-	775	710	-	710	662	-
Stage 2	-	-	-	-	-	-	606	648	-	553	696	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.9	19.1	17.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	457	1343	-	-	1368	-	-	410
HCM Lane V/C Ratio	0.448	0.018	-	-	0.023	-	-	0.282
HCM Control Delay (s)	19.1	7.7	0	-	7.7	0	-	17.2
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	2.3	0.1	-	-	0.1	-	-	1.1

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	58	53	63	456	299	120
Future Volume (vph)	58	53	63	456	299	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.931				0.960	
Flt Protected	0.976			0.992		
Satd. Flow (prot)	1538	0	0	1642	1609	0
Flt Permitted	0.976			0.992		
Satd. Flow (perm)	1538	0	0	1642	1609	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	756			591	599	
Travel Time (s)	17.2			13.4	13.6	
Confl. Peds. (#/hr)	3		2			2
Confl. Bikes (#/hr)						1
Peak Hour Factor	0.85	0.74	0.63	0.83	0.63	0.60
Heavy Vehicles (%)	0%	2%	5%	3%	2%	2%
Adj. Flow (vph)	68	72	100	549	475	200
Shared Lane Traffic (%)						
Lane Group Flow (vph)	140	0	0	649	675	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 73.4%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	58	53	63	456	299	120
Future Vol, veh/h	58	53	63	456	299	120
Conflicting Peds, #/hr	3	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	74	63	83	63	60
Heavy Vehicles, %	0	2	5	3	2	2
Mvmt Flow	68	72	100	549	475	200

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1329	577	677	0	-	0
Stage 1	577	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.245	-	-	-
Pot Cap-1 Maneuver	173	516	901	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	469	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	145	515	899	-	-	-
Mov Cap-2 Maneuver	145	-	-	-	-	-
Stage 1	474	-	-	-	-	-
Stage 2	468	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	42.6	1.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	899	-	229	-	-
HCM Lane V/C Ratio	0.111	-	0.611	-	-
HCM Control Delay (s)	9.5	0	42.6	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0.4	-	3.6	-	-

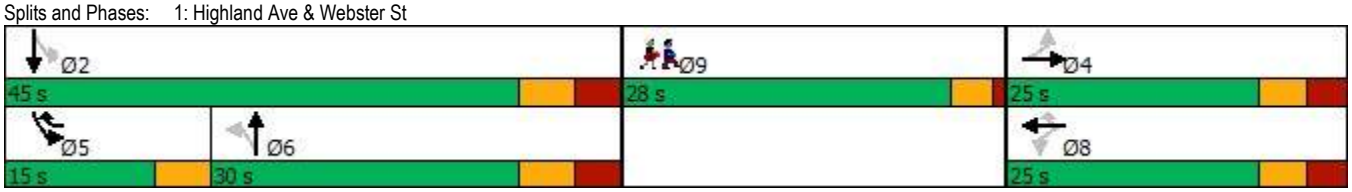
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	236	36	23	157	215	29	387	38	255	563	63
Future Volume (vph)	65	236	36	23	157	215	29	387	38	255	564	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	10	10	12	10	10	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Frt		0.983				0.850		0.987			0.984	
Flt Protected		0.990			0.994		0.950			0.950		
Satd. Flow (prot)	0	3244	0	0	1739	1507	1636	1748	0	1685	1720	0
Flt Permitted		0.763			0.901		0.274			0.144		
Satd. Flow (perm)	0	2495	0	0	1575	1462	470	1748	0	255	1720	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								5				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			193			991			1083	
Travel Time (s)		8.6			4.4			22.5			24.6	
Confl. Peds. (#/hr)	6		3	3		6	8		2	2		8
Confl. Bikes (#/hr)			3						2			1
Peak Hour Factor	0.93	0.95	0.91	0.88	0.84	0.66	0.80	0.78	0.80	0.52	0.88	0.85
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	3%	0%	0%	0%	1%	2%
Adj. Flow (vph)	70	248	40	26	187	326	36	496	48	490	641	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	358	0	0	213	326	36	544	0	490	715	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.09	1.09	1.09	1.09	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phase	4	4		8	8	5	6	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	10.0	10.0		6.0	10.0	
Minimum Split (s)	12.5	12.5		12.5	12.5	10.0	17.5	17.5		10.0	17.5	
Total Split (s)	25.0	25.0		25.0	25.0	15.0	30.0	30.0		15.0	45.0	
Total Split (%)	25.5%	25.5%		25.5%	25.5%	15.3%	30.6%	30.6%		15.3%	45.9%	
Maximum Green (s)	18.5	18.5		18.5	18.5	11.0	22.5	22.5		11.0	37.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	29%
Maximum Green (s)	24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	0.0	3.5	3.5		0.0	3.5	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		-2.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0	7.5	7.5		2.0	7.5	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.6			15.6	29.7	23.6	23.6		45.1	39.3	
Actuated g/C Ratio		0.19			0.19	0.35	0.28	0.28		0.54	0.47	
v/c Ratio		0.77			0.73	0.62	0.27	1.10		1.33	0.89	
Control Delay		47.1			50.7	28.8	37.6	104.3		189.5	41.2	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		47.1			50.7	28.8	37.6	104.3		189.5	41.2	
LOS		D			D	C	D	F		F	D	
Approach Delay		47.1			37.5			100.2			101.5	
Approach LOS		D			D			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 98			
Actuated Cycle Length: 83.9			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.33			
Intersection Signal Delay: 81.1		Intersection LOS: F	
Intersection Capacity Utilization 84.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Highland Ave & Webster St



Lane Group	Ø9
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	44
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

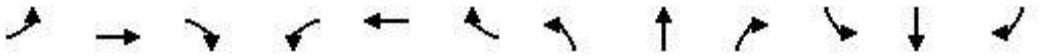
Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	358	213	326	36	544	490	715
v/c Ratio	0.77	0.73	0.62	0.27	1.10	1.33	0.89
Control Delay	47.1	50.7	28.8	37.6	104.3	189.5	41.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.1	50.7	28.8	37.6	104.3	189.5	41.2
Queue Length 50th (ft)	112	126	162	19	~447	~395	~504
Queue Length 95th (ft)	#176	#195	167	44	#530	#235	#699
Internal Link Dist (ft)	299	113			911		1003
Turn Bay Length (ft)				60			
Base Capacity (vph)	576	364	523	131	494	369	805
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.59	0.62	0.27	1.10	1.33	0.89

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

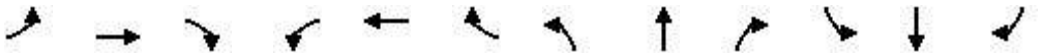
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	236	36	23	157	215	29	387	38	255	563	63
Future Volume (vph)	65	236	36	23	157	215	29	387	38	255	564	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	12	10	10	10	10	12	10	10	12
Total Lost time (s)		6.5			6.5	4.0	7.5	7.5		2.0	7.5	
Lane Util. Factor		0.95			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.99			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3239			1738	1482	1628	1747		1685	1722	
Flt Permitted		0.76			0.90	1.00	0.27	1.00		0.14	1.00	
Satd. Flow (perm)		2494			1575	1482	469	1747		255	1722	
Peak-hour factor, PHF	0.93	0.95	0.91	0.88	0.84	0.66	0.80	0.78	0.80	0.52	0.88	0.85
Adj. Flow (vph)	70	248	40	26	187	326	36	496	48	490	641	74
RTOR Reduction (vph)	0	0	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	358	0	0	213	326	36	540	0	490	715	0
Confl. Peds. (#/hr)	6		3	3		6	8		2	2		8
Confl. Bikes (#/hr)			3						2			1
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	3%	0%	0%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		15.6			15.6	27.1	23.8	23.8		39.3	39.3	
Effective Green, g (s)		15.6			15.6	27.1	23.8	23.8		41.3	39.3	
Actuated g/C Ratio		0.18			0.18	0.32	0.28	0.28		0.48	0.46	
Clearance Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		456			288	471	131	488		350	794	
v/s Ratio Prot						0.09		c0.31		c0.22	0.42	
v/s Ratio Perm		c0.14			0.14	0.13	0.08			0.46		
v/c Ratio		0.79			0.74	0.69	0.27	1.11		1.40	0.90	
Uniform Delay, d1		33.2			32.9	25.4	24.0	30.7		23.0	21.1	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		8.0			8.3	3.5	0.4	73.4		196.5	13.0	
Delay (s)		41.2			41.2	28.9	24.4	104.1		219.5	34.2	
Level of Service		D			D	C	C	F		F	C	
Approach Delay (s)		41.2			33.8			99.1			109.5	
Approach LOS		D			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	82.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	85.2	Sum of lost time (s)	22.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	81	75	2	22	1	116	382	11	12	553	60
Future Volume (vph)	35	81	75	2	22	1	116	382	11	12	554	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	11	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.952			0.988			0.997			0.984	
Flt Protected		0.991			0.995			0.986			0.998	
Satd. Flow (prot)	0	1635	0	0	1625	0	0	1708	0	0	1710	0
Flt Permitted		0.991			0.995			0.986			0.998	
Satd. Flow (perm)	0	1635	0	0	1625	0	0	1708	0	0	1710	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		695			444			621			443	
Travel Time (s)		15.8			10.1			14.1			10.1	
Confl. Peds. (#/hr)	8					8	11		9	9		11
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.71	0.66	0.80	0.50	0.61	0.25	0.62	0.81	0.69	0.50	0.98	0.74
Heavy Vehicles (%)	3%	0%	4%	0%	0%	0%	1%	2%	0%	0%	1%	5%
Adj. Flow (vph)	49	123	94	4	36	4	187	472	16	24	565	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	266	0	0	44	0	0	675	0	0	670	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	1.14	1.10	1.14	1.14	1.19	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 96.1%		ICU Level of Service F	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	149.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	81	75	2	22	1	116	382	11	12	553	60
Future Vol, veh/h	35	81	75	2	22	1	116	382	11	12	554	60
Conflicting Peds, #/hr	8	0	0	0	0	8	11	0	9	9	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	66	80	50	61	25	62	81	69	50	98	74
Heavy Vehicles, %	3	0	4	0	0	0	1	2	0	0	1	5
Mvmt Flow	49	123	94	4	36	4	187	472	16	24	565	81

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1547	1536	617	1625	1568	497	657	0	0	497	0	0
Stage 1	665	665	-	863	863	-	-	-	-	-	-	-
Stage 2	882	871	-	762	705	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.5	6.24	7.1	6.5	6.2	4.11	-	-	4.1	-	-
Critical Hdwy Stg 1	6.13	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4	3.336	3.5	4	3.3	2.209	-	-	2.2	-	-
Pot Cap-1 Maneuver	93	~ 117	486	83	112	577	935	-	-	1077	-	-
Stage 1	448	461	-	352	374	-	-	-	-	-	-	-
Stage 2	340	371	-	400	442	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 45	~ 80	480	-	76	568	924	-	-	1069	-	-
Mov Cap-2 Maneuver	~ 45	~ 80	-	-	76	-	-	-	-	-	-	-
Stage 1	320	439	-	252	268	-	-	-	-	-	-	-
Stage 2	209	266	-	224	421	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 921.1		2.7	0.3
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	924	-	-	94	-	1069	-	-
HCM Lane V/C Ratio	0.202	-	-	2.827	-	0.022	-	-
HCM Control Delay (s)	9.9	0	-	$ 921.1	-	8.4	0	-
HCM Lane LOS	A	A	-	F	-	A	A	-
HCM 95th %tile Q(veh)	0.8	-	-	25.4	-	0.1	-	-

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

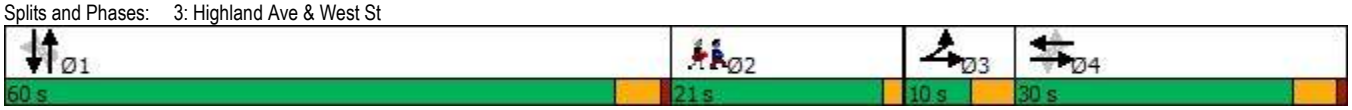
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	191	41	43	154	33	23	378	34	43	374	213
Future Volume (vph)	115	191	41	43	154	33	23	378	34	43	374	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	9	10	12	12	13	12	12	13	12
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.98	0.99			0.99			0.99	
Frt		0.971			0.970			0.985			0.955	
Flt Protected	0.950			0.950				0.997			0.996	
Satd. Flow (prot)	1433	1471	0	1462	1536	0	0	1713	0	0	1633	0
Flt Permitted	0.387			0.600				0.938			0.935	
Satd. Flow (perm)	579	1471	0	906	1536	0	0	1611	0	0	1532	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		455			303			836			621	
Travel Time (s)		10.3			6.9			19.0			14.1	
Confl. Peds. (#/hr)	7		11	11		7	14		21	21		14
Confl. Bikes (#/hr)						1			1			1
Peak Hour Factor	0.69	0.92	0.83	0.66	0.84	0.73	0.82	0.96	0.64	0.81	0.88	0.89
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	0%	1%	0%	2%	2%	1%
Adj. Flow (vph)	167	208	49	65	183	45	28	394	53	53	425	239
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	257	0	65	228	0	0	475	0	0	717	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)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.14	1.30	1.25	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Detector Phase	3	3 4		4	4		1	1		1	1	
Switch Phase												
Minimum Initial (s)	6.0			6.0	6.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.0			11.0	11.0		15.0	15.0		15.0	15.0	
Total Split (s)	10.0			30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	8.3%			24.8%	24.8%		49.6%	49.6%		49.6%	49.6%	
Maximum Green (s)	6.0			25.0	25.0		55.0	55.0		55.0	55.0	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	17%
Maximum Green (s)	19.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0			4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0			1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.0			5.0	5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			4.0	4.0		2.0	2.0		2.0	2.0	
Recall Mode	None			None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	28.3	32.4		21.1	21.1			56.1			56.1	
Actuated g/C Ratio	0.26	0.30		0.19	0.19			0.51			0.51	
v/c Ratio	0.84	0.59		0.37	0.77			0.57			0.91	
Control Delay	71.1	40.5		47.2	60.6			24.9			45.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	71.1	40.5		47.2	60.6			24.9			45.0	
LOS	E	D		D	E			C			D	
Approach Delay		52.5			57.6			24.9			45.0	
Approach LOS		D			E			C			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 121			
Actuated Cycle Length: 109			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 43.6		Intersection LOS: D	
Intersection Capacity Utilization 84.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Highland Ave & West St



Lane Group	Ø2
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	24
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

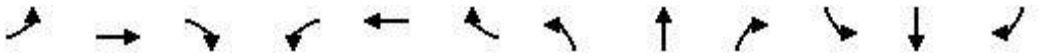
Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	167	257	65	228	475	717
v/c Ratio	0.84	0.59	0.37	0.77	0.57	0.91
Control Delay	71.1	40.5	47.2	60.6	24.9	45.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.1	40.5	47.2	60.6	24.9	45.0
Queue Length 50th (ft)	104	171	44	167	281	~600
Queue Length 95th (ft)	124	263	63	238	403	#803
Internal Link Dist (ft)		375		223	756	541
Turn Bay Length (ft)			150			
Base Capacity (vph)	198	495	212	359	829	788
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.52	0.31	0.64	0.57	0.91

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

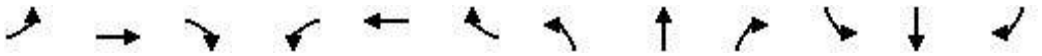
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	191	41	43	154	33	23	378	34	43	374	213
Future Volume (vph)	115	191	41	43	154	33	23	378	34	43	374	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	12	9	10	12	12	13	12	12	13	12
Total Lost time (s)	4.0	4.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		0.98	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.97			0.98			0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1429	1472		1433	1537			1713			1634	
Flt Permitted	0.39	1.00		0.60	1.00			0.94			0.94	
Satd. Flow (perm)	583	1472		905	1537			1612			1533	
Peak-hour factor, PHF	0.69	0.92	0.83	0.66	0.84	0.73	0.82	0.96	0.64	0.81	0.88	0.89
Adj. Flow (vph)	167	208	49	65	183	45	28	394	53	53	425	239
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	167	257	0	65	228	0	0	475	0	0	717	0
Confl. Peds. (#/hr)	7		11	11		7	14		21	21		14
Confl. Bikes (#/hr)						1			1			1
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	0%	1%	0%	2%	2%	1%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Actuated Green, G (s)	27.2	31.2		21.1	21.1			56.1			56.1	
Effective Green, g (s)	27.2	31.2		21.1	21.1			56.1			56.1	
Actuated g/C Ratio	0.25	0.28		0.19	0.19			0.51			0.51	
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	
Vehicle Extension (s)	2.0			4.0	4.0			2.0			2.0	
Lane Grp Cap (vph)	191	419		174	295			825			784	
v/s Ratio Prot	c0.05	0.17			0.15							
v/s Ratio Perm	c0.17			0.07				0.29			c0.47	
v/c Ratio	0.87	0.61		0.37	0.77			0.58			0.91	
Uniform Delay, d1	39.1	34.0		38.5	42.0			18.5			24.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	32.1	1.9		1.8	12.5			0.6			14.9	
Delay (s)	71.2	35.8		40.3	54.5			19.1			39.4	
Level of Service	E	D		D	D			B			D	
Approach Delay (s)		49.8			51.4			19.1			39.4	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	38.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	109.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	0	168	84	44	36	81	424	0	0	442	28
Future Volume (vph)	41	0	168	84	44	36	81	424	0	0	442	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	9	11	9	12	11	13	12	12	16	12
Storage Length (ft)	0		25	50		0	60		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97		0.99	0.98		0.99				1.00	
Frt		0.889			0.925						0.992	
Flt Protected		0.991		0.950			0.950					
Satd. Flow (prot)	0	1314	0	1570	1401	0	1570	1750	0	0	1899	0
Flt Permitted		0.915		0.461			0.356					
Satd. Flow (perm)	0	1211	0	755	1401	0	583	1750	0	0	1899	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		227			49							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1036			474			1055			1271	
Travel Time (s)		23.5			10.8			24.0			28.9	
Confl. Peds. (#/hr)	6		9	9		6	19		20	20		19
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.83	0.92	0.74	0.93	0.90	0.73	0.79	0.91	0.92	0.92	0.87	0.84
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	49	0	227	90	49	49	103	466	0	0	508	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	276	0	90	98	0	103	466	0	0	541	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)		11			11			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.30	1.19	1.30	1.14	1.19	1.10	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2			2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	20	100		20	100		20	100			100	
Trailing Detector (ft)	0	0		0	0		0	0			0	
Detector 1 Position(ft)	0	0		0	0		0	0			0	
Detector 1 Size(ft)	20	6		20	6		20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0			12.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0			40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%			44.4%	
Maximum Green (s)	23.0	23.0		23.0	23.0		33.0	33.0			33.0	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		Max	Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		13.1		13.1	13.1		34.6	34.6			34.6	
Actuated g/C Ratio		0.19		0.19	0.19		0.50	0.50			0.50	
v/c Ratio		0.67		0.63	0.32		0.35	0.53			0.57	
Control Delay		15.6		47.4	17.8		21.4	18.9			19.5	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		15.6		47.4	17.8		21.4	18.9			19.5	
LOS		B		D	B		C	B			B	
Approach Delay		15.6			32.0			19.4			19.5	
Approach LOS		B			C			B			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 68.7			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 20.2		Intersection LOS: C	
Intersection Capacity Utilization 71.8%		ICU Level of Service C	
Analysis Period (min) 15			

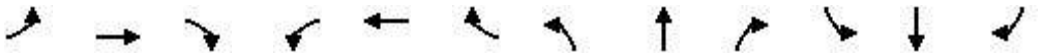
Splits and Phases: 4: Highland Ave & Rosemary St

Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	27
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	276	90	98	103	466	541
v/c Ratio	0.67	0.63	0.32	0.35	0.53	0.57
Control Delay	15.6	47.4	17.8	21.4	18.9	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	47.4	17.8	21.4	18.9	19.5
Queue Length 50th (ft)	15	29	15	17	88	104
Queue Length 95th (ft)	98	93	62	82	342	376
Internal Link Dist (ft)	956		394		975	1191
Turn Bay Length (ft)		50		60		
Base Capacity (vph)	572	265	523	293	882	957
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.34	0.19	0.35	0.53	0.57

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	0	168	84	44	36	81	424	0	0	442	28
Future Volume (vph)	41	0	168	84	44	36	81	424	0	0	442	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	9	11	9	12	11	13	12	12	16	12
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		0.96		1.00	0.98		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		0.99	1.00		0.99	1.00			1.00	
Frt		0.89		1.00	0.93		1.00	1.00			0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1304		1552	1398		1558	1750			1900	
Flt Permitted		0.91		0.46	1.00		0.36	1.00			1.00	
Satd. Flow (perm)		1204		752	1398		584	1750			1900	
Peak-hour factor, PHF	0.83	0.92	0.74	0.93	0.90	0.73	0.79	0.91	0.92	0.92	0.87	0.84
Adj. Flow (vph)	49	0	227	90	49	49	103	466	0	0	508	33
RTOR Reduction (vph)	0	184	0	0	40	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	92	0	90	58	0	103	466	0	0	541	0
Confl. Peds. (#/hr)	6		9	9		6	19		20	20		19
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		13.1		13.1	13.1		34.6	34.6			34.6	
Effective Green, g (s)		13.1		13.1	13.1		34.6	34.6			34.6	
Actuated g/C Ratio		0.19		0.19	0.19		0.50	0.50			0.50	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		227		141	263		291	872			947	
v/s Ratio Prot					0.04			0.27			c0.28	
v/s Ratio Perm		0.08		c0.12			0.18					
v/c Ratio		0.40		0.64	0.22		0.35	0.53			0.57	
Uniform Delay, d1		24.7		26.0	23.8		10.6	11.9			12.2	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.2		9.1	0.4		3.4	2.3			2.5	
Delay (s)		25.9		35.1	24.3		13.9	14.2			14.7	
Level of Service		C		D	C		B	B			B	
Approach Delay (s)		25.9			29.4			14.2			14.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

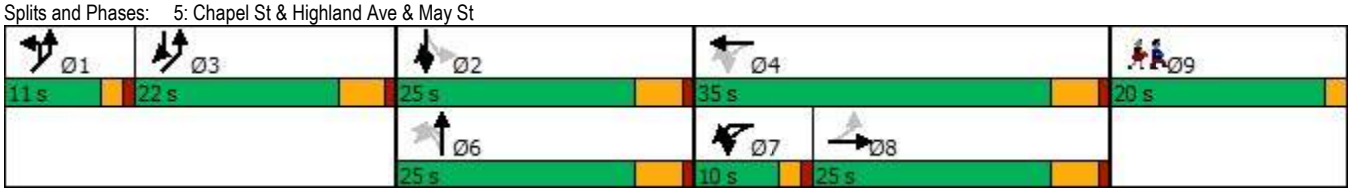
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	55	94	25	21	9	38	117	22	4	17	136	23
Future Volume (vph)	55	94	25	21	9	38	117	22	4	17	136	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12	10	12	12	12	16	12
Storage Length (ft)	0		0			0		0		0		0
Storage Lanes	0		0			0		0		0		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98					0.99				0.99	
Frt		0.962					0.984				0.980	
Flt Protected		0.987					0.985				0.995	
Satd. Flow (prot)	0	1630	0	0	0	0	1542	0	0	0	1861	0
Flt Permitted		0.814					0.759				0.718	
Satd. Flow (perm)	0	1341	0	0	0	0	1185	0	0	0	1341	0
Right Turn on Red				No				Yes				No
Satd. Flow (RTOR)							6					
Link Speed (mph)		30					30				30	
Link Distance (ft)		453					923				945	
Travel Time (s)		10.3					21.0				21.5	
Confl. Peds. (#/hr)	4		5	3	3	5		4	3	12		13
Confl. Bikes (#/hr)			1	1				1				2
Peak Hour Factor	0.81	0.81	0.63	0.66	0.56	0.63	0.84	0.79	1.00	0.85	0.76	0.64
Heavy Vehicles (%)	2%	1%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	68	116	40	32	16	60	139	28	4	20	179	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	256	0	0	0	0	243	0	0	0	239	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Left	Left	Right
Median Width(ft)		0					0				0	
Link Offset(ft)		0					0				0	
Crosswalk Width(ft)		16					16				16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2		1	1	2	
Detector Template	Left	Thru			Left	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100		20	20	100	
Trailing Detector (ft)	0	0			0	0	0		0	0	0	
Detector 1 Position(ft)	0	0			0	0	0		0	0	0	
Detector 1 Size(ft)	20	6			20	20	6		20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Detector Phase	8	8			7	7	4		6	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0			2.0	2.0	6.0		6.0	6.0	6.0	
Minimum Split (s)	11.0	11.0			6.0	6.0	11.0		11.0	11.0	11.0	
Total Split (s)	25.0	25.0			10.0	10.0	35.0		25.0	25.0	25.0	
Total Split (%)	22.1%	22.1%			8.8%	8.8%	31.0%		22.1%	22.1%	22.1%	
Maximum Green (s)	20.0	20.0			7.0	7.0	30.0		20.0	20.0	20.0	

Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Lane Configurations										
Traffic Volume (vph)	37	195	321	147	16	165	17	9		
Future Volume (vph)	37	195	321	147	16	165	17	9		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	10	11	12	10	11	11	11		
Storage Length (ft)	0		120			0	60			
Storage Lanes	0		1			2	1			
Taper Length (ft)	25					25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00			0.96	0.99				
Frt			0.850			0.975				
Flt Protected		0.990			0.950	0.960				
Satd. Flow (prot)	0	1571	1391	0	1516	1506	0	0		
Flt Permitted		0.762			0.950	0.960				
Satd. Flow (perm)	0	1205	1391	0	1452	1501	0	0		
Right Turn on Red				No				Yes		
Satd. Flow (RTOR)						116				
Link Speed (mph)		30				30				
Link Distance (ft)		644				580				
Travel Time (s)		14.6				13.2				
Confl. Peds. (#/hr)	13		3	12	12	4	13	5		
Confl. Bikes (#/hr)			1	1						
Peak Hour Factor	0.62	0.81	0.96	0.86	0.50	0.83	0.85	0.45		
Heavy Vehicles (%)	3%	0%	1%	1%	0%	1%	0%	11%		
Adj. Flow (vph)	60	241	334	171	32	199	20	20		
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	301	505	0	32	239	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Right	Left	Left	Right	Right		
Median Width(ft)		0				21				
Link Offset(ft)		0				0				
Crosswalk Width(ft)		16				16				
Two way Left Turn Lane										
Headway Factor	1.14	1.25	1.19	1.14	1.25	1.19	1.19	1.19		
Turning Speed (mph)	15		9	9	15	15	9	9		
Number of Detectors	1	2	1		1	1				
Detector Template	Left	Thru	Right		Left	Left				
Leading Detector (ft)	20	100	20		20	20				
Trailing Detector (ft)	0	0	0		0	0				
Detector 1 Position(ft)	0	0	0		0	0				
Detector 1 Size(ft)	20	6	20		20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)		94								
Detector 2 Size(ft)		6								
Detector 2 Type		Cl+Ex								
Detector 2 Channel										
Detector 2 Extend (s)		0.0								
Turn Type	Perm	NA	custom		Prot	Prot				
Protected Phases		2	2 3		1	1 3			3	9
Permitted Phases	2									
Detector Phase	2	2	2 3		1	1 3				
Switch Phase										
Minimum Initial (s)	6.0	6.0			1.0				4.0	5.0
Minimum Split (s)	11.0	11.0			6.0				9.0	20.0
Total Split (s)	25.0	25.0			11.0				22.0	20.0
Total Split (%)	22.1%	22.1%			9.7%				19%	18%
Maximum Green (s)	20.0	20.0			8.0				17.0	18.0

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Yellow Time (s)	4.0	4.0			2.0	2.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0				0.0	
Total Lost Time (s)		5.0					5.0				5.0	
Lead/Lag	Lag	Lag			Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None			None	None	None		Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		26.1					26.1				20.4	
Actuated g/C Ratio		0.27					0.27				0.21	
v/c Ratio		0.71					0.75				0.85	
Control Delay		45.5					49.0				66.6	
Queue Delay		0.0					0.0				0.0	
Total Delay		45.5					49.0				66.6	
LOS		D					D				E	
Approach Delay		45.5					49.0				66.6	
Approach LOS		D					D				E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 113			
Actuated Cycle Length: 96.7			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.19			
Intersection Signal Delay: 61.6		Intersection LOS: E	
Intersection Capacity Utilization 72.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: Chapel St & Highland Ave & May St



Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Yellow Time (s)	4.0	4.0			2.0				4.0	2.0
All-Red Time (s)	1.0	1.0			1.0				1.0	0.0
Lost Time Adjust (s)		0.0			0.0					
Total Lost Time (s)		5.0			3.0					
Lead/Lag					Lead				Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0
Recall Mode	Min	Min			None				None	None
Walk Time (s)										7.0
Flash Dont Walk (s)										11.0
Pedestrian Calls (#/hr)										18
Act Effct Green (s)		20.4	42.8		7.7	30.1				
Actuated g/C Ratio		0.21	0.44		0.08	0.31				
v/c Ratio		1.19	0.82		0.27	0.44				
Control Delay		153.3	39.8		52.8	18.4				
Queue Delay		0.0	0.0		0.0	0.0				
Total Delay		153.3	39.8		52.8	18.4				
LOS		F	D		D	B				
Approach Delay		82.2				22.4				
Approach LOS		F				C				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR	NEL2	NEL
Lane Group Flow (vph)	256	243	239	301	505	32	239
v/c Ratio	0.71	0.75	0.85	1.19	0.82	0.27	0.44
Control Delay	45.5	49.0	66.6	153.3	39.8	52.8	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	49.0	66.6	153.3	39.8	52.8	18.4
Queue Length 50th (ft)	125	118	131	~203	235	17	51
Queue Length 95th (ft)	232	#249	#261	#405	#582	30	131
Internal Link Dist (ft)	373	843	865	564			500
Turn Bay Length (ft)					120		
Base Capacity (vph)	362	379	282	254	616	127	545
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.64	0.85	1.19	0.82	0.25	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

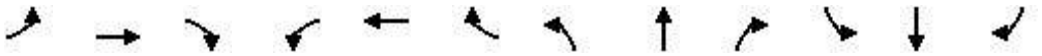
Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	55	94	25	21	9	38	117	22	4	17	136	23
Future Volume (vph)	55	94	25	21	9	38	117	22	4	17	136	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12	10	12	12	12	16	12
Total Lost time (s)		5.0					5.0				5.0	
Lane Util. Factor		1.00					1.00				1.00	
Frpb, ped/bikes		0.99					1.00				0.99	
Flpb, ped/bikes		1.00					1.00				1.00	
Frt		0.96					0.98				0.98	
Flt Protected		0.99					0.98				1.00	
Satd. Flow (prot)		1632					1538				1859	
Flt Permitted		0.81					0.76				0.72	
Satd. Flow (perm)		1347					1185				1342	
Peak-hour factor, PHF	0.81	0.81	0.63	0.66	0.56	0.63	0.84	0.79	1.00	0.85	0.76	0.64
Adj. Flow (vph)	68	116	40	32	16	60	139	28	4	20	179	36
RTOR Reduction (vph)	0	0	0	0	0	0	4	0	0	0	0	0
Lane Group Flow (vph)	0	256	0	0	0	0	239	0	0	0	239	0
Confl. Peds. (#/hr)	4		5	3	3	5		4	3	12		13
Confl. Bikes (#/hr)			1	1				1				2
Heavy Vehicles (%)	2%	1%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Actuated Green, G (s)		26.1					26.1				20.4	
Effective Green, g (s)		26.1					26.1				20.4	
Actuated g/C Ratio		0.27					0.27				0.21	
Clearance Time (s)		5.0					5.0				5.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		359					316				280	
v/s Ratio Prot												
v/s Ratio Perm		0.19					c0.20				0.18	
v/c Ratio		0.71					0.76				0.85	
Uniform Delay, d1		32.4					32.9				37.2	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		6.6					9.8				21.5	
Delay (s)		39.0					42.7				58.7	
Level of Service		D					D				E	
Approach Delay (s)		39.0					42.7				58.7	
Approach LOS		D					D				E	

Intersection Summary			
HCM 2000 Control Delay	59.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	97.7	Sum of lost time (s)	23.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	37	195	321	147	16	165	17	9
Future Volume (vph)	37	195	321	147	16	165	17	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	10	11	11	11
Total Lost time (s)		5.0	5.0		3.0	3.0		
Lane Util. Factor		1.00	1.00		1.00	1.00		
Frpb, ped/bikes		1.00	1.00		1.00	0.99		
Flpb, ped/bikes		1.00	1.00		1.00	1.00		
Frt		1.00	0.85		1.00	0.97		
Flt Protected		0.99	1.00		0.95	0.96		
Satd. Flow (prot)		1566	1391		1516	1508		
Flt Permitted		0.76	1.00		0.95	0.96		
Satd. Flow (perm)		1204	1391		1516	1508		
Peak-hour factor, PHF	0.62	0.81	0.96	0.86	0.50	0.83	0.85	0.45
Adj. Flow (vph)	60	241	334	171	32	199	20	20
RTOR Reduction (vph)	0	0	0	0	0	83	0	0
Lane Group Flow (vph)	0	301	505	0	32	156	0	0
Confl. Peds. (#/hr)	13		3	12	12	4	13	5
Confl. Bikes (#/hr)			1	1				
Heavy Vehicles (%)	3%	0%	1%	1%	0%	1%	0%	11%
Turn Type	Perm	NA	custom		Prot	Prot		
Protected Phases		2	2 3		1	1 3		
Permitted Phases	2							
Actuated Green, G (s)		20.4	42.7		7.7	28.0		
Effective Green, g (s)		20.4	42.7		7.7	28.0		
Actuated g/C Ratio		0.21	0.44		0.08	0.29		
Clearance Time (s)		5.0			3.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		251	607		119	432		
v/s Ratio Prot			c0.36		0.02	c0.10		
v/s Ratio Perm		c0.25						
v/c Ratio		1.20	0.83		0.27	0.36		
Uniform Delay, d1		38.7	24.3		42.4	27.7		
Progression Factor		1.00	1.00		1.00	1.00		
Incremental Delay, d2		121.5	9.5		1.2	0.5		
Delay (s)		160.1	33.8		43.6	28.3		
Level of Service		F	C		D	C		
Approach Delay (s)		81.0				30.1		
Approach LOS		F				C		

Intersection Summary



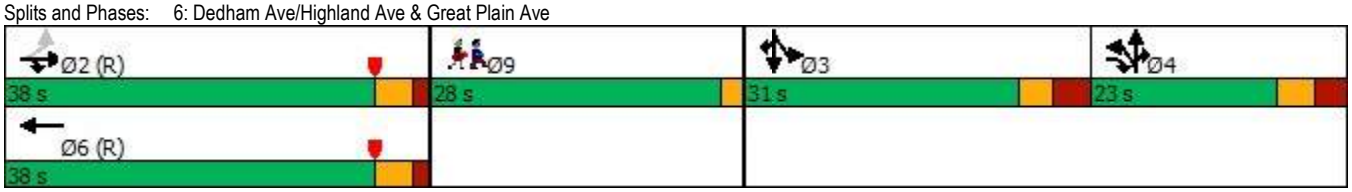
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	239	262	0	290	67	172	91	65	72	168	58
Future Volume (vph)	31	239	262	0	290	67	172	91	65	72	168	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	10	10	10	10	10	10	10	10	12
Storage Length (ft)	0		0	0		0	0		35	0		90
Storage Lanes	0		1	0		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		0.99				0.99	
Frt			0.850		0.972				0.850			0.850
Flt Protected		0.993					0.950				0.984	
Satd. Flow (prot)	0	1569	1391	0	2886	0	1486	1596	1357	0	1560	1454
Flt Permitted		0.882					0.950				0.984	
Satd. Flow (perm)	0	1389	1391	0	2886	0	1467	1596	1357	0	1545	1454
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									95			95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		238			434			312			945	
Travel Time (s)		5.4			9.9			7.1			21.5	
Confl. Peds. (#/hr)	27		39	39		27	9		14	14		9
Confl. Bikes (#/hr)			3			2			1			
Peak Hour Factor	0.63	0.82	0.93	0.25	0.85	0.87	0.86	0.77	0.80	0.74	0.84	0.84
Heavy Vehicles (%)	7%	0%	1%	0%	1%	0%	2%	0%	0%	0%	1%	0%
Adj. Flow (vph)	49	291	282	0	341	77	200	118	81	97	200	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	340	282	0	418	0	200	118	81	0	297	69
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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1		2		1	2	1	1	2	1
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20		100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20		6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Detector Phase	2	2	2 4		6		4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0			10.0		11.5	11.5	11.5	11.5	11.5	11.5
Total Split (s)	38.0	38.0			38.0		23.0	23.0	23.0	31.0	31.0	31.0
Total Split (%)	31.7%	31.7%			31.7%		19.2%	19.2%	19.2%	25.8%	25.8%	25.8%
Maximum Green (s)	33.0	33.0			33.0		16.5	16.5	16.5	24.5	24.5	24.5

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	26.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5			1.5		3.0	3.0	3.0	3.5	3.5	3.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Lead/Lag							Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Min	C-Min			C-Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		38.6	62.1		38.6		17.0	17.0	17.0		24.8	24.8
Actuated g/C Ratio		0.32	0.52		0.32		0.14	0.14	0.14		0.21	0.21
v/c Ratio		0.76	0.39		0.45		0.95	0.52	0.30		0.92	0.18
Control Delay		30.9	11.0		36.4		102.0	57.2	9.7		80.9	4.6
Queue Delay		2.7	1.0		1.1		0.0	0.0	0.0		0.0	0.0
Total Delay		33.6	12.0		37.5		102.0	57.2	9.7		80.9	4.6
LOS		C	B		D		F	E	A		F	A
Approach Delay		23.8			37.5			70.0			66.5	
Approach LOS		C			D			E			E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 45.8		Intersection LOS: D	
Intersection Capacity Utilization 71.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Dedham Ave/Highland Ave & Great Plain Ave



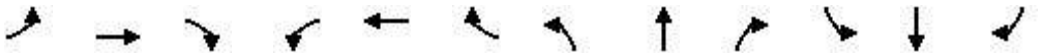
Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	44
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	340	282	418	200	118	81	297	69
v/c Ratio	0.76	0.39	0.45	0.95	0.52	0.30	0.92	0.18
Control Delay	30.9	11.0	36.4	102.0	57.2	9.7	80.9	4.6
Queue Delay	2.7	1.0	1.1	0.0	0.0	0.0	0.0	0.0
Total Delay	33.6	12.0	37.5	102.0	57.2	9.7	80.9	4.6
Queue Length 50th (ft)	92	49	144	156	86	0	226	0
Queue Length 95th (ft)	#345	97	184	#288	126	24	#345	16
Internal Link Dist (ft)	158		354		232		865	
Turn Bay Length (ft)						35		90
Base Capacity (vph)	445	720	927	211	226	274	328	381
Starvation Cap Reductn	41	228	0	0	0	0	0	0
Spillback Cap Reductn	0	0	284	0	0	0	0	9
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.57	0.65	0.95	0.52	0.30	0.91	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	239	262	0	290	67	172	91	65	72	168	58
Future Volume (vph)	31	239	262	0	290	67	172	91	65	72	168	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	11	10	10	10	10	10	10	10	10	12
Total Lost time (s)		5.0	5.0		5.0		6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00		1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)		1564	1391		2890		1486	1596	1357		1560	1454
Flt Permitted		0.88	1.00		1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (perm)		1389	1391		2890		1486	1596	1357		1560	1454
Peak-hour factor, PHF	0.63	0.82	0.93	0.25	0.85	0.87	0.86	0.77	0.80	0.74	0.84	0.84
Adj. Flow (vph)	49	291	282	0	341	77	200	118	81	97	200	69
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	70	0	0	55
Lane Group Flow (vph)	0	340	282	0	418	0	200	118	11	0	297	14
Confl. Peds. (#/hr)	27		39	39		27	9		14	14		9
Confl. Bikes (#/hr)			3			2			1			
Heavy Vehicles (%)	7%	0%	1%	0%	1%	0%	2%	0%	0%	0%	1%	0%
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Actuated Green, G (s)		38.2	61.7		38.2		17.0	17.0	17.0		24.8	24.8
Effective Green, g (s)		38.2	55.2		38.2		17.0	17.0	17.0		24.8	24.8
Actuated g/C Ratio		0.32	0.46		0.32		0.14	0.14	0.14		0.21	0.21
Clearance Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		2.0			2.0		2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		442	639		919		210	226	192		322	300
v/s Ratio Prot			0.20		0.14		c0.13	0.07	0.01		c0.19	0.01
v/s Ratio Perm		c0.24										
v/c Ratio		0.77	0.44		0.45		0.95	0.52	0.06		0.92	0.05
Uniform Delay, d1		36.9	22.0		32.6		51.1	47.7	44.6		46.7	38.1
Progression Factor		0.48	0.48		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		10.1	0.1		1.6		48.1	1.0	0.0		30.4	0.0
Delay (s)		27.8	10.7		34.2		99.2	48.7	44.6		77.1	38.2
Level of Service		C	B		C		F	D	D		E	D
Approach Delay (s)		20.0			34.2			73.2			69.7	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	45.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

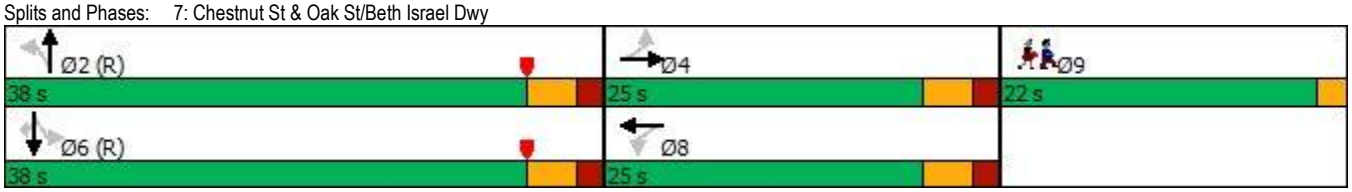
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	1	116	5	2	8	92	331	11	4	447	71
Future Volume (vph)	52	1	116	5	2	8	92	331	11	4	447	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	8	8	11	11	11	9	9	12	12	9	9
Storage Length (ft)	0		0	0		0	80		0	0		150
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.908			0.924			0.995				0.850
Flt Protected		0.985			0.985		0.950					
Satd. Flow (prot)	0	1299	0	0	1475	0	1433	1501	0	0	1509	1283
Flt Permitted		0.902			0.922		0.377				0.998	
Satd. Flow (perm)	0	1190	0	0	1381	0	569	1501	0	0	1506	1283
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								2				76
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			314			227			439	
Travel Time (s)		13.8			7.1			5.2			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	57	1	126	5	2	9	100	360	12	4	486	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	184	0	0	16	0	100	372	0	0	490	77
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			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.19	1.19	1.19	1.30	1.30	1.14	1.14	1.30	1.30
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	25.0	25.0		25.0	25.0		38.0	38.0		38.0	38.0	38.0
Total Split (%)	29.4%	29.4%		29.4%	29.4%		44.7%	44.7%		44.7%	44.7%	44.7%
Maximum Green (s)	20.0	20.0		20.0	20.0		33.0	33.0		33.0	33.0	33.0
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0			5.0	5.0

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	22.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		20.0			20.0		46.2	46.2			46.2	46.2
Actuated g/C Ratio		0.24			0.24		0.54	0.54			0.54	0.54
v/c Ratio		0.66			0.05		0.32	0.46			0.60	0.11
Control Delay		42.3			25.8		19.2	17.3			26.9	13.4
Queue Delay		0.0			0.0		0.0	0.0			0.5	0.0
Total Delay		42.3			25.8		19.2	17.3			27.4	13.4
LOS		D			C		B	B			C	B
Approach Delay		42.3			25.8			17.7			25.5	
Approach LOS		D			C			B			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 25.0		Intersection LOS: C	
Intersection Capacity Utilization 73.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Chestnut St & Oak St/Beth Israel Dwy



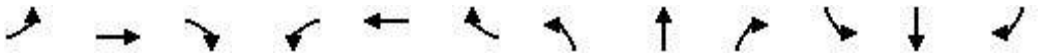
Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	184	16	100	372	490	77
v/c Ratio	0.66	0.05	0.32	0.46	0.60	0.11
Control Delay	42.3	25.8	19.2	17.3	26.9	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.0
Total Delay	42.3	25.8	19.2	17.3	27.4	13.4
Queue Length 50th (ft)	89	7	20	82	73	0
Queue Length 95th (ft)	#176	23	88	253	m#366	m44
Internal Link Dist (ft)	526	234		147	359	
Turn Bay Length (ft)			80			150
Base Capacity (vph)	280	324	309	816	818	732
Starvation Cap Reductn	0	0	0	0	91	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.05	0.32	0.46	0.67	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	1	116	5	2	8	92	331	11	4	447	71
Future Volume (vph)	52	1	116	5	2	8	92	331	11	4	447	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	11	11	11	9	9	12	12	9	9
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	1.00
Frt		0.91			0.92		1.00	1.00			1.00	0.85
Flt Protected		0.98			0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1299			1474		1433	1502			1508	1282
Flt Permitted		0.90			0.92		0.38	1.00			1.00	1.00
Satd. Flow (perm)		1189			1381		569	1502			1505	1282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	57	1	126	5	2	9	100	360	12	4	486	77
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	36
Lane Group Flow (vph)	0	184	0	0	16	0	100	371	0	0	490	41
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		20.0			20.0		45.0	45.0			45.0	45.0
Effective Green, g (s)		20.0			20.0		45.0	45.0			45.0	45.0
Actuated g/C Ratio		0.24			0.24		0.53	0.53			0.53	0.53
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		279			324		301	795			796	678
v/s Ratio Prot								0.25				
v/s Ratio Perm		c0.15			0.01		0.18				c0.33	0.03
v/c Ratio		0.66			0.05		0.33	0.47			0.62	0.06
Uniform Delay, d1		29.4			25.1		11.4	12.5			14.0	9.7
Progression Factor		1.00			1.00		1.00	1.00			1.40	2.87
Incremental Delay, d2		11.6			0.3		2.9	2.0			3.0	0.1
Delay (s)		41.0			25.4		14.4	14.5			22.5	28.0
Level of Service		D			C		B	B			C	C
Approach Delay (s)		41.0			25.4			14.4			23.2	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

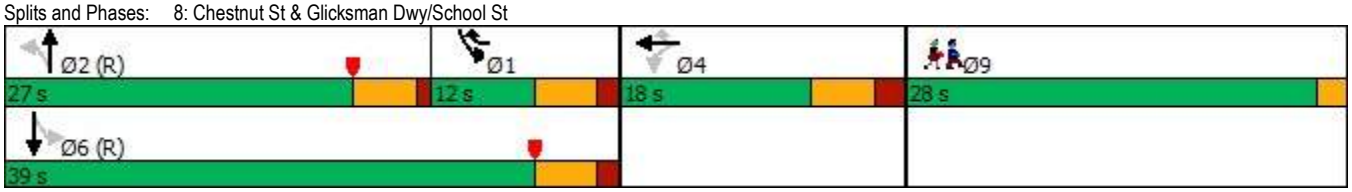
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	162	5	63	5	312	195	57	396	3
Future Volume (vph)	0	0	0	162	5	63	5	312	195	57	396	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	9	13	9	12	12	9	12	12
Storage Length (ft)	0		0	0		150	40		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			70			70			100		
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						0.850		0.942			0.999	
Flt Protected					0.954		0.950			0.950		
Satd. Flow (prot)	0	0	0	0	1439	1473	1433	1579	0	1433	1675	0
Flt Permitted					0.954		0.434			0.300		
Satd. Flow (perm)	0	0	0	0	1439	1473	655	1579	0	453	1675	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						68		36				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		162			420			439			782	
Travel Time (s)		3.7			9.5			10.0			17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	176	5	68	5	339	212	62	430	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	181	68	5	551	0	62	433	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.30	1.30	1.10	1.30	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2		1	2	
Detector Template				Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)				20	100	20	20	100		20	100	
Trailing Detector (ft)				0	0	0	0	0		0	0	
Detector 1 Position(ft)				0	0	0	0	0		0	0	
Detector 1 Size(ft)				20	6	20	20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Detector Phase				4	4	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)				6.0	6.0	6.0	2.0	2.0		6.0	10.0	
Minimum Split (s)				12.0	12.0	11.5	7.0	7.0		11.5	15.5	
Total Split (s)				18.0	18.0	12.0	27.0	27.0		12.0	39.0	
Total Split (%)				21.2%	21.2%	14.1%	31.8%	31.8%		14.1%	45.9%	
Maximum Green (s)				12.0	12.0	6.5	22.0	22.0		6.5	33.5	
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)				2.0	2.0	1.5	1.0	1.0		1.5	1.5	
Lost Time Adjust (s)					0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	33%
Maximum Green (s)	26.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag						Lag	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode				None	None	None	C-Min	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					12.0	21.9	41.4	41.4		51.5	50.3	
Actuated g/C Ratio					0.14	0.26	0.49	0.49		0.61	0.59	
v/c Ratio					0.89	0.16	0.02	0.70		0.18	0.44	
Control Delay					78.8	7.2	12.8	24.5		16.6	15.5	
Queue Delay					8.5	0.0	0.0	0.0		0.0	0.0	
Total Delay					87.3	7.2	12.8	24.5		16.6	15.5	
LOS					F	A	B	C		B	B	
Approach Delay					65.4			24.4			15.6	
Approach LOS					E			C			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 9 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 28.9		Intersection LOS: C	
Intersection Capacity Utilization 60.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 8: Chestnut St & Glicksman Dwy/School St



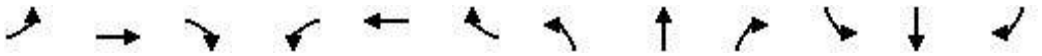
Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	181	68	5	551	62	433
v/c Ratio	0.89	0.16	0.02	0.70	0.18	0.44
Control Delay	78.8	7.2	12.8	24.5	16.6	15.5
Queue Delay	8.5	0.0	0.0	0.0	0.0	0.0
Total Delay	87.3	7.2	12.8	24.5	16.6	15.5
Queue Length 50th (ft)	96	0	1	183	8	71
Queue Length 95th (ft)	#216	29	m3	#561	46	288
Internal Link Dist (ft)	340			359		702
Turn Bay Length (ft)		150	40		115	
Base Capacity (vph)	203	396	319	787	351	991
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	12	0	0	0	0	32
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.17	0.02	0.70	0.18	0.45

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	162	5	63	5	312	195	57	396	3
Future Volume (vph)	0	0	0	162	5	63	5	312	195	57	396	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	9	9	13	9	12	12	9	12	12
Total Lost time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frt					1.00	0.85	1.00	0.94		1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1439	1472	1433	1580		1433	1675	
Flt Permitted					0.95	1.00	0.43	1.00		0.30	1.00	
Satd. Flow (perm)					1439	1472	655	1580		452	1675	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	176	5	68	5	339	212	62	430	3
RTOR Reduction (vph)	0	0	0	0	0	54	0	19	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	181	14	5	532	0	62	433	0
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Actuated Green, G (s)					12.0	17.0	39.1	39.1		49.1	49.1	
Effective Green, g (s)					12.0	17.0	39.1	39.1		49.1	49.1	
Actuated g/C Ratio					0.14	0.20	0.46	0.46		0.58	0.58	
Clearance Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Vehicle Extension (s)					3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)					203	389	301	726		318	967	
v/s Ratio Prot						0.00		c0.34		0.01	c0.26	
v/s Ratio Perm					0.13	0.01	0.01			0.10		
v/c Ratio					0.89	0.03	0.02	0.73		0.19	0.45	
Uniform Delay, d1					35.9	27.4	12.5	18.7		16.9	10.2	
Progression Factor					1.00	1.00	0.58	0.65		1.00	1.00	
Incremental Delay, d2					35.0	0.0	0.1	6.1		0.3	1.5	
Delay (s)					70.9	27.4	7.3	18.3		17.2	11.7	
Level of Service					E	C	A	B		B	B	
Approach Delay (s)		0.0			59.0			18.2			12.4	
Approach LOS		A			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	81	538	533	24	13	196
Future Volume (vph)	81	539	534	24	13	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.989		0.878	
Flt Protected		0.992			0.995	
Satd. Flow (prot)	0	2978	2972	0	1433	0
Flt Permitted		0.992			0.995	
Satd. Flow (perm)	0	2978	2972	0	1433	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		180	394		416	
Travel Time (s)		4.1	9.0		9.5	
Confl. Peds. (#/hr)	23			23	1	23
Peak Hour Factor	0.79	0.98	0.92	0.52	0.54	0.90
Heavy Vehicles (%)	1%	1%	1%	0%	8%	0%
Adj. Flow (vph)	103	550	580	46	24	218
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	653	626	0	242	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.25	1.25	1.25	1.19	1.19
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.8%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	81	538	533	24	13	196
Future Vol, veh/h	81	539	534	24	13	196
Conflicting Peds, #/hr	23	0	0	23	1	23
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	79	98	92	52	54	90
Heavy Vehicles, %	1	1	1	0	8	0
Mvmt Flow	103	550	580	46	24	218

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	649	0	-	0	1108	359
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	482	-
Critical Hdwy	4.12	-	-	-	6.96	6.9
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	2.21	-	-	-	3.58	3.3
Pot Cap-1 Maneuver	940	-	-	-	195	643
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	570	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	921	-	-	-	157	619
Mov Cap-2 Maneuver	-	-	-	-	157	-
Stage 1	-	-	-	-	394	-
Stage 2	-	-	-	-	559	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	19.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	921	-	-	-	479
HCM Lane V/C Ratio	0.111	-	-	-	0.505
HCM Control Delay (s)	9.4	0.6	-	-	19.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	2.8

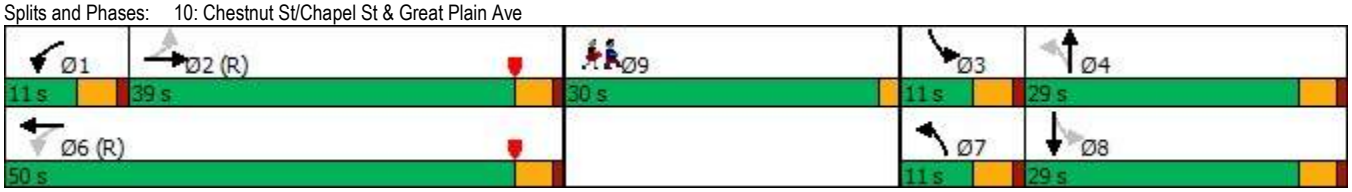
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	454	62	94	400	26	86	161	56	22	276	71
Future Volume (vph)	35	454	62	94	400	26	86	161	56	22	276	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	175		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99		0.99	0.99		0.99	0.99	
Frt		0.982			0.991			0.962			0.965	
Flt Protected		0.996			0.991		0.950			0.950		
Satd. Flow (prot)	0	2899	0	0	2936	0	1501	1566	0	1516	1562	0
Flt Permitted		0.819			0.626		0.169			0.525		
Satd. Flow (perm)	0	2381	0	0	1847	0	264	1566	0	831	1562	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			238			782			424	
Travel Time (s)		9.0			5.4			17.8			9.6	
Confl. Peds. (#/hr)	18		48	48		18	29		13	13		29
Confl. Bikes (#/hr)												4
Peak Hour Factor	0.80	0.96	0.86	0.84	0.88	0.72	0.80	0.84	0.88	0.69	0.87	0.74
Heavy Vehicles (%)	0%	1%	2%	1%	1%	4%	1%	1%	0%	0%	1%	0%
Adj. Flow (vph)	44	473	72	112	455	36	108	192	64	32	317	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	589	0	0	603	0	108	256	0	32	413	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.19	1.19	1.25	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	39.0	39.0		9.5	50.0		11.0	29.0		11.0	29.0	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	29.0		11.0	29.0	
Total Split (%)	32.5%	32.5%		9.2%	41.7%		9.2%	24.2%		9.2%	24.2%	
Maximum Green (s)	34.5	34.5		6.5	45.5		6.5	24.5		6.5	24.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	30.0
Total Split (%)	25%
Maximum Green (s)	28.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		43.3			43.3		44.1	38.4		39.1	31.7	
Actuated g/C Ratio		0.36			0.36		0.37	0.32		0.33	0.26	
v/c Ratio		0.69			0.90		0.55	0.51		0.10	1.00	
Control Delay		36.9			35.8		40.3	43.4		29.4	91.5	
Queue Delay		0.6			11.3		0.0	0.0		0.0	0.0	
Total Delay		37.5			47.1		40.3	43.5		29.4	91.5	
LOS		D			D		D	D		C	F	
Approach Delay		37.5			47.1			42.5			87.0	
Approach LOS		D			D			D			F	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 11 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 52.3		Intersection LOS: D	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 10: Chestnut St/Chapel St & Great Plain Ave



Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	54
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

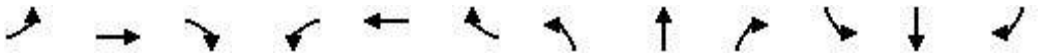
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	589	603	108	256	32	413
v/c Ratio	0.69	0.90	0.55	0.51	0.10	1.00
Control Delay	36.9	35.8	40.3	43.4	29.4	91.5
Queue Delay	0.6	11.3	0.0	0.0	0.0	0.0
Total Delay	37.5	47.1	40.3	43.5	29.4	91.5
Queue Length 50th (ft)	195	250	61	185	17	~409
Queue Length 95th (ft)	262	m302	95	#284	31	#580
Internal Link Dist (ft)	314	158		702		344
Turn Bay Length (ft)			175		100	
Base Capacity (vph)	859	700	198	500	315	412
Starvation Cap Reductn	0	85	0	0	0	0
Spillback Cap Reductn	64	0	0	5	2	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.98	0.55	0.52	0.10	1.00

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

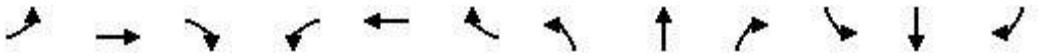
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	454	62	94	400	26	86	161	56	22	276	71
Future Volume (vph)	35	454	62	94	400	26	86	161	56	22	276	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	11	11	10	11	11
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.96		1.00	0.97	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2901			2920		1499	1570		1510	1566	
Flt Permitted		0.82			0.63		0.17	1.00		0.53	1.00	
Satd. Flow (perm)		2384			1845		267	1570		835	1566	
Peak-hour factor, PHF	0.80	0.96	0.86	0.84	0.88	0.72	0.80	0.84	0.88	0.69	0.87	0.74
Adj. Flow (vph)	44	473	72	112	455	36	108	192	64	32	317	96
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	589	0	0	603	0	108	256	0	32	413	0
Confl. Peds. (#/hr)	18		48	48		18	29		13	13		29
Confl. Bikes (#/hr)												4
Heavy Vehicles (%)	0%	1%	2%	1%	1%	4%	1%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		41.1			41.1		47.9	38.4		38.6	33.6	
Effective Green, g (s)		41.1			41.1		47.9	38.4		38.6	33.6	
Actuated g/C Ratio		0.34			0.34		0.40	0.32		0.32	0.28	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		816			631		207	502		296	438	
v/s Ratio Prot							c0.04	0.16		0.00	c0.26	
v/s Ratio Perm		0.25			c0.33		0.17			0.03		
v/c Ratio		0.72			0.96		0.52	0.51		0.11	0.94	
Uniform Delay, d1		34.5			38.6		26.5	33.2		28.3	42.3	
Progression Factor		1.00			0.54		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.5			22.0		2.4	0.8		0.2	28.9	
Delay (s)		39.9			42.7		28.9	34.0		28.4	71.1	
Level of Service		D			D		C	C		C	E	
Approach Delay (s)		39.9			42.7			32.5			68.1	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	45.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	99	8	189	109	6	13	4	95	6	0	2
Future Volume (vph)	3	99	8	189	109	6	13	4	95	6	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	14	12	12	13	12	12	10	12
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
Ped Bike Factor												
Frt		0.987			0.997			0.899			0.955	
Flt Protected		0.997			0.969			0.992			0.968	
Satd. Flow (prot)	0	1724	0	0	1751	0	0	1532	0	0	1475	0
Flt Permitted		0.997			0.969			0.992			0.968	
Satd. Flow (perm)	0	1724	0	0	1751	0	0	1532	0	0	1475	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		521			453			566			491	
Travel Time (s)		11.8			10.3			12.9			11.2	
Confl. Peds. (#/hr)	6		4	4		6	5		3	3		5
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.38	0.95	0.67	0.80	0.85	0.75	0.54	0.33	0.88	0.38	0.92	0.25
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	25%	1%	0%	0%	0%
Adj. Flow (vph)	8	104	12	236	128	8	24	12	108	16	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	0	0	372	0	0	144	0	0	24	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	1.14	1.10	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.9%		ICU Level of Service A	
Analysis Period (min) 15			

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	3	99	8	189	109	6	13	4	95	6	0	2
Future Vol, veh/h	3	99	8	189	109	6	13	4	95	6	0	2
Conflicting Peds, #/hr	6	0	4	4	0	6	5	0	3	3	0	5
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	38	95	67	80	85	75	54	33	88	38	92	25
Heavy Vehicles, %	0	1	0	1	0	0	0	25	1	0	0	0
Mvmt Flow	8	104	12	236	128	8	24	12	108	16	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	142	0	0	120	0	0	743	744	117	799	746	143
Stage 1	-	-	-	-	-	-	130	130	-	610	610	-
Stage 2	-	-	-	-	-	-	613	614	-	189	136	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.1	6.75	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.75	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.75	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.5	4.225	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1453	-	-	1474	-	-	334	317	938	306	344	910
Stage 1	-	-	-	-	-	-	878	746	-	485	488	-
Stage 2	-	-	-	-	-	-	483	448	-	817	788	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1446	-	-	1468	-	-	283	258	931	223	280	901
Mov Cap-2 Maneuver	-	-	-	-	-	-	283	258	-	223	280	-
Stage 1	-	-	-	-	-	-	869	739	-	480	401	-
Stage 2	-	-	-	-	-	-	393	368	-	704	780	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	5	13.2	18.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	581	1446	-	-	1468	-	-	299
HCM Lane V/C Ratio	0.248	0.005	-	-	0.161	-	-	0.08
HCM Control Delay (s)	13.2	7.5	0	-	7.9	0	-	18.1
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1	0	-	-	0.6	-	-	0.3

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	67	84	85	54	80	171
Future Volume (vph)	67	84	85	54	80	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.939		0.916	
Flt Protected		0.981			0.982	
Satd. Flow (prot)	0	1678	1429	0	1631	0
Flt Permitted		0.981			0.982	
Satd. Flow (perm)	0	1678	1429	0	1631	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		525	1036		802	
Travel Time (s)		11.9	23.5		18.2	
Confl. Peds. (#/hr)	12			12	2	1
Peak Hour Factor	0.84	0.66	0.79	0.61	0.65	0.84
Heavy Vehicles (%)	0%	0%	4%	6%	0%	1%
Adj. Flow (vph)	80	127	108	89	123	204
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	207	197	0	327	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.25	1.25	1.05	1.05
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.2%		ICU Level of Service A	
Analysis Period (min) 15			

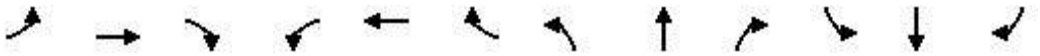
Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	67	84	85	54	80	171
Future Vol, veh/h	67	84	85	54	80	171
Conflicting Peds, #/hr	12	0	0	12	2	1
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	84	66	79	61	65	84
Heavy Vehicles, %	0	0	4	6	0	1
Mvmt Flow	80	127	108	89	123	204

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	209	0	-	0	454	166
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	289	-
Critical Hdwy	4.1	-	-	-	6.4	6.21
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.309
Pot Cap-1 Maneuver	1374	-	-	-	568	881
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	765	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1356	-	-	-	519	868
Mov Cap-2 Maneuver	-	-	-	-	519	-
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	755	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1356	-	-	-	693
HCM Lane V/C Ratio	0.059	-	-	-	0.471
HCM Control Delay (s)	7.8	0	-	-	14.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	2.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	242	18	124	282	12	12	57	78	12	83	31
Future Volume (vph)	94	242	18	124	282	12	12	57	78	12	83	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	12	12	14	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.992			0.994			0.935			0.963	
Flt Protected		0.975			0.987			0.995			0.994	
Satd. Flow (prot)	0	1482	0	0	1789	0	0	1623	0	0	1691	0
Flt Permitted		0.975			0.987			0.995			0.994	
Satd. Flow (perm)	0	1482	0	0	1789	0	0	1623	0	0	1691	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		459			455			883			496	
Travel Time (s)		10.4			10.3			20.1			11.3	
Confl. Peds. (#/hr)	11		8	8		11	3		4	4		3
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.26	0.77	0.45	0.97	0.85	0.60	0.60	0.75	0.89	0.60	0.87	0.71
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%
Adj. Flow (vph)	362	314	40	128	332	20	20	76	88	20	95	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	716	0	0	480	0	0	184	0	0	159	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	1.14	1.30	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.9

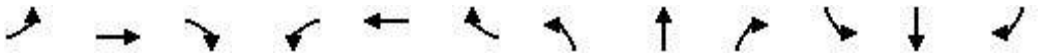
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	94	242	18	124	282	12	12	57	78	12	83	31
Future Vol, veh/h	94	242	18	124	282	12	12	57	78	12	83	31
Conflicting Peds, #/hr	11	0	8	8	0	11	3	0	4	4	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	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	26	77	45	97	85	60	60	75	89	60	87	71
Heavy Vehicles, %	0	1	0	0	0	0	0	2	1	0	0	0
Mvmt Flow	362	314	40	128	332	20	20	76	88	20	95	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	363	0	0	362	0	0	1737	1685	346	1753	1695	356
Stage 1	-	-	-	-	-	-	1066	1066	-	609	609	-
Stage 2	-	-	-	-	-	-	671	619	-	1144	1086	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.52	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4.018	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1207	-	-	1208	-	-	69	94	699	68	~ 94	693
Stage 1	-	-	-	-	-	-	271	299	-	486	488	-
Stage 2	-	-	-	-	-	-	449	480	-	245	295	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1193	-	-	1198	-	-	-	~ 50	690	-	~ 50	684
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 50	-	-	~ 50	-
Stage 1	-	-	-	-	-	-	167	184	-	298	418	-
Stage 2	-	-	-	-	-	-	281	411	-	77	181	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.7	2.2		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1193	-	-	1198	-	-	-
HCM Lane V/C Ratio	-	0.303	-	-	0.107	-	-	-
HCM Control Delay (s)	-	9.3	0	-	8.4	0	-	-
HCM Lane LOS	-	A	A	-	A	A	-	-
HCM 95th %tile Q(veh)	-	1.3	-	-	0.4	-	-	-

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	152	59	27	136	35	31	64	21	17	39	11
Future Volume (vph)	12	152	59	27	136	35	31	64	21	17	39	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	15	12	12	13	12
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
Ped Bike Factor												
Frt		0.962			0.977			0.981			0.977	
Flt Protected		0.997			0.992			0.987			0.988	
Satd. Flow (prot)	0	1630	0	0	1519	0	0	1807	0	0	1632	0
Flt Permitted		0.997			0.992			0.987			0.988	
Satd. Flow (perm)	0	1630	0	0	1519	0	0	1807	0	0	1632	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			695			637			578	
Travel Time (s)		9.3			15.8			14.5			13.1	
Confl. Peds. (#/hr)	1		6	6		1			3	3		
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.60	0.79	0.70	0.68	0.85	0.88	0.71	0.64	0.88	0.71	0.70	0.69
Heavy Vehicles (%)	0%	1%	0%	4%	1%	3%	3%	0%	0%	12%	0%	9%
Adj. Flow (vph)	20	192	84	40	160	40	44	100	24	24	56	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	296	0	0	240	0	0	168	0	0	96	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	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.01	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	152	59	27	136	35	31	64	21	17	39	11
Future Vol, veh/h	12	152	59	27	136	35	31	64	21	17	39	11
Conflicting Peds, #/hr	1	0	6	6	0	1	0	0	3	3	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	60	79	70	68	85	88	71	64	88	71	70	69
Heavy Vehicles, %	0	1	0	4	1	3	3	0	0	12	0	9
Mvmt Flow	20	192	84	40	160	40	44	100	24	24	56	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	201	0	0	282	0	0	576	561	243	600	583	181
Stage 1	-	-	-	-	-	-	280	280	-	261	261	-
Stage 2	-	-	-	-	-	-	296	281	-	339	322	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.13	6.5	6.2	7.22	6.5	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	6.22	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	6.22	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.527	4	3.3	3.608	4	3.381
Pot Cap-1 Maneuver	1383	-	-	1269	-	-	427	439	801	399	427	844
Stage 1	-	-	-	-	-	-	725	683	-	722	696	-
Stage 2	-	-	-	-	-	-	710	682	-	655	655	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1382	-	-	1260	-	-	357	413	793	302	401	843
Mov Cap-2 Maneuver	-	-	-	-	-	-	357	413	-	302	401	-
Stage 1	-	-	-	-	-	-	708	667	-	709	670	-
Stage 2	-	-	-	-	-	-	616	657	-	530	639	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.3	18.9	16.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	425	1382	-	-	1260	-	-	403
HCM Lane V/C Ratio	0.394	0.014	-	-	0.032	-	-	0.237
HCM Control Delay (s)	18.9	7.6	0	-	8	0	-	16.7
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.8	0	-	-	0.1	-	-	0.9

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	93	66	34	308	547	163
Future Volume (vph)	93	66	34	308	548	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.943				0.969	
Flt Protected	0.972			0.995		
Satd. Flow (prot)	1548	0	0	1701	1644	0
Flt Permitted	0.972			0.995		
Satd. Flow (perm)	1548	0	0	1701	1644	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	756			591	599	
Travel Time (s)	17.2			13.4	13.6	
Confl. Peds. (#/hr)	6		5			5
Peak Hour Factor	0.86	0.83	0.77	0.87	0.87	0.87
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%
Adj. Flow (vph)	108	80	44	354	630	187
Shared Lane Traffic (%)						
Lane Group Flow (vph)	188	0	0	398	817	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.4%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	93	66	34	308	547	163
Future Vol, veh/h	93	66	34	308	548	163
Conflicting Peds, #/hr	6	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	83	77	87	87	87
Heavy Vehicles, %	0	3	0	0	1	0
Mvmt Flow	108	80	44	354	630	187

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1177	729	822	0	-	0
Stage 1	729	-	-	-	-	-
Stage 2	448	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.2	-	-	-
Pot Cap-1 Maneuver	213	421	816	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	197	419	812	-	-	-
Mov Cap-2 Maneuver	197	-	-	-	-	-
Stage 1	446	-	-	-	-	-
Stage 2	645	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	50.8	1.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	812	-	254	-	-
HCM Lane V/C Ratio	0.054	-	0.739	-	-
HCM Control Delay (s)	9.7	0	50.8	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.2	-	5.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Future Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	10	10	12	10	10	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00	0.98	1.00				1.00	
Frt		0.981				0.850		0.991			0.988	
Flt Protected		0.984			0.996		0.950			0.950		
Satd. Flow (prot)	0	3088	0	0	1676	1507	1636	1737	0	1685	1730	0
Flt Permitted		0.701			0.947		0.323			0.148		
Satd. Flow (perm)	0	2198	0	0	1594	1474	556	1737	0	262	1730	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								3				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			193			991			1083	
Travel Time (s)		8.6			4.4			22.5			24.6	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.80	0.93	0.66	0.91	0.73	0.53	0.67	0.66	0.52	0.47	0.81	0.91
Heavy Vehicles (%)	4%	4%	12%	10%	5%	0%	3%	1%	4%	0%	1%	2%
Adj. Flow (vph)	114	191	44	19	248	474	67	659	40	332	623	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	349	0	0	267	474	67	699	0	332	675	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.09	1.09	1.09	1.09	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phase	4	4		8	8	5	6	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	10.0	10.0		6.0	10.0	
Minimum Split (s)	12.5	12.5		12.5	12.5	10.0	17.5	17.5		10.0	17.5	
Total Split (s)	22.0	22.0		22.0	22.0	10.0	30.0	30.0		10.0	40.0	
Total Split (%)	24.4%	24.4%		24.4%	24.4%	11.1%	33.3%	33.3%		11.1%	44.4%	
Maximum Green (s)	15.5	15.5		15.5	15.5	6.0	22.5	22.5		6.0	32.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	31%
Maximum Green (s)	24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	0.0	3.5	3.5		0.0	3.5	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.8			15.8	24.5	23.0	23.0		36.8	33.2	
Actuated g/C Ratio		0.23			0.23	0.36	0.34	0.34		0.54	0.49	
v/c Ratio		0.68			0.72	0.88	0.35	1.18		1.23	0.79	
Control Delay		34.1			39.2	40.2	27.2	122.0		148.6	25.9	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		34.1			39.2	40.2	27.2	122.0		148.6	25.9	
LOS		C			D	D	C	F		F	C	
Approach Delay		34.1			39.9			113.7			66.4	
Approach LOS		C			D			F			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 67.6			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.23			
Intersection Signal Delay: 68.2		Intersection LOS: E	
Intersection Capacity Utilization 80.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Highland Ave & Webster St

Lane Group	Ø9
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

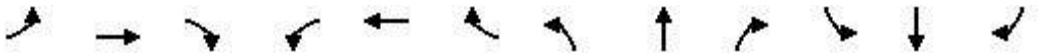
Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	349	267	474	67	699	332	675
v/c Ratio	0.68	0.72	0.88	0.35	1.18	1.23	0.79
Control Delay	34.1	39.2	40.2	27.2	122.0	148.6	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	39.2	40.2	27.2	122.0	148.6	25.9
Queue Length 50th (ft)	61	90	135	18	~310	~97	181
Queue Length 95th (ft)	#188	#217	192	53	#512	#119	#541
Internal Link Dist (ft)	299	113			911		1003
Turn Bay Length (ft)				60			
Base Capacity (vph)	515	373	537	189	593	271	850
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.72	0.88	0.35	1.18	1.23	0.79

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

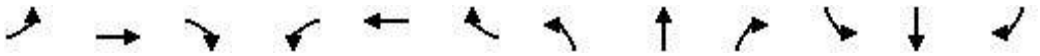
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Future Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	12	10	10	10	10	12	10	10	12
Total Lost time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Lane Util. Factor		0.95			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.98			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3087			1677	1484	1634	1738		1685	1731	
Flt Permitted		0.70			0.95	1.00	0.32	1.00		0.15	1.00	
Satd. Flow (perm)		2198			1594	1484	555	1738		262	1731	
Peak-hour factor, PHF	0.80	0.93	0.66	0.91	0.73	0.53	0.67	0.66	0.52	0.47	0.81	0.91
Adj. Flow (vph)	114	191	44	19	248	474	67	659	40	332	623	52
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	349	0	0	267	474	67	697	0	332	675	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	4%	12%	10%	5%	0%	3%	1%	4%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		15.8			15.8	21.9	23.1	23.1		33.2	33.2	
Effective Green, g (s)		15.8			15.8	21.9	23.1	23.1		33.2	33.2	
Actuated g/C Ratio		0.22			0.22	0.31	0.33	0.33		0.47	0.47	
Clearance Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		491			356	460	181	568		246	814	
v/s Ratio Prot						c0.09		0.40		c0.12	0.39	
v/s Ratio Perm		0.16			0.17	0.23	0.12			c0.52		
v/c Ratio		0.71			0.75	1.03	0.37	1.23		1.35	0.83	
Uniform Delay, d1		25.3			25.6	24.3	18.2	23.7		16.6	16.2	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.0			7.7	50.0	0.5	117.1		181.8	6.7	
Delay (s)		29.3			33.2	74.3	18.6	140.9		198.4	22.9	
Level of Service		C			C	E	B	F		F	C	
Approach Delay (s)		29.3			59.5			130.2			80.8	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	82.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	22.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	73	72	4	54	18	117	426	14	10	477	65
Future Volume (vph)	35	73	72	4	54	18	117	426	14	10	477	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	11	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.950			0.950			0.994			0.983	
Flt Protected		0.989			0.997			0.989			0.999	
Satd. Flow (prot)	0	1592	0	0	1531	0	0	1656	0	0	1672	0
Flt Permitted		0.989			0.997			0.989			0.999	
Satd. Flow (perm)	0	1592	0	0	1531	0	0	1656	0	0	1672	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		695			444			621			443	
Travel Time (s)		15.8			10.1			14.1			10.1	
Confl. Peds. (#/hr)	1								1			
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.60	0.65	0.73	0.50	0.80	0.40	0.69	0.80	0.46	0.75	0.90	0.81
Heavy Vehicles (%)	0%	5%	6%	0%	4%	0%	4%	5%	8%	0%	4%	3%
Adj. Flow (vph)	58	112	99	8	68	45	170	533	30	13	530	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	269	0	0	121	0	0	733	0	0	623	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	1.14	1.10	1.14	1.14	1.19	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 93.9%		ICU Level of Service F	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	213.5

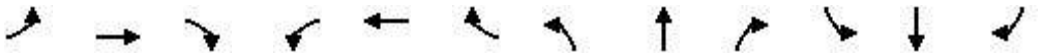
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	73	72	4	54	18	117	426	14	10	477	65
Future Vol, veh/h	35	73	72	4	54	18	117	426	14	10	477	65
Conflicting Peds, #/hr	1	0	0	0	0	0	0	0	1	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	65	73	50	80	40	69	80	46	75	90	81
Heavy Vehicles, %	0	5	6	0	4	0	4	5	8	0	4	3
Mvmt Flow	58	112	99	8	68	45	170	533	30	13	530	80

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1542	1500	570	1591	1525	550	610	0	0	564	0	0
Stage 1	596	596	-	889	889	-	-	-	-	-	-	-
Stage 2	946	904	-	702	636	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.55	6.26	7.1	6.54	6.2	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.55	-	6.1	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.55	-	6.1	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.045	3.354	3.5	4.036	3.3	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	95	120	513	88	117	539	959	-	-	1018	-	-
Stage 1	494	487	-	341	359	-	-	-	-	-	-	-
Stage 2	317	352	-	432	469	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 25	~ 87	513	-	85	538	959	-	-	1017	-	-
Mov Cap-2 Maneuver	~ 25	~ 87	-	-	85	-	-	-	-	-	-	-
Stage 1	366	477	-	252	266	-	-	-	-	-	-	-
Stage 2	160	260	-	261	460	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 1377.8		2.2	0.2
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	959	-	-	71	-	1017	-	-
HCM Lane V/C Ratio	0.177	-	-	3.793	-	0.013	-	-
HCM Control Delay (s)	9.6	0	-	$ 1377.8	-	8.6	0	-
HCM Lane LOS	A	A	-	F	-	A	A	-
HCM 95th %tile Q(veh)	0.6	-	-	28.3	-	0	-	-

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



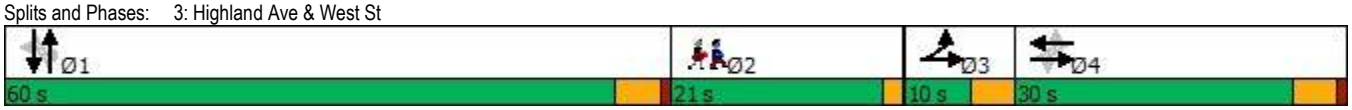
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Future Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	9	10	12	12	13	12	12	13	12
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.99	0.99			0.99			0.99	
Frt		0.974			0.968			0.991			0.946	
Flt Protected	0.950			0.950				0.997			0.998	
Satd. Flow (prot)	1462	1479	0	1037	1468	0	0	1659	0	0	1576	0
Flt Permitted	0.400			0.557				0.946			0.964	
Satd. Flow (perm)	614	1479	0	602	1468	0	0	1574	0	0	1521	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		455			303			836			621	
Travel Time (s)		10.3			6.9			19.0			14.1	
Confl. Peds. (#/hr)	2		6	6		2	5		46	46		5
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.89	0.90	0.61	0.53	0.78	0.82	0.64	0.74	0.72	0.63	0.87	0.69
Heavy Vehicles (%)	0%	1%	0%	41%	6%	0%	6%	5%	0%	0%	5%	5%
Adj. Flow (vph)	198	248	51	36	181	50	31	524	42	27	380	271
Shared Lane Traffic (%)												
Lane Group Flow (vph)	198	299	0	36	231	0	0	597	0	0	678	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)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.14	1.30	1.25	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Detector Phase	3	3 4		4	4		1	1		1	1	
Switch Phase												
Minimum Initial (s)	6.0			6.0	6.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.0			11.0	11.0		15.0	15.0		15.0	15.0	
Total Split (s)	10.0			30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	8.3%			24.8%	24.8%		49.6%	49.6%		49.6%	49.6%	
Maximum Green (s)	6.0			25.0	25.0		55.0	55.0		55.0	55.0	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	17%
Maximum Green (s)	19.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0			4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0			1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.0			5.0	5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			4.0	4.0		2.0	2.0		2.0	2.0	
Recall Mode	None			None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	28.9	33.1		21.7	21.7			53.2			53.2	
Actuated g/C Ratio	0.27	0.31		0.20	0.20			0.50			0.50	
v/c Ratio	0.92	0.65		0.30	0.78			0.76			0.89	
Control Delay	82.0	42.2		47.4	61.0			32.5			43.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	82.0	42.2		47.4	61.0			32.5			43.6	
LOS	F	D		D	E			C			D	
Approach Delay		58.1			59.1			32.5			43.6	
Approach LOS		E			E			C			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 121			
Actuated Cycle Length: 106.7			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 45.9		Intersection LOS: D	
Intersection Capacity Utilization 72.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Highland Ave & West St



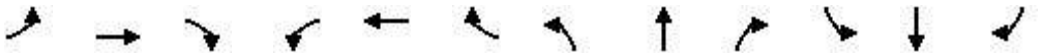
Lane Group	Ø2
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	29
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	198	299	36	231	597	678
v/c Ratio	0.92	0.65	0.30	0.78	0.76	0.89
Control Delay	82.0	42.2	47.4	61.0	32.5	43.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.0	42.2	47.4	61.0	32.5	43.6
Queue Length 50th (ft)	126	206	24	171	401	510
Queue Length 95th (ft)	#278	310	33	222	408	#727
Internal Link Dist (ft)		375		223	756	541
Turn Bay Length (ft)			150			
Base Capacity (vph)	215	516	146	356	839	811
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.58	0.25	0.65	0.71	0.84

Intersection Summary

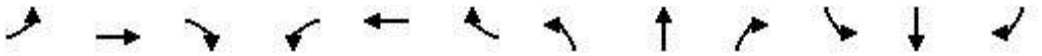
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Future Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	12	9	10	12	12	13	12	12	13	12
Total Lost time (s)	4.0	4.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.97			0.99			0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1461	1480		1027	1467			1659			1575	
Flt Permitted	0.40	1.00		0.56	1.00			0.95			0.96	
Satd. Flow (perm)	615	1480		602	1467			1574			1522	
Peak-hour factor, PHF	0.89	0.90	0.61	0.53	0.78	0.82	0.64	0.74	0.72	0.63	0.87	0.69
Adj. Flow (vph)	198	248	51	36	181	50	31	524	42	27	380	271
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	198	299	0	36	231	0	0	597	0	0	678	0
Confl. Peds. (#/hr)	2		6	6		2	5		46	46		5
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	1%	0%	41%	6%	0%	6%	5%	0%	0%	5%	5%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Actuated Green, G (s)	27.9	31.9		21.7	21.7			53.2			53.2	
Effective Green, g (s)	27.9	31.9		21.7	21.7			53.2			53.2	
Actuated g/C Ratio	0.26	0.30		0.20	0.20			0.50			0.50	
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	
Vehicle Extension (s)	2.0			4.0	4.0			2.0			2.0	
Lane Grp Cap (vph)	209	440		121	297			781			756	
v/s Ratio Prot	c0.05	0.20			0.16							
v/s Ratio Perm	c0.19			0.06				0.38			c0.45	
v/c Ratio	0.95	0.68		0.30	0.78			0.76			0.90	
Uniform Delay, d1	38.6	33.1		36.2	40.4			21.9			24.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	46.6	3.3		1.9	12.8			4.0			13.0	
Delay (s)	85.2	36.4		38.1	53.2			25.9			37.4	
Level of Service	F	D		D	D			C			D	
Approach Delay (s)		55.8			51.1			25.9			37.4	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	107.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Future Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	9	11	9	12	11	13	12	12	16	12
Storage Length (ft)	0		25	50		0	60		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.90		0.95	0.99		0.99				1.00	
Frt		0.880			0.965						0.989	
Flt Protected		0.995		0.950			0.950					
Satd. Flow (prot)	0	1207	0	1570	1440	0	1540	1683	0	0	1831	0
Flt Permitted		0.943		0.408			0.371					
Satd. Flow (perm)	0	1142	0	642	1440	0	597	1683	0	0	1831	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		257			17							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1036			474			1055			1271	
Travel Time (s)		23.5			10.8			24.0			28.9	
Confl. Peds. (#/hr)	8		46	46		8	12		17	17		12
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.68	0.92	0.68	0.60	0.59	0.64	0.75	0.83	0.92	0.92	0.79	0.72
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%	2%	5%	0%	0%	4%	8%
Adj. Flow (vph)	31	0	257	90	100	31	149	530	0	0	453	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	288	0	90	131	0	149	530	0	0	495	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)		11			11			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.30	1.19	1.30	1.14	1.19	1.10	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2			2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	20	100		20	100		20	100			100	
Trailing Detector (ft)	0	0		0	0		0	0			0	
Detector 1 Position(ft)	0	0		0	0		0	0			0	
Detector 1 Size(ft)	20	6		20	6		20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0			12.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0			40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%			44.4%	
Maximum Green (s)	23.0	23.0		23.0	23.0		33.0	33.0			33.0	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		Max	Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.2		14.2	14.2		34.7	34.7			34.7	
Actuated g/C Ratio		0.19		0.19	0.19		0.47	0.47			0.47	
v/c Ratio		0.67		0.73	0.45		0.53	0.67			0.58	
Control Delay		14.5		62.9	29.5		30.1	25.9			22.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		14.5		62.9	29.5		30.1	25.9			22.3	
LOS		B		E	C		C	C			C	
Approach Delay		14.5			43.1			26.8			22.3	
Approach LOS		B			D			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 73.9			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 25.5		Intersection LOS: C	
Intersection Capacity Utilization 70.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Highland Ave & Rosemary St

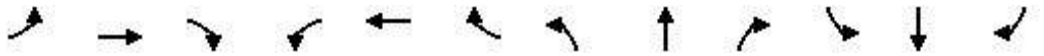
Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	41
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	288	90	131	149	530	495
v/c Ratio	0.67	0.73	0.45	0.53	0.67	0.58
Control Delay	14.5	62.9	29.5	30.1	25.9	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	62.9	29.5	30.1	25.9	22.3
Queue Length 50th (ft)	14	44	52	60	234	205
Queue Length 95th (ft)	92	58	61	112	#395	296
Internal Link Dist (ft)	956		394		975	1191
Turn Bay Length (ft)		50		60		
Base Capacity (vph)	546	209	482	279	789	858
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.43	0.27	0.53	0.67	0.58

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Future Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	9	11	9	12	11	13	12	12	16	12
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		0.88		1.00	0.99		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		0.94	1.00		0.99	1.00			1.00	
Frt		0.88		1.00	0.96		1.00	1.00			0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1168		1481	1437		1531	1683			1831	
Flt Permitted		0.94		0.41	1.00		0.37	1.00			1.00	
Satd. Flow (perm)		1107		637	1437		598	1683			1831	
Peak-hour factor, PHF	0.68	0.92	0.68	0.60	0.59	0.64	0.75	0.83	0.92	0.92	0.79	0.72
Adj. Flow (vph)	31	0	257	90	100	31	149	530	0	0	453	42
RTOR Reduction (vph)	0	208	0	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	80	0	90	117	0	149	530	0	0	495	0
Confl. Peds. (#/hr)	8		46	46		8	12		17	17		12
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%	2%	5%	0%	0%	4%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		14.2		14.2	14.2		34.7	34.7			34.7	
Effective Green, g (s)		14.2		14.2	14.2		34.7	34.7			34.7	
Actuated g/C Ratio		0.19		0.19	0.19		0.47	0.47			0.47	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		211		121	275		279	787			856	
v/s Ratio Prot					0.08			c0.31			0.27	
v/s Ratio Perm		0.07		c0.14			0.25					
v/c Ratio		0.38		0.74	0.43		0.53	0.67			0.58	
Uniform Delay, d1		26.2		28.3	26.4		14.0	15.3			14.4	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.1		21.7	1.1		7.2	4.6			2.8	
Delay (s)		27.3		50.0	27.5		21.2	19.9			17.3	
Level of Service		C		D	C		C	B			B	
Approach Delay (s)		27.3			36.6			20.2			17.3	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	74.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

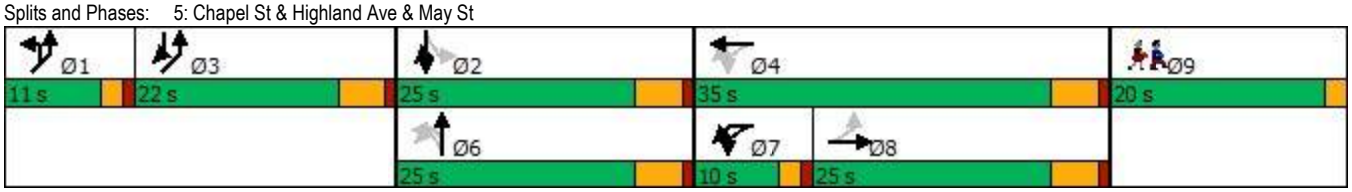
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Future Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12	10	12	12	12	16	12
Storage Length (ft)	0		0			0		0		0		0
Storage Lanes	0		0			0		0		0		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					0.99				1.00	
Frt		0.978					0.974				0.984	
Flt Protected		0.985					0.987				0.997	
Satd. Flow (prot)	0	1666	0	0	0	0	1492	0	0	0	1823	0
Flt Permitted		0.634					0.709				0.970	
Satd. Flow (perm)	0	1070	0	0	0	0	1072	0	0	0	1773	0
Right Turn on Red				No				Yes				No
Satd. Flow (RTOR)							10					
Link Speed (mph)		30					30				30	
Link Distance (ft)		453					923				945	
Travel Time (s)		10.3					21.0				21.5	
Confl. Peds. (#/hr)	7							7		3		2
Peak Hour Factor	0.72	0.62	0.92	0.50	0.64	0.55	0.65	0.60	0.50	0.56	0.64	0.50
Heavy Vehicles (%)	0%	3%	0%	8%	0%	0%	4%	0%	0%	0%	4%	6%
Adj. Flow (vph)	119	218	39	26	48	71	254	88	4	18	269	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	402	0	0	0	0	461	0	0	0	331	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Left	Left	Right
Median Width(ft)		0					0				0	
Link Offset(ft)		0					0				0	
Crosswalk Width(ft)		16					16				16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2		1	1	2	
Detector Template	Left	Thru			Left	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100		20	20	100	
Trailing Detector (ft)	0	0			0	0	0		0	0	0	
Detector 1 Position(ft)	0	0			0	0	0		0	0	0	
Detector 1 Size(ft)	20	6			20	20	6		20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Detector Phase	8	8			7	7	4		6	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0			2.0	2.0	6.0		6.0	6.0	6.0	
Minimum Split (s)	11.0	11.0			6.0	6.0	11.0		11.0	11.0	11.0	
Total Split (s)	25.0	25.0			10.0	10.0	35.0		25.0	25.0	25.0	
Total Split (%)	22.1%	22.1%			8.8%	8.8%	31.0%		22.1%	22.1%	22.1%	
Maximum Green (s)	20.0	20.0			7.0	7.0	30.0		20.0	20.0	20.0	
Yellow Time (s)	4.0	4.0			2.0	2.0	4.0		4.0	4.0	4.0	

Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Lane Configurations										
Traffic Volume (vph)	15	129	189	89	11	268	39	9		
Future Volume (vph)	15	129	189	89	11	268	39	9		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	10	11	12	10	11	11	11		
Storage Length (ft)	0		120			0	60			
Storage Lanes	0		1			2	1			
Taper Length (ft)	25					25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00				0.99				
Frt			0.850			0.970				
Flt Protected		0.994			0.950	0.962				
Satd. Flow (prot)	0	1533	1352	0	1516	1447	0	0		
Flt Permitted		0.848			0.950	0.962				
Satd. Flow (perm)	0	1308	1352	0	1516	1436	0	0		
Right Turn on Red				No				Yes		
Satd. Flow (RTOR)						116				
Link Speed (mph)		30				30				
Link Distance (ft)		644				580				
Travel Time (s)		14.6				13.2				
Confl. Peds. (#/hr)	2			3		7	2			
Peak Hour Factor	0.70	0.79	0.91	0.81	0.63	0.91	0.63	0.67		
Heavy Vehicles (%)	7%	3%	6%	0%	0%	7%	3%	0%		
Adj. Flow (vph)	21	163	208	110	17	295	62	13		
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	184	318	0	17	370	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Right	Left	Left	Right	Right		
Median Width(ft)		0				21				
Link Offset(ft)		0				0				
Crosswalk Width(ft)		16				16				
Two way Left Turn Lane										
Headway Factor	1.14	1.25	1.19	1.14	1.25	1.19	1.19	1.19		
Turning Speed (mph)	15		9	9	15	15	9	9		
Number of Detectors	1	2	1		1	1				
Detector Template	Left	Thru	Right		Left	Left				
Leading Detector (ft)	20	100	20		20	20				
Trailing Detector (ft)	0	0	0		0	0				
Detector 1 Position(ft)	0	0	0		0	0				
Detector 1 Size(ft)	20	6	20		20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)		94								
Detector 2 Size(ft)		6								
Detector 2 Type		Cl+Ex								
Detector 2 Channel										
Detector 2 Extend (s)		0.0								
Turn Type	Perm	NA	custom		Prot	Prot				
Protected Phases		2	2 3		1	1 3			3	9
Permitted Phases	2									
Detector Phase	2	2	2 3		1	1 3				
Switch Phase										
Minimum Initial (s)	6.0	6.0			1.0				4.0	5.0
Minimum Split (s)	11.0	11.0			6.0				9.0	20.0
Total Split (s)	25.0	25.0			11.0				22.0	20.0
Total Split (%)	22.1%	22.1%			9.7%				19%	18%
Maximum Green (s)	20.0	20.0			8.0				17.0	18.0
Yellow Time (s)	4.0	4.0			2.0				4.0	2.0

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0				0.0	
Total Lost Time (s)		5.0					5.0				5.0	
Lead/Lag	Lag	Lag			Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None			None	None	None		Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		30.2					30.2				20.1	
Actuated g/C Ratio		0.31					0.31				0.21	
v/c Ratio		1.20					1.35				0.89	
Control Delay		147.0					203.6				65.7	
Queue Delay		0.0					0.0				0.0	
Total Delay		147.0					203.6				65.7	
LOS		F					F				E	
Approach Delay		147.0					203.6				65.7	
Approach LOS		F					F				E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 113			
Actuated Cycle Length: 96.3			
Natural Cycle: 130			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.35			
Intersection Signal Delay: 97.9		Intersection LOS: F	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Chapel St & Highland Ave & May St



Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
All-Red Time (s)	1.0	1.0			1.0				1.0	0.0
Lost Time Adjust (s)		0.0			0.0					
Total Lost Time (s)		5.0			3.0					
Lead/Lag					Lead				Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0
Recall Mode	Min	Min			None				None	None
Walk Time (s)										7.0
Flash Dont Walk (s)										11.0
Pedestrian Calls (#/hr)										12
Act Effct Green (s)		20.1	41.6		8.1	29.5				
Actuated g/C Ratio		0.21	0.43		0.08	0.31				
v/c Ratio		0.67	0.55		0.13	0.71				
Control Delay		50.5	26.1		46.9	29.5				
Queue Delay		0.0	0.0		0.0	0.0				
Total Delay		50.5	26.1		46.9	29.5				
LOS		D	C		D	C				
Approach Delay		35.0				30.3				
Approach LOS		D				C				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR	NEL2	NEL
Lane Group Flow (vph)	402	461	331	184	318	17	370
v/c Ratio	1.20	1.35	0.89	0.67	0.55	0.13	0.71
Control Delay	147.0	203.6	65.7	50.5	26.1	46.9	29.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	147.0	203.6	65.7	50.5	26.1	46.9	29.5
Queue Length 50th (ft)	~284	~351	190	100	130	9	129
Queue Length 95th (ft)	#338	#427	#242	#196	291	25	#327
Internal Link Dist (ft)	373	843	865	564			500
Turn Bay Length (ft)					120		
Base Capacity (vph)	335	342	370	273	578	126	533
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.20	1.35	0.89	0.67	0.55	0.13	0.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

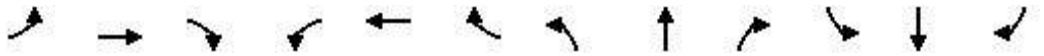
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Future Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12	10	12	12	12	16	12
Total Lost time (s)		5.0					5.0				5.0	
Lane Util. Factor		1.00					1.00				1.00	
Frpb, ped/bikes		1.00					0.99				1.00	
Flpb, ped/bikes		1.00					1.00				1.00	
Frt		0.98					0.97				0.98	
Flt Protected		0.99					0.99				1.00	
Satd. Flow (prot)		1665					1493				1821	
Flt Permitted		0.63					0.71				0.97	
Satd. Flow (perm)		1071					1072				1772	
Peak-hour factor, PHF	0.72	0.62	0.92	0.50	0.64	0.55	0.65	0.60	0.50	0.56	0.64	0.50
Adj. Flow (vph)	119	218	39	26	48	71	254	88	4	18	269	40
RTOR Reduction (vph)	0	0	0	0	0	0	7	0	0	0	0	0
Lane Group Flow (vph)	0	402	0	0	0	0	454	0	0	0	331	0
Confl. Peds. (#/hr)	7							7		3		2
Heavy Vehicles (%)	0%	3%	0%	8%	0%	0%	4%	0%	0%	0%	4%	6%
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Actuated Green, G (s)		30.2					30.2				20.1	
Effective Green, g (s)		30.2					30.2				20.1	
Actuated g/C Ratio		0.31					0.31				0.21	
Clearance Time (s)		5.0					5.0				5.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		330					330				363	
v/s Ratio Prot												
v/s Ratio Perm		0.38					c0.42				c0.19	
v/c Ratio		1.22					1.38				0.91	
Uniform Delay, d1		33.9					33.9				38.0	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		122.6					187.2				26.4	
Delay (s)		156.4					221.1				64.4	
Level of Service		F					F				E	
Approach Delay (s)		156.4					221.1				64.4	
Approach LOS		F					F				E	

Intersection Summary			
HCM 2000 Control Delay	103.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	97.9	Sum of lost time (s)	23.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	15	129	189	89	11	268	39	9
Future Volume (vph)	15	129	189	89	11	268	39	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	10	11	11	11
Total Lost time (s)		5.0	5.0		3.0	3.0		
Lane Util. Factor		1.00	1.00		1.00	1.00		
Frpb, ped/bikes		1.00	1.00		1.00	1.00		
Flpb, ped/bikes		1.00	1.00		1.00	1.00		
Frt		1.00	0.85		1.00	0.97		
Flt Protected		0.99	1.00		0.95	0.96		
Satd. Flow (prot)		1534	1352		1516	1446		
Flt Permitted		0.85	1.00		0.95	0.96		
Satd. Flow (perm)		1308	1352		1516	1446		
Peak-hour factor, PHF	0.70	0.79	0.91	0.81	0.63	0.91	0.63	0.67
Adj. Flow (vph)	21	163	208	110	17	295	62	13
RTOR Reduction (vph)	0	0	0	0	0	83	0	0
Lane Group Flow (vph)	0	184	318	0	17	287	0	0
Confl. Peds. (#/hr)	2			3		7	2	
Heavy Vehicles (%)	7%	3%	6%	0%	0%	7%	3%	0%
Turn Type	Perm	NA	custom		Prot	Prot		
Protected Phases		2	2 3		1	1 3		
Permitted Phases	2							
Actuated Green, G (s)		20.1	41.5		8.1	27.5		
Effective Green, g (s)		20.1	41.5		8.1	27.5		
Actuated g/C Ratio		0.21	0.42		0.08	0.28		
Clearance Time (s)		5.0			3.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		268	573		125	406		
v/s Ratio Prot			0.24		0.01	c0.20		
v/s Ratio Perm		0.14						
v/c Ratio		0.69	0.55		0.14	0.71		
Uniform Delay, d1		36.0	21.2		41.7	31.6		
Progression Factor		1.00	1.00		1.00	1.00		
Incremental Delay, d2		7.1	1.2		0.5	5.5		
Delay (s)		43.1	22.4		42.2	37.1		
Level of Service		D	C		D	D		
Approach Delay (s)		30.0				37.3		
Approach LOS		C				D		

Intersection Summary



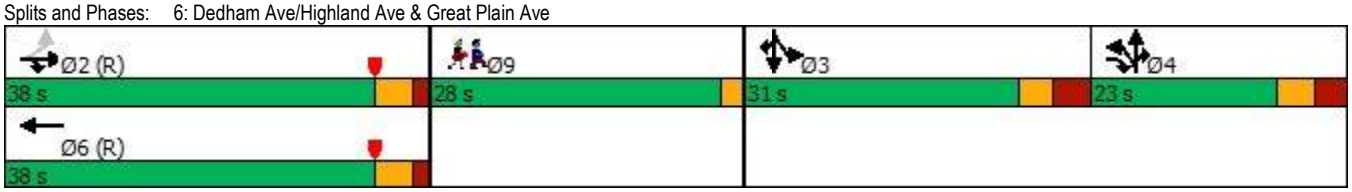
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Future Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	10	10	10	10	10	10	10	10	12
Storage Length (ft)	0		0	0		0	0		35	0		90
Storage Lanes	0		1	0		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt			0.850		0.966				0.850			0.850
Flt Protected		0.992					0.950				0.986	
Satd. Flow (prot)	0	1557	1338	0	2780	0	1458	1565	1292	0	1498	1358
Flt Permitted		0.714					0.950				0.986	
Satd. Flow (perm)	0	1119	1338	0	2780	0	1455	1565	1292	0	1497	1358
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									95			95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		238			434			312			945	
Travel Time (s)		5.4			9.9			7.1			21.5	
Confl. Peds. (#/hr)	11		4	4		11	1		2	2		1
Peak Hour Factor	0.68	0.62	0.77	0.92	0.92	0.71	0.87	0.81	0.69	0.65	0.73	0.52
Heavy Vehicles (%)	0%	2%	5%	0%	4%	6%	4%	2%	5%	0%	7%	7%
Adj. Flow (vph)	81	437	351	0	358	103	302	199	35	46	118	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	518	351	0	461	0	302	199	35	0	164	60
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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1		2		1	2	1	1	2	1
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20		100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20		6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Detector Phase	2	2	2 4		6		4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0			10.0		11.5	11.5	11.5	11.5	11.5	11.5
Total Split (s)	38.0	38.0			38.0		23.0	23.0	23.0	31.0	31.0	31.0
Total Split (%)	31.7%	31.7%			31.7%		19.2%	19.2%	19.2%	25.8%	25.8%	25.8%
Maximum Green (s)	33.0	33.0			33.0		16.5	16.5	16.5	24.5	24.5	24.5
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5	3.0	3.0	3.0

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	26.0
Yellow Time (s)	2.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	1.5	1.5			1.5		3.0	3.0	3.0	3.5	3.5	3.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Lead/Lag							Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Min	C-Min			C-Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		37.6	80.3		37.6		36.2	36.2	36.2		17.4	17.4
Actuated g/C Ratio		0.31	0.67		0.31		0.30	0.30	0.30		0.14	0.14
v/c Ratio		1.48	0.39		0.53		0.69	0.42	0.08		0.76	0.22
Control Delay		250.3	6.2		37.1		50.1	42.4	0.3		69.7	4.2
Queue Delay		0.7	2.4		0.5		4.8	0.0	0.0		0.0	0.0
Total Delay		251.0	8.5		37.7		54.9	42.4	0.3		69.7	4.3
LOS		F	A		D		D	D	A		E	A
Approach Delay		153.1			37.7			46.7			52.2	
Approach LOS		F			D			D			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.48			
Intersection Signal Delay: 89.5		Intersection LOS: F	
Intersection Capacity Utilization 74.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Dedham Ave/Highland Ave & Great Plain Ave



Lane Group	Ø9
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

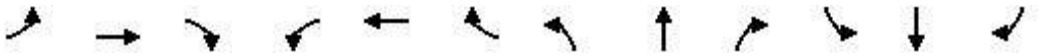
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	518	351	461	302	199	35	164	60
v/c Ratio	1.48	0.39	0.53	0.69	0.42	0.08	0.76	0.22
Control Delay	250.3	6.2	37.1	50.1	42.4	0.3	69.7	4.2
Queue Delay	0.7	2.4	0.5	4.8	0.0	0.0	0.0	0.0
Total Delay	251.0	8.5	37.7	54.9	42.4	0.3	69.7	4.3
Queue Length 50th (ft)	~498	27	138	198	119	0	124	0
Queue Length 95th (ft)	#464	m74	221	#472	#242	0	147	0
Internal Link Dist (ft)	158		354		232		865	
Turn Bay Length (ft)						35		90
Base Capacity (vph)	350	894	870	439	472	456	305	352
Starvation Cap Reductn	21	405	0	0	0	0	0	0
Spillback Cap Reductn	0	0	138	82	0	0	0	15
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.57	0.72	0.63	0.85	0.42	0.08	0.54	0.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

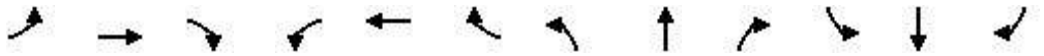
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Future Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	11	10	10	10	10	10	10	10	10	12
Total Lost time (s)		5.0	5.0		5.0		6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00		1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)		1555	1338		2782		1458	1565	1292		1498	1358
Flt Permitted		0.71	1.00		1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)		1119	1338		2782		1458	1565	1292		1498	1358
Peak-hour factor, PHF	0.68	0.62	0.77	0.92	0.92	0.71	0.87	0.81	0.69	0.65	0.73	0.52
Adj. Flow (vph)	81	437	351	0	358	103	302	199	35	46	118	60
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	24	0	0	51
Lane Group Flow (vph)	0	518	351	0	461	0	302	199	11	0	164	9
Confl. Peds. (#/hr)	11		4	4		11	1		2	2		1
Heavy Vehicles (%)	0%	2%	5%	0%	4%	6%	4%	2%	5%	0%	7%	7%
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Actuated Green, G (s)		36.4	79.1		36.4		36.2	36.2	36.2		17.4	17.4
Effective Green, g (s)		36.4	72.6		36.4		36.2	36.2	36.2		17.4	17.4
Actuated g/C Ratio		0.30	0.60		0.30		0.30	0.30	0.30		0.14	0.14
Clearance Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		2.0			2.0		2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		339	809		843		439	472	389		217	196
v/s Ratio Prot			0.26		0.17		c0.21	0.13	0.01		c0.11	0.01
v/s Ratio Perm		c0.46										
v/c Ratio		1.53	0.43		0.55		0.69	0.42	0.03		0.76	0.04
Uniform Delay, d1		41.8	12.7		34.9		36.9	33.5	29.5		49.3	44.1
Progression Factor		0.59	0.39		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		246.7	0.1		2.5		3.6	0.2	0.0		12.5	0.0
Delay (s)		271.5	5.0		37.5		40.5	33.7	29.5		61.7	44.2
Level of Service		F	A		D		D	C	C		E	D
Approach Delay (s)		163.9			37.5			37.3			57.0	
Approach LOS		F			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	92.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



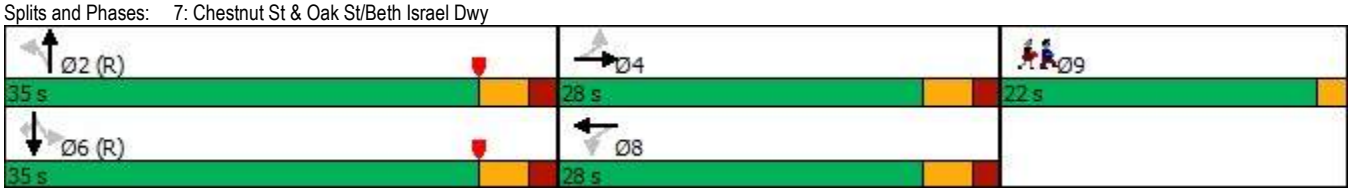
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Future Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	8	8	11	11	11	9	9	12	12	9	9
Storage Length (ft)	0		0	0		0	80		0	0		150
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.939			0.935			0.997				0.850
Flt Protected		0.976			0.986		0.950				0.996	
Satd. Flow (prot)	0	1332	0	0	1494	0	1433	1504	0	0	1503	1283
Flt Permitted		0.834			0.920		0.509				0.938	
Satd. Flow (perm)	0	1138	0	0	1394	0	768	1504	0	0	1415	1283
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								1				78
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			314			227			439	
Travel Time (s)		13.8			7.1			5.2			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	10	80	9	7	15	126	588	11	25	295	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	178	0	0	31	0	126	599	0	0	320	78
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			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.19	1.19	1.19	1.30	1.30	1.14	1.14	1.30	1.30
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	28.0	28.0		28.0	28.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	32.9%	32.9%		32.9%	32.9%		41.2%	41.2%		41.2%	41.2%	41.2%
Maximum Green (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	30.0
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0			5.0	5.0

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	22.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		23.0			23.0		43.2	43.2			43.2	43.2
Actuated g/C Ratio		0.27			0.27		0.51	0.51			0.51	0.51
v/c Ratio		0.58			0.08		0.32	0.78			0.45	0.11
Control Delay		35.6			24.0		19.7	31.0			19.3	5.3
Queue Delay		0.0			0.0		0.0	0.0			0.0	0.0
Total Delay		35.6			24.0		19.7	31.0			19.3	5.3
LOS		D			C		B	C			B	A
Approach Delay		35.6			24.0			29.1			16.5	
Approach LOS		D			C			C			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 26.1		Intersection LOS: C	
Intersection Capacity Utilization 79.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Chestnut St & Oak St/Beth Israel Dwy



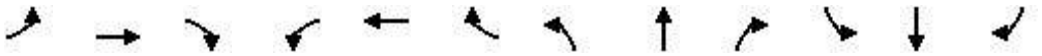
Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	178	31	126	599	320	78
v/c Ratio	0.58	0.08	0.32	0.78	0.45	0.11
Control Delay	35.6	24.0	19.7	31.0	19.3	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	24.0	19.7	31.0	19.3	5.3
Queue Length 50th (ft)	82	12	28	186	78	0
Queue Length 95th (ft)	151	34	106	#580	233	28
Internal Link Dist (ft)	526	234		147	359	
Turn Bay Length (ft)			80			150
Base Capacity (vph)	307	377	390	764	719	690
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.08	0.32	0.78	0.45	0.11

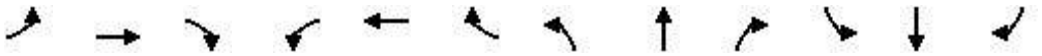
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Future Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	11	11	11	9	9	12	12	9	9
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	1.00
Frt		0.94			0.93		1.00	1.00			1.00	0.85
Flt Protected		0.98			0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1332			1493		1433	1505			1503	1282
Flt Permitted		0.83			0.92		0.51	1.00			0.94	1.00
Satd. Flow (perm)		1138			1394		767	1505			1415	1282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	10	80	9	7	15	126	588	11	25	295	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	39
Lane Group Flow (vph)	0	178	0	0	31	0	126	598	0	0	320	39
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		23.0			23.0		42.0	42.0			42.0	42.0
Effective Green, g (s)		23.0			23.0		42.0	42.0			42.0	42.0
Actuated g/C Ratio		0.27			0.27		0.49	0.49			0.49	0.49
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		307			377		378	743			699	633
v/s Ratio Prot								c0.40				
v/s Ratio Perm		c0.16			0.02		0.16				0.23	0.03
v/c Ratio		0.58			0.08		0.33	0.81			0.46	0.06
Uniform Delay, d1		26.8			23.1		13.0	18.1			14.1	11.2
Progression Factor		1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		7.8			0.4		2.4	9.1			2.2	0.2
Delay (s)		34.6			23.6		15.4	27.2			16.2	11.4
Level of Service		C			C		B	C			B	B
Approach Delay (s)		34.6			23.6			25.1			15.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



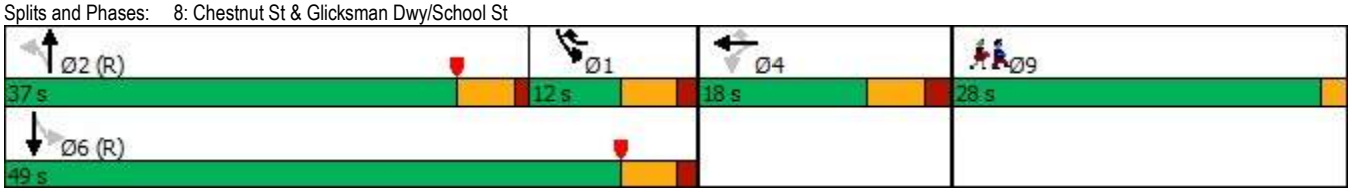
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Future Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	9	13	9	12	12	9	12	12
Storage Length (ft)	0		0	0		150	40		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			70			70			100		
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						0.850		0.950			0.997	
Flt Protected					0.953		0.950			0.950		
Satd. Flow (prot)	0	0	0	0	1438	1473	1433	1593	0	1433	1671	0
Flt Permitted					0.953		0.618			0.182		
Satd. Flow (perm)	0	0	0	0	1438	1473	932	1593	0	275	1671	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						58		29			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		162			420			439			782	
Travel Time (s)		3.7			9.5			10.0			17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	180	4	58	7	501	254	55	221	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	184	58	7	755	0	55	225	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.30	1.30	1.10	1.30	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2		1	2	
Detector Template				Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)				20	100	20	20	100		20	100	
Trailing Detector (ft)				0	0	0	0	0		0	0	
Detector 1 Position(ft)				0	0	0	0	0		0	0	
Detector 1 Size(ft)				20	6	20	20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Detector Phase				4	4	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)				6.0	6.0	6.0	2.0	2.0		6.0	10.0	
Minimum Split (s)				12.0	12.0	11.5	7.0	7.0		11.5	15.5	
Total Split (s)				18.0	18.0	12.0	37.0	37.0		12.0	49.0	
Total Split (%)				18.9%	18.9%	12.6%	38.9%	38.9%		12.6%	51.6%	
Maximum Green (s)				12.0	12.0	6.5	32.0	32.0		6.5	43.5	
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)				2.0	2.0	1.5	1.0	1.0		1.5	1.5	
Lost Time Adjust (s)					0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	29%
Maximum Green (s)	26.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag						Lag	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode				None	None	None	C-Min	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					12.0	21.9	51.4	51.4		61.5	60.3	
Actuated g/C Ratio					0.13	0.23	0.54	0.54		0.65	0.63	
v/c Ratio					1.02	0.15	0.01	0.86		0.22	0.21	
Control Delay					114.8	8.7	19.3	35.6		18.3	11.3	
Queue Delay					0.0	0.0	0.0	37.3		0.0	0.0	
Total Delay					114.8	8.7	19.3	72.8		18.3	11.3	
LOS					F	A	B	E		B	B	
Approach Delay					89.4			72.4			12.7	
Approach LOS					F			E			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 95			
Actuated Cycle Length: 95			
Offset: 9 (9%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 62.5		Intersection LOS: E	
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Chestnut St & Glicksman Dwy/School St



Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

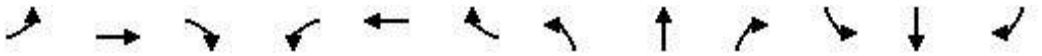
Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	184	58	7	755	55	225
v/c Ratio	1.02	0.15	0.01	0.86	0.22	0.21
Control Delay	114.8	8.7	19.3	35.6	18.3	11.3
Queue Delay	0.0	0.0	0.0	37.3	0.0	0.0
Total Delay	114.8	8.7	19.3	72.8	18.3	11.3
Queue Length 50th (ft)	~115	0	1	271	7	32
Queue Length 95th (ft)	#251	30	13	#822	40	134
Internal Link Dist (ft)	340			359		702
Turn Bay Length (ft)		150	40		115	
Base Capacity (vph)	181	354	504	875	258	1060
Starvation Cap Reductn	0	0	0	170	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.16	0.01	1.07	0.21	0.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Future Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	9	9	13	9	12	12	9	12	12
Total Lost time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frt					1.00	0.85	1.00	0.95		1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1438	1472	1433	1592		1433	1672	
Flt Permitted					0.95	1.00	0.62	1.00		0.18	1.00	
Satd. Flow (perm)					1438	1472	932	1592		274	1672	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	180	4	58	7	501	254	55	221	4
RTOR Reduction (vph)	0	0	0	0	0	48	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	184	10	7	741	0	55	225	0
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Actuated Green, G (s)					12.0	17.0	49.1	49.1		59.1	59.1	
Effective Green, g (s)					12.0	17.0	49.1	49.1		59.1	59.1	
Actuated g/C Ratio					0.13	0.18	0.52	0.52		0.62	0.62	
Clearance Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Vehicle Extension (s)					3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)					181	348	481	822		231	1040	
v/s Ratio Prot						0.00		c0.47		0.01	c0.13	
v/s Ratio Perm					0.13	0.01	0.01			0.14		
v/c Ratio					1.02	0.03	0.01	0.90		0.24	0.22	
Uniform Delay, d1					41.5	32.2	11.2	20.8		23.9	7.8	
Progression Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2					71.3	0.0	0.1	15.0		0.5	0.5	
Delay (s)					112.8	32.2	11.2	35.7		24.4	8.3	
Level of Service					F	C	B	D		C	A	
Approach Delay (s)		0.0			93.5			35.5			11.5	
Approach LOS		A			F			D			B	

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	154	651	599	30	4	142
Future Volume (vph)	154	651	599	30	4	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.993		0.871	
Flt Protected		0.990			0.998	
Satd. Flow (prot)	0	2932	2944	0	1371	0
Flt Permitted		0.990			0.998	
Satd. Flow (perm)	0	2932	2944	0	1371	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		180	394		416	
Travel Time (s)		4.1	9.0		9.5	
Confl. Peds. (#/hr)	23			23		
Peak Hour Factor	0.75	0.77	0.84	0.81	0.50	0.78
Heavy Vehicles (%)	4%	2%	2%	8%	0%	5%
Adj. Flow (vph)	205	845	713	37	8	182
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1050	750	0	190	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.25	1.25	1.25	1.19	1.19
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

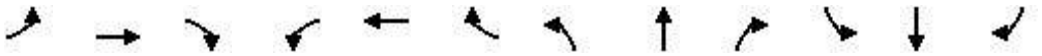
Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	154	651	599	30	4	142
Future Vol, veh/h	154	651	599	30	4	142
Conflicting Peds, #/hr	23	0	0	23	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	77	84	81	50	78
Heavy Vehicles, %	4	2	2	8	0	5
Mvmt Flow	205	845	713	37	8	182

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	773	0	-	0	1588	398
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	833	-
Critical Hdwy	4.18	-	-	-	6.8	7
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.24	-	-	-	3.5	3.35
Pot Cap-1 Maneuver	825	-	-	-	101	593
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	392	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	808	-	-	-	51	581
Mov Cap-2 Maneuver	-	-	-	-	51	-
Stage 1	-	-	-	-	220	-
Stage 2	-	-	-	-	384	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	21.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	808	-	-	-	404
HCM Lane V/C Ratio	0.254	-	-	-	0.47
HCM Control Delay (s)	11	1.8	-	-	21.6
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	1	-	-	-	2.4



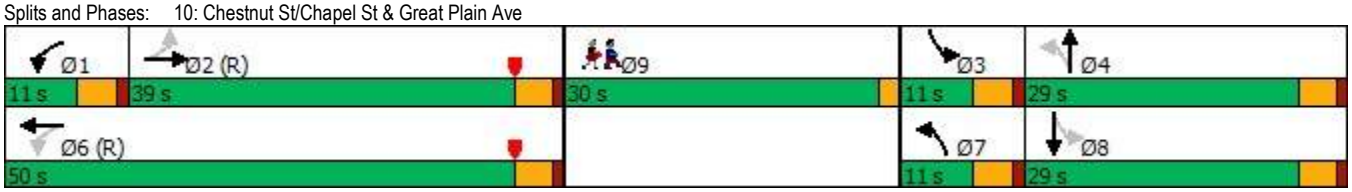
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Future Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	175		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.983			0.989			0.975			0.959	
Flt Protected		0.995			0.993		0.950			0.950		
Satd. Flow (prot)	0	2861	0	0	2876	0	1444	1527	0	1430	1484	0
Flt Permitted		0.695			0.599		0.421			0.373		
Satd. Flow (perm)	0	1999	0	0	1735	0	639	1527	0	561	1484	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			238			782			424	
Travel Time (s)		9.0			5.4			17.8			9.6	
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.66	0.76	0.76	0.75	0.83	0.75	0.81	0.88	0.89	0.50	0.91	0.57
Heavy Vehicles (%)	8%	2%	9%	3%	4%	0%	5%	6%	2%	6%	4%	13%
Adj. Flow (vph)	89	687	97	111	599	57	119	308	62	36	164	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	873	0	0	767	0	119	370	0	36	225	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.19	1.19	1.25	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	29.0		11.0	29.0	
Total Split (%)	32.5%	32.5%		9.2%	41.7%		9.2%	24.2%		9.2%	24.2%	
Maximum Green (s)	34.5	34.5		6.5	45.5		6.5	24.5		6.5	24.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	30.0
Total Split (%)	25%
Maximum Green (s)	28.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		58.4			58.4		46.3	39.7		39.4	32.2	
Actuated g/C Ratio		0.49			0.49		0.39	0.33		0.33	0.27	
v/c Ratio		0.90			0.91		0.38	0.73		0.15	0.57	
Control Delay		42.3			30.4		29.6	47.4		26.2	45.7	
Queue Delay		45.7			0.0		0.0	0.0		0.0	0.0	
Total Delay		88.1			30.4		29.6	47.4		26.2	45.7	
LOS		F			C		C	D		C	D	
Approach Delay		88.1			30.4			43.1			43.0	
Approach LOS		F			C			D			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 55.4		Intersection LOS: E	
Intersection Capacity Utilization 78.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 10: Chestnut St/Chapel St & Great Plain Ave



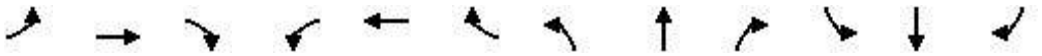
Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	873	767	119	370	36	225
v/c Ratio	0.90	0.91	0.38	0.73	0.15	0.57
Control Delay	42.3	30.4	29.6	47.4	26.2	45.7
Queue Delay	45.7	0.0	0.0	0.0	0.0	0.0
Total Delay	88.1	30.4	29.6	47.4	26.2	45.7
Queue Length 50th (ft)	309	308	56	251	16	145
Queue Length 95th (ft)	#413	#441	105	#519	24	#278
Internal Link Dist (ft)	314	158		702		344
Turn Bay Length (ft)			175		100	
Base Capacity (vph)	972	844	316	504	239	398
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	176	0	0	1	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.91	0.38	0.74	0.15	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Future Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	11	11	10	11	11
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.97		1.00	0.96	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2863			2875		1444	1527		1430	1485	
Flt Permitted		0.70			0.60		0.42	1.00		0.37	1.00	
Satd. Flow (perm)		2000			1735		639	1527		561	1485	
Peak-hour factor, PHF	0.66	0.76	0.76	0.75	0.83	0.75	0.81	0.88	0.89	0.50	0.91	0.57
Adj. Flow (vph)	89	687	97	111	599	57	119	308	62	36	164	61
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	873	0	0	767	0	119	370	0	36	225	0
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	8%	2%	9%	3%	4%	0%	5%	6%	2%	6%	4%	13%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		55.0			55.0		49.0	39.7		38.8	34.0	
Effective Green, g (s)		55.0			55.0		49.0	39.7		38.8	34.0	
Actuated g/C Ratio		0.46			0.46		0.41	0.33		0.32	0.28	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		916			795		331	505		216	420	
v/s Ratio Prot							c0.03	c0.24		0.01	0.15	
v/s Ratio Perm		0.44			c0.44		0.12			0.05		
v/c Ratio		0.95			0.96		0.36	0.73		0.17	0.54	
Uniform Delay, d1		31.3			31.6		23.6	35.5		28.7	36.3	
Progression Factor		1.00			0.47		1.00	1.00		1.00	1.00	
Incremental Delay, d2		20.3			21.3		0.7	5.4		0.4	1.3	
Delay (s)		51.6			36.2		24.3	40.9		29.0	37.6	
Level of Service		D			D		C	D		C	D	
Approach Delay (s)		51.6			36.2			36.9			36.5	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	128	8	157	105	6	8	2	135	10	1	4
Future Volume (vph)	1	128	8	157	105	6	8	2	135	10	1	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	14	12	12	13	12	12	10	12
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
Ped Bike Factor												
Frt		0.994			0.997			0.881			0.964	
Flt Protected		0.999			0.972			0.995			0.971	
Satd. Flow (prot)	0	1738	0	0	1721	0	0	1503	0	0	1494	0
Flt Permitted		0.999			0.972			0.995			0.971	
Satd. Flow (perm)	0	1738	0	0	1721	0	0	1503	0	0	1494	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		521			453			566			491	
Travel Time (s)		11.8			10.3			12.9			11.2	
Confl. Peds. (#/hr)	1		3	3		1						
Peak Hour Factor	0.25	0.71	0.88	0.70	0.66	0.63	0.44	0.50	0.80	0.56	0.25	0.50
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	14%	0%	2%	0%	0%	0%
Adj. Flow (vph)	4	180	9	224	159	10	18	4	169	18	4	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	393	0	0	191	0	0	30	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	1.14	1.10	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	128	8	157	105	6	8	2	135	10	1	4
Future Vol, veh/h	1	128	8	157	105	6	8	2	135	10	1	4
Conflicting Peds, #/hr	1	0	3	3	0	1	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	25	71	88	70	66	63	44	50	80	56	25	50
Heavy Vehicles, %	0	1	0	4	1	0	14	0	2	0	0	0
Mvmt Flow	4	180	9	224	159	10	18	4	169	18	4	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	170	0	0	192	0	0	814	814	188	892	813	165
Stage 1	-	-	-	-	-	-	196	196	-	613	613	-
Stage 2	-	-	-	-	-	-	618	618	-	279	200	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.24	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.24	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.24	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.626	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1420	-	-	1370	-	-	283	315	854	265	315	885
Stage 1	-	-	-	-	-	-	779	742	-	483	486	-
Stage 2	-	-	-	-	-	-	457	484	-	732	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1419	-	-	1366	-	-	237	256	851	180	256	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	237	256	-	180	256	-
Stage 1	-	-	-	-	-	-	774	738	-	481	398	-
Stage 2	-	-	-	-	-	-	367	396	-	582	735	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	4.7	12.7	22
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	657	1419	-	-	1366	-	-	241
HCM Lane V/C Ratio	0.291	0.003	-	-	0.164	-	-	0.124
HCM Control Delay (s)	12.7	7.5	0	-	8.2	0	-	22
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.6	-	-	0.4

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	176	148	130	65	68	53
Future Volume (vph)	176	148	130	65	68	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.963		0.941	
Flt Protected		0.979			0.973	
Satd. Flow (prot)	0	1667	1518	0	1623	0
Flt Permitted		0.979			0.973	
Satd. Flow (perm)	0	1667	1518	0	1623	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		525	1036		802	
Travel Time (s)		11.9	23.5		18.2	
Confl. Peds. (#/hr)	4			4		1
Peak Hour Factor	0.90	0.56	0.59	0.78	0.74	0.75
Heavy Vehicles (%)	1%	0%	1%	2%	2%	4%
Adj. Flow (vph)	196	264	220	83	92	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	460	303	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.25	1.25	1.05	1.05
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.8%		ICU Level of Service A	
Analysis Period (min) 15			

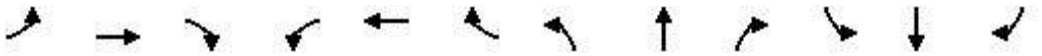
Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	176	148	130	65	68	53
Future Vol, veh/h	176	148	130	65	68	53
Conflicting Peds, #/hr	4	0	0	4	0	1
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	90	56	59	78	74	75
Heavy Vehicles, %	1	0	1	2	2	4
Mvmt Flow	196	264	220	83	92	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	307	0	-	0	922	267
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	656	-
Critical Hdwy	4.11	-	-	-	6.42	6.24
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.209	-	-	-	3.518	3.336
Pot Cap-1 Maneuver	1259	-	-	-	300	767
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	516	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1253	-	-	-	243	763
Mov Cap-2 Maneuver	-	-	-	-	243	-
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	514	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	24.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1253	-	-	-	345
HCM Lane V/C Ratio	0.156	-	-	-	0.471
HCM Control Delay (s)	8.4	0	-	-	24.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.6	-	-	-	2.4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	350	24	99	228	32	9	67	86	9	72	18
Future Volume (vph)	28	350	24	99	228	32	9	67	86	9	72	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	12	12	14	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.990			0.985			0.928			0.973	
Flt Protected		0.995			0.985			0.997			0.996	
Satd. Flow (prot)	0	1486	0	0	1729	0	0	1596	0	0	1614	0
Flt Permitted		0.995			0.985			0.997			0.996	
Satd. Flow (perm)	0	1486	0	0	1729	0	0	1596	0	0	1614	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		459			455			883			496	
Travel Time (s)		10.4			10.3			20.1			11.3	
Confl. Peds. (#/hr)	14		7	7		14	2		3	3		2
Peak Hour Factor	0.63	0.90	0.69	0.70	0.81	0.60	0.67	0.66	0.65	0.67	0.63	0.57
Heavy Vehicles (%)	0%	2%	5%	2%	3%	0%	0%	2%	3%	25%	2%	13%
Adj. Flow (vph)	44	389	35	141	281	53	13	102	132	13	114	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	468	0	0	475	0	0	247	0	0	159	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	1.14	1.30	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.0%		ICU Level of Service C	
Analysis Period (min) 15			

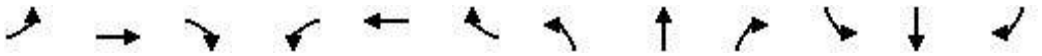
Intersection	
Int Delay, s/veh	40.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	350	24	99	228	32	9	67	86	9	72	18
Future Vol, veh/h	28	350	24	99	228	32	9	67	86	9	72	18
Conflicting Peds, #/hr	14	0	7	7	0	14	2	0	3	3	0	2
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	63	90	69	70	81	60	67	66	65	67	63	57
Heavy Vehicles, %	0	2	5	2	3	0	0	2	3	25	2	13
Mvmt Flow	44	389	35	141	281	53	13	102	132	13	114	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	348	0	0	431	0	0	1167	1132	417	1219	1123	324
Stage 1	-	-	-	-	-	-	502	502	-	604	604	-
Stage 2	-	-	-	-	-	-	665	630	-	615	519	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.52	6.23	7.35	6.52	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.35	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.35	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4.018	3.327	3.725	4.018	3.417
Pot Cap-1 Maneuver	1222	-	-	1129	-	-	172	203	634	141	206	692
Stage 1	-	-	-	-	-	-	555	542	-	448	488	-
Stage 2	-	-	-	-	-	-	453	475	-	442	533	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1204	-	-	1121	-	-	61	160	627	47	162	681
Mov Cap-2 Maneuver	-	-	-	-	-	-	61	160	-	47	162	-
Stage 1	-	-	-	-	-	-	524	512	-	420	406	-
Stage 2	-	-	-	-	-	-	262	395	-	265	504	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	2.6	122.8	140.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	232	1204	-	-	1121	-	-	154
HCM Lane V/C Ratio	1.066	0.037	-	-	0.126	-	-	1.034
HCM Control Delay (s)	122.8	8.1	0	-	8.7	0	-	140.7
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	10.6	0.1	-	-	0.4	-	-	8.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	134	28	23	187	32	39	89	21	25	51	10
Future Volume (vph)	18	134	28	23	187	32	39	89	21	25	51	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	15	12	12	13	12
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
Ped Bike Factor												
Frt		0.975			0.978			0.981			0.981	
Flt Protected		0.994			0.994			0.987			0.983	
Satd. Flow (prot)	0	1645	0	0	1514	0	0	1773	0	0	1639	0
Flt Permitted		0.994			0.994			0.987			0.983	
Satd. Flow (perm)	0	1645	0	0	1514	0	0	1773	0	0	1639	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			695			637			578	
Travel Time (s)		9.3			15.8			14.5			13.1	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.67	0.82	0.63	0.66	0.88	0.66	0.67	0.65	0.68	0.58	0.77	0.56
Heavy Vehicles (%)	0%	0%	4%	5%	1%	7%	0%	2%	11%	4%	2%	11%
Adj. Flow (vph)	27	163	44	35	213	48	58	137	31	43	66	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	234	0	0	296	0	0	226	0	0	127	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	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.01	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	9.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	134	28	23	187	32	39	89	21	25	51	10
Future Vol, veh/h	18	134	28	23	187	32	39	89	21	25	51	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	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	67	82	63	66	88	66	67	65	68	58	77	56
Heavy Vehicles, %	0	0	4	5	1	7	0	2	11	4	2	11
Mvmt Flow	27	163	44	35	213	48	58	137	31	43	66	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	261	0	0	207	0	0	588	570	187	632	568	237
Stage 1	-	-	-	-	-	-	239	239	-	307	307	-
Stage 2	-	-	-	-	-	-	349	331	-	325	261	-
Critical Hdwy	4.1	-	-	4.15	-	-	7.1	6.52	6.31	7.14	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.14	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.14	5.52	-
Follow-up Hdwy	2.2	-	-	2.245	-	-	3.5	4.018	3.399	3.536	4.018	3.399
Pot Cap-1 Maneuver	1315	-	-	1346	-	-	423	431	832	390	432	780
Stage 1	-	-	-	-	-	-	769	708	-	699	661	-
Stage 2	-	-	-	-	-	-	671	645	-	683	692	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1315	-	-	1346	-	-	348	408	831	267	409	780
Mov Cap-2 Maneuver	-	-	-	-	-	-	348	408	-	267	409	-
Stage 1	-	-	-	-	-	-	751	692	-	683	641	-
Stage 2	-	-	-	-	-	-	570	625	-	515	676	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.9	23.2	19.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	419	1315	-	-	1346	-	-	367
HCM Lane V/C Ratio	0.539	0.02	-	-	0.026	-	-	0.347
HCM Control Delay (s)	23.2	7.8	0	-	7.7	0	-	19.9
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	3.1	0.1	-	-	0.1	-	-	1.5

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	64	59	70	504	330	133
Future Volume (vph)	64	59	70	504	330	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.930				0.960	
Flt Protected	0.976			0.992		
Satd. Flow (prot)	1536	0	0	1642	1609	0
Flt Permitted	0.976			0.992		
Satd. Flow (perm)	1536	0	0	1642	1609	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	756			591	599	
Travel Time (s)	17.2			13.4	13.6	
Confl. Peds. (#/hr)	3		2			2
Confl. Bikes (#/hr)						1
Peak Hour Factor	0.85	0.74	0.63	0.83	0.63	0.60
Heavy Vehicles (%)	0%	2%	5%	3%	2%	2%
Adj. Flow (vph)	75	80	111	607	524	222
Shared Lane Traffic (%)						
Lane Group Flow (vph)	155	0	0	718	746	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 80.1%		ICU Level of Service D	
Analysis Period (min) 15			

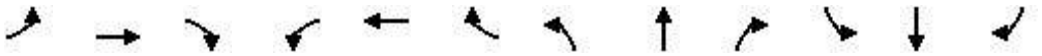
Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	64	59	70	504	330	133
Future Vol, veh/h	64	59	70	504	330	133
Conflicting Peds, #/hr	3	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	74	63	83	63	60
Heavy Vehicles, %	0	2	5	3	2	2
Mvmt Flow	75	80	111	607	524	222

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1469	637	748	0	-	0
Stage 1	637	-	-	-	-	-
Stage 2	832	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.245	-	-	-
Pot Cap-1 Maneuver	142	477	847	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	113	476	845	-	-	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	425	-	-	-	-	-
Stage 2	430	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	80	1.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	845	-	186	-	-
HCM Lane V/C Ratio	0.131	-	0.833	-	-
HCM Control Delay (s)	9.9	0	80	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.5	-	5.9	-	-



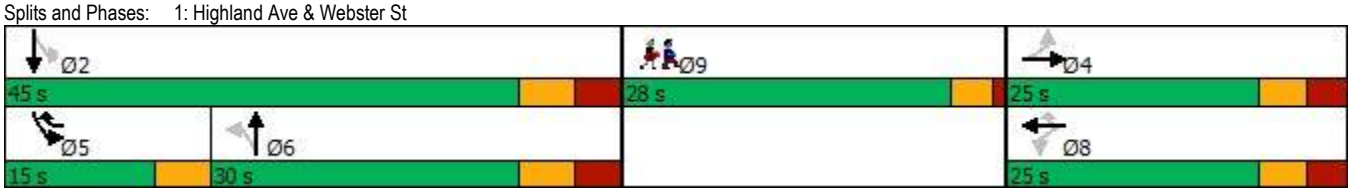
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	261	40	25	173	237	32	427	42	282	622	70
Future Volume (vph)	72	261	40	25	173	237	32	427	42	282	623	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	10	10	12	10	10	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Frt		0.983				0.850		0.987			0.984	
Flt Protected		0.990			0.994		0.950			0.950		
Satd. Flow (prot)	0	3244	0	0	1739	1507	1636	1748	0	1685	1720	0
Flt Permitted		0.738			0.876		0.169			0.145		
Satd. Flow (perm)	0	2414	0	0	1532	1462	290	1748	0	257	1720	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								5				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			193			991			1083	
Travel Time (s)		8.6			4.4			22.5			24.6	
Confl. Peds. (#/hr)	6		3	3		6	8		2	2		8
Confl. Bikes (#/hr)			3						2			1
Peak Hour Factor	0.93	0.95	0.91	0.88	0.84	0.66	0.80	0.78	0.80	0.52	0.88	0.85
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	3%	0%	0%	0%	1%	2%
Adj. Flow (vph)	77	275	44	28	206	359	40	547	53	542	708	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	396	0	0	234	359	40	600	0	542	790	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.09	1.09	1.09	1.09	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phase	4	4		8	8	5	6	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	10.0	10.0		6.0	10.0	
Minimum Split (s)	12.5	12.5		12.5	12.5	10.0	17.5	17.5		10.0	17.5	
Total Split (s)	25.0	25.0		25.0	25.0	15.0	30.0	30.0		15.0	45.0	
Total Split (%)	25.5%	25.5%		25.5%	25.5%	15.3%	30.6%	30.6%		15.3%	45.9%	
Maximum Green (s)	18.5	18.5		18.5	18.5	11.0	22.5	22.5		11.0	37.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	29%
Maximum Green (s)	24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	0.0	3.5	3.5		0.0	3.5	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		-2.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0	7.5	7.5		2.0	7.5	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		17.0			17.0	31.0	23.4	23.4		44.7	39.0	
Actuated g/C Ratio		0.20			0.20	0.36	0.27	0.27		0.53	0.46	
v/c Ratio		0.82			0.77	0.67	0.51	1.24		1.50	1.00	
Control Delay		50.6			53.1	30.6	58.6	155.9		261.3	61.9	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		50.6			53.1	30.6	58.6	155.9		261.3	61.9	
LOS		D			D	C	E	F		F	E	
Approach Delay		50.6			39.5			149.8			143.1	
Approach LOS		D			D			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 98			
Actuated Cycle Length: 85.1			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.50			
Intersection Signal Delay: 111.4		Intersection LOS: F	
Intersection Capacity Utilization 89.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Highland Ave & Webster St



Lane Group	Ø9
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	44
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	396	234	359	40	600	542	790
v/c Ratio	0.82	0.77	0.67	0.51	1.24	1.50	1.00
Control Delay	50.6	53.1	30.6	58.6	155.9	261.3	61.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.6	53.1	30.6	58.6	155.9	261.3	61.9
Queue Length 50th (ft)	127	141	183	22	~522	~464	~602
Queue Length 95th (ft)	#211	#236	185	#64	#599	#277	#801
Internal Link Dist (ft)	299	113			911		1003
Turn Bay Length (ft)				60			
Base Capacity (vph)	545	346	538	79	484	361	788
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.68	0.67	0.51	1.24	1.50	1.00

Intersection Summary

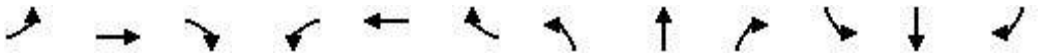
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	261	40	25	173	237	32	427	42	282	622	70
Future Volume (vph)	72	261	40	25	173	237	32	427	42	282	623	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	12	10	10	10	10	12	10	10	12
Total Lost time (s)		6.5			6.5	4.0	7.5	7.5		2.0	7.5	
Lane Util. Factor		0.95			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.99			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3240			1738	1481	1630	1747		1685	1721	
Flt Permitted		0.74			0.88	1.00	0.17	1.00		0.14	1.00	
Satd. Flow (perm)		2415			1533	1481	291	1747		257	1721	
Peak-hour factor, PHF	0.93	0.95	0.91	0.88	0.84	0.66	0.80	0.78	0.80	0.52	0.88	0.85
Adj. Flow (vph)	77	275	44	28	206	359	40	547	52	542	708	82
RTOR Reduction (vph)	0	0	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	396	0	0	234	359	40	596	0	542	790	0
Confl. Peds. (#/hr)	6		3	3		6	8		2	2		8
Confl. Bikes (#/hr)			3						2			1
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	3%	0%	0%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		17.0			17.0	28.4	23.6	23.6		39.0	39.0	
Effective Green, g (s)		17.0			17.0	28.4	23.6	23.6		41.0	39.0	
Actuated g/C Ratio		0.20			0.20	0.33	0.27	0.27		0.47	0.45	
Clearance Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		474			301	486	79	476		343	775	
v/s Ratio Prot						0.10		c0.34		c0.24	0.46	
v/s Ratio Perm		c0.16			0.15	0.15	0.14			0.50		
v/c Ratio		0.84			0.78	0.74	0.51	1.25		1.58	1.02	
Uniform Delay, d1		33.4			33.0	25.8	26.5	31.4		23.6	23.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.6			10.9	5.0	1.9	130.2		274.7	37.3	
Delay (s)		45.0			43.9	30.8	28.4	161.6		298.3	61.0	
Level of Service		D			D	C	C	F		F	E	
Approach Delay (s)		45.0			35.9			153.3			157.6	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	117.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	86.5	Sum of lost time (s)	22.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	89	83	2	24	1	128	422	12	13	611	66
Future Volume (vph)	39	89	83	2	24	1	128	422	12	13	612	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	11	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.952			0.989			0.997			0.984	
Flt Protected		0.991			0.996			0.986			0.998	
Satd. Flow (prot)	0	1635	0	0	1628	0	0	1708	0	0	1711	0
Flt Permitted		0.991			0.996			0.986			0.998	
Satd. Flow (perm)	0	1635	0	0	1628	0	0	1708	0	0	1711	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		695			444			621			443	
Travel Time (s)		15.8			10.1			14.1			10.1	
Confl. Peds. (#/hr)	8					8	11		9	9		11
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.71	0.66	0.80	0.50	0.61	0.25	0.62	0.81	0.69	0.50	0.98	0.74
Heavy Vehicles (%)	3%	0%	4%	0%	0%	0%	1%	2%	0%	0%	1%	5%
Adj. Flow (vph)	55	135	104	4	39	4	206	521	17	26	624	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	294	0	0	47	0	0	744	0	0	739	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	1.14	1.10	1.14	1.14	1.19	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	311.4

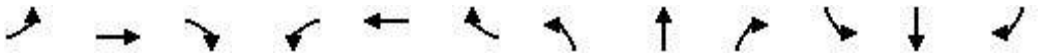
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	89	83	2	24	1	128	422	12	13	611	66
Future Vol, veh/h	39	89	83	2	24	1	128	422	12	13	612	66
Conflicting Peds, #/hr	8	0	0	0	0	8	11	0	9	9	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	66	80	50	61	25	62	81	69	50	98	74
Heavy Vehicles, %	3	0	4	0	0	0	1	2	0	0	1	5
Mvmt Flow	55	135	104	4	39	4	206	521	17	26	624	89

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1703	1691	680	1791	1727	547	724	0	0	547	0	0
Stage 1	732	732	-	951	951	-	-	-	-	-	-	-
Stage 2	971	959	-	840	776	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.5	6.24	7.1	6.5	6.2	4.11	-	-	4.1	-	-
Critical Hdwy Stg 1	6.13	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4	3.336	3.5	4	3.3	2.209	-	-	2.2	-	-
Pot Cap-1 Maneuver	72	~ 94	448	63	90	541	883	-	-	1033	-	-
Stage 1	411	430	-	315	341	-	-	-	-	-	-	-
Stage 2	303	338	-	363	410	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 23	~ 58	443	-	56	532	873	-	-	1025	-	-
Mov Cap-2 Maneuver	~ 23	~ 58	-	-	56	-	-	-	-	-	-	-
Stage 1	269	407	-	207	224	-	-	-	-	-	-	-
Stage 2	163	222	-	178	388	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 1928.1		2.9	0.3
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	873	-	-	59	-	1025	-	-
HCM Lane V/C Ratio	0.236	-	-	4.975	-	0.025	-	-
HCM Control Delay (s)	10.4	0	-	-$ 1928.1	-	8.6	0	-
HCM Lane LOS	B	A	-	F	-	A	A	-
HCM 95th %tile Q(veh)	0.9	-	-	32.7	-	0.1	-	-

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



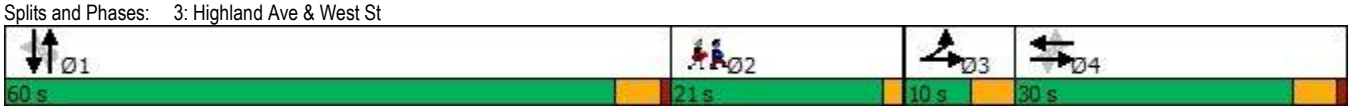
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Future Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	9	10	12	12	13	12	12	13	12
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.98	0.99			0.99			0.99	
Frt		0.971			0.971			0.985			0.955	
Flt Protected	0.950			0.950				0.997			0.996	
Satd. Flow (prot)	1433	1471	0	1462	1538	0	0	1713	0	0	1633	0
Flt Permitted	0.348			0.573				0.935			0.931	
Satd. Flow (perm)	521	1471	0	867	1538	0	0	1606	0	0	1526	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		455			303			836			621	
Travel Time (s)		10.3			6.9			19.0			14.1	
Confl. Peds. (#/hr)	7		11	11		7	14		21	21		14
Confl. Bikes (#/hr)						1			1			1
Peak Hour Factor	0.69	0.92	0.83	0.66	0.84	0.73	0.82	0.96	0.64	0.81	0.88	0.89
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	0%	1%	0%	2%	2%	1%
Adj. Flow (vph)	184	229	54	71	202	49	30	435	59	58	469	264
Shared Lane Traffic (%)												
Lane Group Flow (vph)	184	283	0	71	251	0	0	524	0	0	791	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)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.14	1.30	1.25	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Detector Phase	3	3 4		4	4		1	1		1	1	
Switch Phase												
Minimum Initial (s)	6.0			6.0	6.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.0			11.0	11.0		15.0	15.0		15.0	15.0	
Total Split (s)	10.0			30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	8.3%			24.8%	24.8%		49.6%	49.6%		49.6%	49.6%	
Maximum Green (s)	6.0			25.0	25.0		55.0	55.0		55.0	55.0	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	17%
Maximum Green (s)	19.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0			4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0			1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.0			5.0	5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			4.0	4.0		2.0	2.0		2.0	2.0	
Recall Mode	None			None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	29.1	33.2		22.0	22.0			55.9			55.9	
Actuated g/C Ratio	0.27	0.30		0.20	0.20			0.51			0.51	
v/c Ratio	0.97	0.64		0.41	0.81			0.64			1.02	
Control Delay	98.3	42.2		48.6	64.6			27.2			66.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	98.3	42.2		48.6	64.6			27.2			66.9	
LOS	F	D		D	E			C			E	
Approach Delay		64.3			61.1			27.2			66.9	
Approach LOS		E			E			C			E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 121			
Actuated Cycle Length: 109.7			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 55.5		Intersection LOS: E	
Intersection Capacity Utilization 91.1%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Highland Ave & West St



Lane Group	Ø2
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	24
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

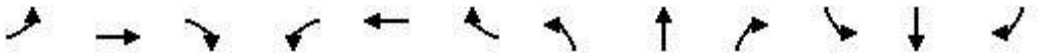
Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	184	283	71	251	524	791
v/c Ratio	0.97	0.64	0.41	0.81	0.64	1.02
Control Delay	98.3	42.2	48.6	64.6	27.2	66.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.3	42.2	48.6	64.6	27.2	66.9
Queue Length 50th (ft)	~117	192	48	188	324	~722
Queue Length 95th (ft)	#161	292	68	#278	462	#929
Internal Link Dist (ft)		375		223	756	541
Turn Bay Length (ft)			150			
Base Capacity (vph)	189	490	201	356	819	777
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.58	0.35	0.71	0.64	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

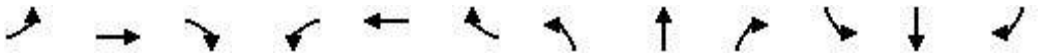
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Future Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	12	9	10	12	12	13	12	12	13	12
Total Lost time (s)	4.0	4.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		0.98	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.97			0.98			0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1430	1472		1435	1537			1713			1634	
Flt Permitted	0.35	1.00		0.57	1.00			0.94			0.93	
Satd. Flow (perm)	523	1472		865	1537			1607			1526	
Peak-hour factor, PHF	0.69	0.92	0.83	0.66	0.84	0.73	0.82	0.96	0.64	0.81	0.88	0.89
Adj. Flow (vph)	184	229	54	71	202	49	30	435	59	58	469	264
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	184	283	0	71	251	0	0	524	0	0	791	0
Confl. Peds. (#/hr)	7		11	11		7	14		21	21		14
Confl. Bikes (#/hr)						1			1			1
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	0%	1%	0%	2%	2%	1%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Actuated Green, G (s)	28.1	32.1		22.0	22.0			56.0			56.0	
Effective Green, g (s)	28.1	32.1		22.0	22.0			56.0			56.0	
Actuated g/C Ratio	0.25	0.29		0.20	0.20			0.51			0.51	
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	
Vehicle Extension (s)	2.0			4.0	4.0			2.0			2.0	
Lane Grp Cap (vph)	183	428		172	306			815			774	
v/s Ratio Prot	c0.06	0.19			0.16							
v/s Ratio Perm	c0.20			0.08				0.33			c0.52	
v/c Ratio	1.01	0.66		0.41	0.82			0.64			1.02	
Uniform Delay, d1	40.8	34.4		38.6	42.3			19.9			27.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	68.0	3.0		2.2	16.7			1.3			38.0	
Delay (s)	108.7	37.3		40.8	59.0			21.2			65.2	
Level of Service	F	D		D	E			C			E	
Approach Delay (s)		65.5			54.9			21.2			65.2	
Approach LOS		E			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	52.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	110.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Future Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	9	11	9	12	11	13	12	12	16	12
Storage Length (ft)	0		25	50		0	60		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97		0.99	0.98		0.99				1.00	
Frt		0.889			0.924						0.992	
Flt Protected		0.991		0.950			0.950					
Satd. Flow (prot)	0	1314	0	1570	1399	0	1570	1750	0	0	1899	0
Flt Permitted		0.912		0.430			0.300					
Satd. Flow (perm)	0	1207	0	704	1399	0	492	1750	0	0	1899	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		250			55							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1036			474			1055			1271	
Travel Time (s)		23.5			10.8			24.0			28.9	
Confl. Peds. (#/hr)	6		9	9		6	19		20	20		19
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.83	0.92	0.74	0.93	0.90	0.73	0.79	0.91	0.92	0.92	0.87	0.84
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	54	0	251	100	54	55	113	514	0	0	561	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	305	0	100	109	0	113	514	0	0	598	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)		11			11			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.30	1.19	1.30	1.14	1.19	1.10	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2			2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	20	100		20	100		20	100			100	
Trailing Detector (ft)	0	0		0	0		0	0			0	
Detector 1 Position(ft)	0	0		0	0		0	0			0	
Detector 1 Size(ft)	20	6		20	6		20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0			12.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0			40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%			44.4%	
Maximum Green (s)	23.0	23.0		23.0	23.0		33.0	33.0			33.0	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		Max	Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.3		14.3	14.3		34.6	34.6			34.6	
Actuated g/C Ratio		0.20		0.20	0.20		0.49	0.49			0.49	
v/c Ratio		0.69		0.70	0.33		0.47	0.59			0.64	
Control Delay		15.5		53.7	17.4		27.4	21.2			22.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		15.5		53.7	17.4		27.4	21.2			22.0	
LOS		B		D	B		C	C			C	
Approach Delay		15.5			34.7			22.3			22.0	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 69.9			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 22.5		Intersection LOS: C	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Highland Ave & Rosemary St

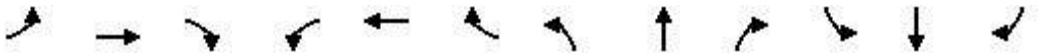
Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	27
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	305	100	109	113	514	598
v/c Ratio	0.69	0.70	0.33	0.47	0.59	0.64
Control Delay	15.5	53.7	17.4	27.4	21.2	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	53.7	17.4	27.4	21.2	22.0
Queue Length 50th (ft)	16	33	16	22	108	129
Queue Length 95th (ft)	109	#109	67	98	#423	#470
Internal Link Dist (ft)	956		394		975	1191
Turn Bay Length (ft)		50		60		
Base Capacity (vph)	580	243	519	243	867	941
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.41	0.21	0.47	0.59	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Future Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	9	11	9	12	11	13	12	12	16	12
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		0.97		1.00	0.98		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		0.99	1.00		0.99	1.00			1.00	
Frt		0.89		1.00	0.92		1.00	1.00			0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1306		1554	1398		1559	1750			1899	
Flt Permitted		0.91		0.43	1.00		0.30	1.00			1.00	
Satd. Flow (perm)		1202		703	1398		493	1750			1899	
Peak-hour factor, PHF	0.83	0.92	0.74	0.93	0.90	0.73	0.79	0.91	0.92	0.92	0.87	0.84
Adj. Flow (vph)	54	0	251	100	54	55	113	514	0	0	561	37
RTOR Reduction (vph)	0	199	0	0	44	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	106	0	100	65	0	113	514	0	0	598	0
Confl. Peds. (#/hr)	6		9	9		6	19		20	20		19
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		14.3		14.3	14.3		34.6	34.6			34.6	
Effective Green, g (s)		14.3		14.3	14.3		34.6	34.6			34.6	
Actuated g/C Ratio		0.20		0.20	0.20		0.49	0.49			0.49	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		243		142	283		241	857			930	
v/s Ratio Prot					0.05			0.29			c0.31	
v/s Ratio Perm		0.09		c0.14			0.23					
v/c Ratio		0.43		0.70	0.23		0.47	0.60			0.64	
Uniform Delay, d1		24.6		26.2	23.5		11.9	13.0			13.4	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.2		14.7	0.4		6.4	3.1			3.4	
Delay (s)		25.9		40.9	24.0		18.3	16.1			16.8	
Level of Service		C		D	C		B	B			B	
Approach Delay (s)		25.9			32.0			16.5			16.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

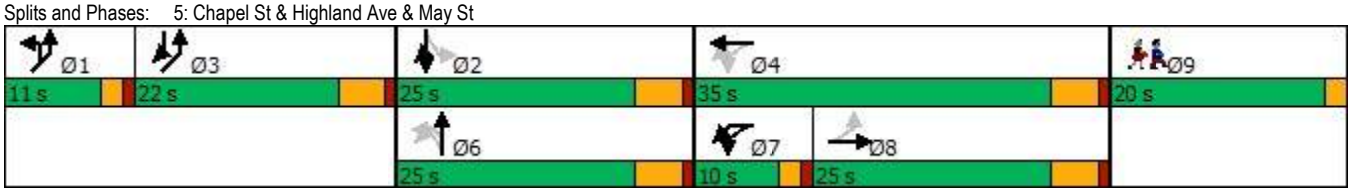
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Future Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12	10	12	12	12	16	12
Storage Length (ft)	0		0			0		0		0		0
Storage Lanes	0		0			0		0		0		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99					0.99				0.99	
Frt		0.962					0.985				0.980	
Flt Protected		0.987					0.984				0.995	
Satd. Flow (prot)	0	1630	0	0	0	0	1542	0	0	0	1862	0
Flt Permitted		0.803					0.743				0.564	
Satd. Flow (perm)	0	1323	0	0	0	0	1162	0	0	0	1054	0
Right Turn on Red				No				Yes				No
Satd. Flow (RTOR)							5					
Link Speed (mph)		30					30				30	
Link Distance (ft)		453					923				945	
Travel Time (s)		10.3					21.0				21.5	
Confl. Peds. (#/hr)	4		5	3	3	5		4	3	12		13
Confl. Bikes (#/hr)			1	1				1				2
Peak Hour Factor	0.81	0.81	0.63	0.66	0.56	0.63	0.84	0.79	1.00	0.85	0.76	0.64
Heavy Vehicles (%)	2%	1%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	75	128	44	35	18	67	154	30	4	22	197	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	282	0	0	0	0	269	0	0	0	262	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Left	Left	Right
Median Width(ft)		0					0				0	
Link Offset(ft)		0					0				0	
Crosswalk Width(ft)		16					16				16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2		1	1	2	
Detector Template	Left	Thru			Left	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100		20	20	100	
Trailing Detector (ft)	0	0			0	0	0		0	0	0	
Detector 1 Position(ft)	0	0			0	0	0		0	0	0	
Detector 1 Size(ft)	20	6			20	20	6		20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Detector Phase	8	8			7	7	4		6	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0			2.0	2.0	6.0		6.0	6.0	6.0	
Minimum Split (s)	11.0	11.0			6.0	6.0	11.0		11.0	11.0	11.0	
Total Split (s)	25.0	25.0			10.0	10.0	35.0		25.0	25.0	25.0	
Total Split (%)	22.1%	22.1%			8.8%	8.8%	31.0%		22.1%	22.1%	22.1%	
Maximum Green (s)	20.0	20.0			7.0	7.0	30.0		20.0	20.0	20.0	

Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Lane Configurations										
Traffic Volume (vph)	41	215	355	162	18	182	19	10		
Future Volume (vph)	41	215	355	162	18	182	19	10		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	10	11	12	10	11	11	11		
Storage Length (ft)	0		120			0	60			
Storage Lanes	0		1			2	1			
Taper Length (ft)	25					25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00			0.96	0.99				
Frt			0.850			0.975				
Flt Protected		0.990			0.950	0.960				
Satd. Flow (prot)	0	1571	1391	0	1516	1506	0	0		
Flt Permitted		0.693			0.950	0.960				
Satd. Flow (perm)	0	1096	1391	0	1457	1502	0	0		
Right Turn on Red				No				Yes		
Satd. Flow (RTOR)						116				
Link Speed (mph)		30				30				
Link Distance (ft)		644				580				
Travel Time (s)		14.6				13.2				
Confl. Peds. (#/hr)	13		3	12	12	4	13	5		
Confl. Bikes (#/hr)			1	1						
Peak Hour Factor	0.62	0.81	0.96	0.86	0.50	0.83	0.85	0.45		
Heavy Vehicles (%)	3%	0%	1%	1%	0%	1%	0%	11%		
Adj. Flow (vph)	66	265	370	188	36	219	22	22		
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	331	558	0	36	263	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Right	Left	Left	Right	Right		
Median Width(ft)		0				21				
Link Offset(ft)		0				0				
Crosswalk Width(ft)		16				16				
Two way Left Turn Lane										
Headway Factor	1.14	1.25	1.19	1.14	1.25	1.19	1.19	1.19		
Turning Speed (mph)	15		9	9	15	15	9	9		
Number of Detectors	1	2	1		1	1				
Detector Template	Left	Thru	Right		Left	Left				
Leading Detector (ft)	20	100	20		20	20				
Trailing Detector (ft)	0	0	0		0	0				
Detector 1 Position(ft)	0	0	0		0	0				
Detector 1 Size(ft)	20	6	20		20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)		94								
Detector 2 Size(ft)		6								
Detector 2 Type		Cl+Ex								
Detector 2 Channel										
Detector 2 Extend (s)		0.0								
Turn Type	Perm	NA	custom		Prot	Prot				
Protected Phases		2	2 3		1	1 3			3	9
Permitted Phases	2									
Detector Phase	2	2	2 3		1	1 3				
Switch Phase										
Minimum Initial (s)	6.0	6.0			1.0				4.0	5.0
Minimum Split (s)	11.0	11.0			6.0				9.0	20.0
Total Split (s)	25.0	25.0			11.0				22.0	20.0
Total Split (%)	22.1%	22.1%			9.7%				19%	18%
Maximum Green (s)	20.0	20.0			8.0				17.0	18.0

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Yellow Time (s)	4.0	4.0			2.0	2.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0				0.0	
Total Lost Time (s)		5.0					5.0				5.0	
Lead/Lag	Lag	Lag			Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None			None	None	None		Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		29.4					29.4				20.2	
Actuated g/C Ratio		0.29					0.29				0.20	
v/c Ratio		0.73					0.78				1.23	
Control Delay		46.0					51.0				174.1	
Queue Delay		0.0					0.0				0.0	
Total Delay		46.0					51.0				174.1	
LOS		D					D				F	
Approach Delay		46.0					51.0				174.1	
Approach LOS		D					D				F	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 113			
Actuated Cycle Length: 99.9			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.50			
Intersection Signal Delay: 101.3		Intersection LOS: F	
Intersection Capacity Utilization 79.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Chapel St & Highland Ave & May St



Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Yellow Time (s)	4.0	4.0			2.0				4.0	2.0
All-Red Time (s)	1.0	1.0			1.0				1.0	0.0
Lost Time Adjust (s)		0.0			0.0					
Total Lost Time (s)		5.0			3.0					
Lead/Lag					Lead				Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0
Recall Mode	Min	Min			None				None	None
Walk Time (s)										7.0
Flash Dont Walk (s)										11.0
Pedestrian Calls (#/hr)										18
Act Effct Green (s)		20.2	42.5		7.8	30.1				
Actuated g/C Ratio		0.20	0.43		0.08	0.30				
v/c Ratio		1.50	0.94		0.31	0.49				
Control Delay		277.0	56.2		54.4	20.8				
Queue Delay		0.0	0.0		0.0	0.0				
Total Delay		277.0	56.2		54.4	20.8				
LOS		F	E		D	C				
Approach Delay		138.4				24.9				
Approach LOS		F				C				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR	NEL2	NEL
Lane Group Flow (vph)	282	269	262	331	558	36	263
v/c Ratio	0.73	0.78	1.23	1.50	0.94	0.31	0.49
Control Delay	46.0	51.0	174.1	277.0	56.2	54.4	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.0	51.0	174.1	277.0	56.2	54.4	20.8
Queue Length 50th (ft)	142	136	~184	~264	292	20	65
Queue Length 95th (ft)	#263	#298	#333	#467	#667	33	152
Internal Link Dist (ft)	373	843	865	564			500
Turn Bay Length (ft)					120		
Base Capacity (vph)	388	356	213	221	592	122	529
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.76	1.23	1.50	0.94	0.30	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

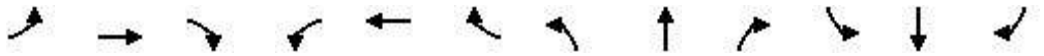
Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Future Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12	10	12	12	12	16	12
Total Lost time (s)		5.0					5.0				5.0	
Lane Util. Factor		1.00					1.00				1.00	
Frpb, ped/bikes		0.99					1.00				0.99	
Flpb, ped/bikes		1.00					1.00				1.00	
Frt		0.96					0.98				0.98	
Flt Protected		0.99					0.98				1.00	
Satd. Flow (prot)		1633					1539				1860	
Flt Permitted		0.80					0.74				0.56	
Satd. Flow (perm)		1328					1161				1055	
Peak-hour factor, PHF	0.81	0.81	0.63	0.66	0.56	0.63	0.84	0.79	1.00	0.85	0.76	0.64
Adj. Flow (vph)	75	128	44	35	18	67	154	30	4	22	197	39
RTOR Reduction (vph)	0	0	0	0	0	0	4	0	0	0	0	0
Lane Group Flow (vph)	0	282	0	0	0	0	265	0	0	0	262	0
Confl. Peds. (#/hr)	4		5	3	3	5		4	3	12		13
Confl. Bikes (#/hr)			1	1				1				2
Heavy Vehicles (%)	2%	1%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Actuated Green, G (s)		29.3					29.3				20.2	
Effective Green, g (s)		29.3					29.3				20.2	
Actuated g/C Ratio		0.29					0.29				0.20	
Clearance Time (s)		5.0					5.0				5.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		385					337				211	
v/s Ratio Prot												
v/s Ratio Perm		0.21					c0.23				0.25	
v/c Ratio		0.73					0.79				1.24	
Uniform Delay, d1		32.3					32.9				40.4	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		7.0					11.5				142.3	
Delay (s)		39.3					44.5				182.6	
Level of Service		D					D				F	
Approach Delay (s)		39.3					44.5				182.6	
Approach LOS		D					D				F	

Intersection Summary			
HCM 2000 Control Delay	103.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	100.9	Sum of lost time (s)	23.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	41	215	355	162	18	182	19	10
Future Volume (vph)	41	215	355	162	18	182	19	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	10	11	11	11
Total Lost time (s)		5.0	5.0		3.0	3.0		
Lane Util. Factor		1.00	1.00		1.00	1.00		
Frpb, ped/bikes		1.00	1.00		1.00	0.99		
Flpb, ped/bikes		1.00	1.00		1.00	1.00		
Frt		1.00	0.85		1.00	0.97		
Flt Protected		0.99	1.00		0.95	0.96		
Satd. Flow (prot)		1566	1391		1516	1507		
Flt Permitted		0.69	1.00		0.95	0.96		
Satd. Flow (perm)		1096	1391		1516	1507		
Peak-hour factor, PHF	0.62	0.81	0.96	0.86	0.50	0.83	0.85	0.45
Adj. Flow (vph)	66	265	370	188	36	219	22	22
RTOR Reduction (vph)	0	0	0	0	0	84	0	0
Lane Group Flow (vph)	0	331	558	0	36	179	0	0
Confl. Peds. (#/hr)	13		3	12	12	4	13	5
Confl. Bikes (#/hr)			1	1				
Heavy Vehicles (%)	3%	0%	1%	1%	0%	1%	0%	11%
Turn Type	Perm	NA	custom		Prot	Prot		
Protected Phases		2	2 3		1	1 3		
Permitted Phases	2							
Actuated Green, G (s)		20.2	42.4		7.8	28.0		
Effective Green, g (s)		20.2	42.4		7.8	28.0		
Actuated g/C Ratio		0.20	0.42		0.08	0.28		
Clearance Time (s)		5.0			3.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		219	584		117	418		
v/s Ratio Prot			c0.40		0.02	c0.12		
v/s Ratio Perm		c0.30						
v/c Ratio		1.51	0.96		0.31	0.43		
Uniform Delay, d1		40.4	28.3		44.0	29.9		
Progression Factor		1.00	1.00		1.00	1.00		
Incremental Delay, d2		252.3	26.3		1.5	0.7		
Delay (s)		292.6	54.6		45.5	30.6		
Level of Service		F	D		D	C		
Approach Delay (s)		143.3				32.4		
Approach LOS		F				C		

Intersection Summary



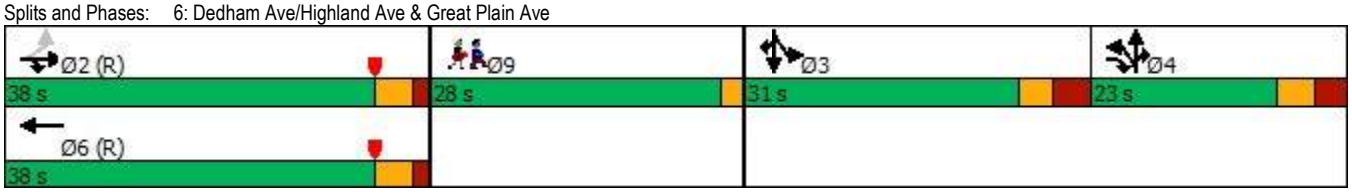
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Future Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	10	10	10	10	10	10	10	10	12
Storage Length (ft)	0		0	0		0	0		35	0		90
Storage Lanes	0		1	0		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		0.99				0.99	
Frt			0.850		0.972				0.850			0.850
Flt Protected		0.993					0.950				0.984	
Satd. Flow (prot)	0	1569	1391	0	2886	0	1486	1596	1357	0	1560	1454
Flt Permitted		0.784					0.950				0.984	
Satd. Flow (perm)	0	1235	1391	0	2886	0	1468	1596	1357	0	1545	1454
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									95			95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		238			434			312			945	
Travel Time (s)		5.4			9.9			7.1			21.5	
Confl. Peds. (#/hr)	27		39	39		27	9		14	14		9
Confl. Bikes (#/hr)			3			2			1			
Peak Hour Factor	0.63	0.82	0.93	0.25	0.85	0.87	0.86	0.77	0.80	0.74	0.84	0.84
Heavy Vehicles (%)	7%	0%	1%	0%	1%	0%	2%	0%	0%	0%	1%	0%
Adj. Flow (vph)	54	322	311	0	376	85	221	131	90	108	221	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	376	311	0	461	0	221	131	90	0	329	76
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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1		2		1	2	1	1	2	1
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20		100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20		6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Detector Phase	2	2	2 4		6		4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0			10.0		11.5	11.5	11.5	11.5	11.5	11.5
Total Split (s)	38.0	38.0			38.0		23.0	23.0	23.0	31.0	31.0	31.0
Total Split (%)	31.7%	31.7%			31.7%		19.2%	19.2%	19.2%	25.8%	25.8%	25.8%
Maximum Green (s)	33.0	33.0			33.0		16.5	16.5	16.5	24.5	24.5	24.5

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	26.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5			1.5		3.0	3.0	3.0	3.5	3.5	3.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Lead/Lag							Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Min	C-Min			C-Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		34.7	60.0		34.7		18.7	18.7	18.7		26.9	26.9
Actuated g/C Ratio		0.29	0.50		0.29		0.16	0.16	0.16		0.22	0.22
v/c Ratio		1.05	0.45		0.55		0.96	0.53	0.31		0.94	0.19
Control Delay		83.8	14.3		39.7		100.2	56.5	11.4		82.1	5.9
Queue Delay		17.3	1.8		9.7		0.0	0.0	0.0		0.0	0.0
Total Delay		101.1	16.1		49.4		100.2	56.5	11.4		82.1	5.9
LOS		F	B		D		F	E	B		F	A
Approach Delay		62.6			49.4			69.2			67.8	
Approach LOS		E			D			E			E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 62.1		Intersection LOS: E	
Intersection Capacity Utilization 77.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Dedham Ave/Highland Ave & Great Plain Ave



Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	44
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

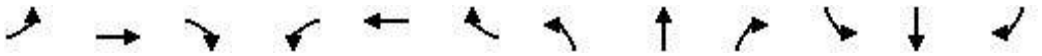
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	376	311	461	221	131	90	329	76
v/c Ratio	1.05	0.45	0.55	0.96	0.53	0.31	0.94	0.19
Control Delay	83.8	14.3	39.7	100.2	56.5	11.4	82.1	5.9
Queue Delay	17.3	1.8	9.7	0.0	0.0	0.0	0.0	0.0
Total Delay	101.1	16.1	49.4	100.2	56.5	11.4	82.1	5.9
Queue Length 50th (ft)	~315	56	162	~192	97	0	256	0
Queue Length 95th (ft)	#444	m136	204	#327	137	32	#399	22
Internal Link Dist (ft)	158		354		232		865	
Turn Bay Length (ft)						35		90
Base Capacity (vph)	357	695	835	231	249	291	350	399
Starvation Cap Reductn	21	236	0	0	0	0	0	0
Spillback Cap Reductn	0	0	338	0	0	0	0	11
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.12	0.68	0.93	0.96	0.53	0.31	0.94	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Future Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	11	10	10	10	10	10	10	10	10	12
Total Lost time (s)		5.0	5.0		5.0		6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00		1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)		1564	1391		2888		1486	1596	1357		1560	1454
Flt Permitted		0.78	1.00		1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (perm)		1235	1391		2888		1486	1596	1357		1560	1454
Peak-hour factor, PHF	0.63	0.82	0.93	0.25	0.85	0.87	0.86	0.77	0.80	0.74	0.84	0.84
Adj. Flow (vph)	54	322	311	0	376	85	221	131	90	108	221	76
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	76	0	0	59
Lane Group Flow (vph)	0	376	311	0	461	0	221	131	14	0	329	17
Confl. Peds. (#/hr)	27		39	39		27	9		14	14		9
Confl. Bikes (#/hr)			3			2			1			
Heavy Vehicles (%)	7%	0%	1%	0%	1%	0%	2%	0%	0%	0%	1%	0%
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Actuated Green, G (s)		34.4	59.6		34.4		18.7	18.7	18.7		26.9	26.9
Effective Green, g (s)		34.4	53.1		34.4		18.7	18.7	18.7		26.9	26.9
Actuated g/C Ratio		0.29	0.44		0.29		0.16	0.16	0.16		0.22	0.22
Clearance Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		2.0			2.0		2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		354	615		827		231	248	211		349	325
v/s Ratio Prot			0.22		0.16		c0.15	0.08	0.01		c0.21	0.01
v/s Ratio Perm		c0.30										
v/c Ratio		1.06	0.51		0.56		0.96	0.53	0.07		0.94	0.05
Uniform Delay, d1		42.8	24.0		36.3		50.2	46.6	43.2		45.8	36.5
Progression Factor		0.55	0.60		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		59.4	0.2		2.7		46.4	0.9	0.0		33.1	0.0
Delay (s)		82.9	14.5		39.0		96.6	47.5	43.3		78.9	36.6
Level of Service		F	B		D		F	D	D		E	D
Approach Delay (s)		52.0			39.0			71.2			71.0	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	57.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

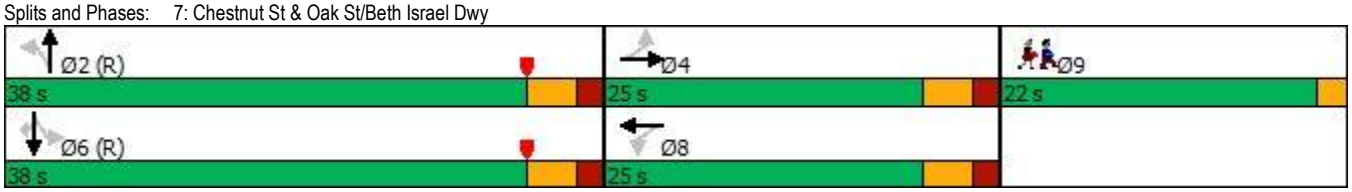
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Future Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	8	8	11	11	11	9	9	12	12	9	9
Storage Length (ft)	0		0	0		0	80		0	0		150
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.907			0.929			0.995				0.850
Flt Protected		0.985			0.982		0.950					
Satd. Flow (prot)	0	1298	0	0	1478	0	1433	1501	0	0	1509	1283
Flt Permitted		0.899			0.899		0.337				0.998	
Satd. Flow (perm)	0	1185	0	0	1353	0	508	1501	0	0	1506	1283
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								2				76
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			314			227			439	
Travel Time (s)		13.8			7.1			5.2			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	1	139	7	2	10	111	398	13	4	537	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	202	0	0	19	0	111	411	0	0	541	85
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			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.19	1.19	1.19	1.30	1.30	1.14	1.14	1.30	1.30
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	25.0	25.0		25.0	25.0		38.0	38.0		38.0	38.0	38.0
Total Split (%)	29.4%	29.4%		29.4%	29.4%		44.7%	44.7%		44.7%	44.7%	44.7%
Maximum Green (s)	20.0	20.0		20.0	20.0		33.0	33.0		33.0	33.0	33.0
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0			5.0	5.0

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	22.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		20.0			20.0		46.2	46.2			46.2	46.2
Actuated g/C Ratio		0.24			0.24		0.54	0.54			0.54	0.54
v/c Ratio		0.73			0.06		0.40	0.50			0.66	0.12
Control Delay		47.1			26.0		22.1	18.2			27.9	13.5
Queue Delay		0.0			0.0		0.0	0.0			0.6	0.0
Total Delay		47.1			26.0		22.1	18.2			28.5	13.5
LOS		D			C		C	B			C	B
Approach Delay		47.1			26.0			19.1			26.5	
Approach LOS		D			C			B			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 26.7		Intersection LOS: C	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Chestnut St & Oak St/Beth Israel Dwy



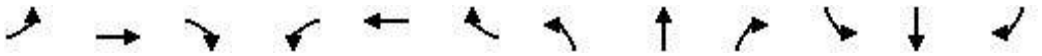
Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	202	19	111	411	541	85
v/c Ratio	0.73	0.06	0.40	0.50	0.66	0.12
Control Delay	47.1	26.0	22.1	18.2	27.9	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.6	0.0
Total Delay	47.1	26.0	22.1	18.2	28.5	13.5
Queue Length 50th (ft)	100	8	24	94	80	0
Queue Length 95th (ft)	#202	25	#112	288	m#413	m54
Internal Link Dist (ft)	526	234		147	359	
Turn Bay Length (ft)			80			150
Base Capacity (vph)	278	318	276	816	818	732
Starvation Cap Reductn	0	0	0	0	74	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.06	0.40	0.50	0.73	0.12

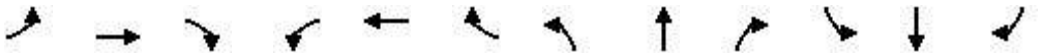
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Future Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	11	11	11	9	9	12	12	9	9
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	1.00
Frt		0.91			0.93		1.00	1.00			1.00	0.85
Flt Protected		0.98			0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1298			1478		1433	1502			1508	1282
Flt Permitted		0.90			0.90		0.34	1.00			1.00	1.00
Satd. Flow (perm)		1185			1353		509	1502			1505	1282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	1	139	7	2	10	111	398	13	4	537	85
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	36
Lane Group Flow (vph)	0	202	0	0	19	0	111	410	0	0	541	49
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		20.0			20.0		45.0	45.0			45.0	45.0
Effective Green, g (s)		20.0			20.0		45.0	45.0			45.0	45.0
Actuated g/C Ratio		0.24			0.24		0.53	0.53			0.53	0.53
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		278			318		269	795			796	678
v/s Ratio Prot								0.27				
v/s Ratio Perm		c0.17			0.01		0.22				c0.36	0.04
v/c Ratio		0.73			0.06		0.41	0.52			0.68	0.07
Uniform Delay, d1		30.0			25.2		12.0	12.9			14.7	9.8
Progression Factor		1.00			1.00		1.00	1.00			1.36	2.59
Incremental Delay, d2		15.3			0.4		4.6	2.4			3.6	0.2
Delay (s)		45.3			25.6		16.7	15.3			23.6	25.5
Level of Service		D			C		B	B			C	C
Approach Delay (s)		45.3			25.6			15.6			23.9	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



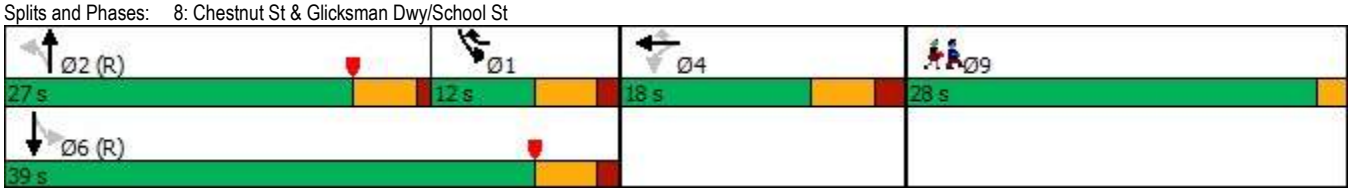
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Future Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	9	13	9	12	12	9	12	12
Storage Length (ft)	0		0	0		150	40		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			70			70			100		
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						0.850		0.942			0.999	
Flt Protected					0.954		0.950			0.950		
Satd. Flow (prot)	0	0	0	0	1439	1473	1433	1579	0	1433	1675	0
Flt Permitted					0.954		0.396			0.252		
Satd. Flow (perm)	0	0	0	0	1439	1473	597	1579	0	380	1675	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						76		36				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		162			420			439			782	
Travel Time (s)		3.7			9.5			10.0			17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	195	7	76	7	375	234	68	475	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	202	76	7	609	0	68	478	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.30	1.30	1.10	1.30	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2		1	2	
Detector Template				Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)				20	100	20	20	100		20	100	
Trailing Detector (ft)				0	0	0	0	0		0	0	
Detector 1 Position(ft)				0	0	0	0	0		0	0	
Detector 1 Size(ft)				20	6	20	20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Detector Phase				4	4	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)				6.0	6.0	6.0	2.0	2.0		6.0	10.0	
Minimum Split (s)				12.0	12.0	11.5	7.0	7.0		11.5	15.5	
Total Split (s)				18.0	18.0	12.0	27.0	27.0		12.0	39.0	
Total Split (%)				21.2%	21.2%	14.1%	31.8%	31.8%		14.1%	45.9%	
Maximum Green (s)				12.0	12.0	6.5	22.0	22.0		6.5	33.5	
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)				2.0	2.0	1.5	1.0	1.0		1.5	1.5	
Lost Time Adjust (s)					0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	33%
Maximum Green (s)	26.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag						Lag	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode				None	None	None	C-Min	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					12.0	21.9	41.4	41.4		51.5	50.3	
Actuated g/C Ratio					0.14	0.26	0.49	0.49		0.61	0.59	
v/c Ratio					1.00	0.17	0.02	0.77		0.22	0.48	
Control Delay					101.8	7.0	12.5	27.6		18.5	16.3	
Queue Delay					34.5	0.0	0.0	0.0		0.0	0.1	
Total Delay					136.2	7.0	12.5	27.6		18.5	16.3	
LOS					F	A	B	C		B	B	
Approach Delay					100.9			27.4			16.6	
Approach LOS					F			C			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 9 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 37.5		Intersection LOS: D	
Intersection Capacity Utilization 64.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Chestnut St & Glicksman Dwy/School St



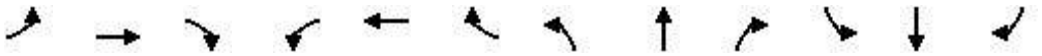
Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	202	76	7	609	68	478
v/c Ratio	1.00	0.17	0.02	0.77	0.22	0.48
Control Delay	101.8	7.0	12.5	27.6	18.5	16.3
Queue Delay	34.5	0.0	0.0	0.0	0.0	0.1
Total Delay	136.2	7.0	12.5	27.6	18.5	16.3
Queue Length 50th (ft)	109	0	1	212	9	82
Queue Length 95th (ft)	#245	30	m5	#615	49	328
Internal Link Dist (ft)	340			359		702
Turn Bay Length (ft)		150	40		115	
Base Capacity (vph)	203	403	290	787	312	991
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	31	0	0	0	0	32
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.17	0.19	0.02	0.77	0.22	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Future Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	9	9	13	9	12	12	9	12	12
Total Lost time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frt					1.00	0.85	1.00	0.94		1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1439	1472	1433	1580		1433	1675	
Flt Permitted					0.95	1.00	0.40	1.00		0.25	1.00	
Satd. Flow (perm)					1439	1472	598	1580		381	1675	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	195	7	76	7	375	234	68	475	3
RTOR Reduction (vph)	0	0	0	0	0	61	0	19	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	202	15	7	590	0	68	478	0
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Actuated Green, G (s)					12.0	17.0	39.1	39.1		49.1	49.1	
Effective Green, g (s)					12.0	17.0	39.1	39.1		49.1	49.1	
Actuated g/C Ratio					0.14	0.20	0.46	0.46		0.58	0.58	
Clearance Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Vehicle Extension (s)					3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)					203	389	275	726		281	967	
v/s Ratio Prot						0.00		c0.37		0.01	c0.29	
v/s Ratio Perm					0.14	0.01	0.01			0.13		
v/c Ratio					1.00	0.04	0.03	0.81		0.24	0.49	
Uniform Delay, d1					36.5	27.4	12.5	19.8		19.4	10.6	
Progression Factor					1.00	1.00	0.56	0.66		1.00	1.00	
Incremental Delay, d2					61.4	0.0	0.2	9.0		0.4	1.8	
Delay (s)					97.9	27.5	7.2	22.1		19.9	12.4	
Level of Service					F	C	A	C		B	B	
Approach Delay (s)		0.0			78.6			21.9			13.3	
Approach LOS		A			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	89	594	589	27	14	217
Future Volume (vph)	89	595	590	27	14	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.989		0.878	
Flt Protected		0.992			0.995	
Satd. Flow (prot)	0	2978	2972	0	1433	0
Flt Permitted		0.992			0.995	
Satd. Flow (perm)	0	2978	2972	0	1433	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		180	394		416	
Travel Time (s)		4.1	9.0		9.5	
Confl. Peds. (#/hr)	23			23	1	23
Peak Hour Factor	0.79	0.98	0.92	0.52	0.54	0.90
Heavy Vehicles (%)	1%	1%	1%	0%	8%	0%
Adj. Flow (vph)	113	607	641	52	26	241
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	720	693	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.25	1.25	1.25	1.19	1.19
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			

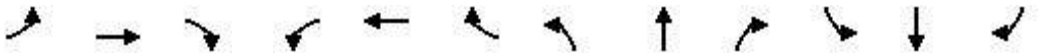
Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	594	589	27	14	217
Future Vol, veh/h	89	595	590	27	14	217
Conflicting Peds, #/hr	23	0	0	23	1	23
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	79	98	92	52	54	90
Heavy Vehicles, %	1	1	1	0	8	0
Mvmt Flow	113	607	641	52	26	241

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	716	0	-	0	1221	393
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	531	-
Critical Hdwy	4.12	-	-	-	6.96	6.9
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	2.21	-	-	-	3.58	3.3
Pot Cap-1 Maneuver	887	-	-	-	164	612
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	537	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	869	-	-	-	127	589
Mov Cap-2 Maneuver	-	-	-	-	127	-
Stage 1	-	-	-	-	349	-
Stage 2	-	-	-	-	526	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	25.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	869	-	-	-	435
HCM Lane V/C Ratio	0.13	-	-	-	0.614
HCM Control Delay (s)	9.8	0.7	-	-	25.6
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	4



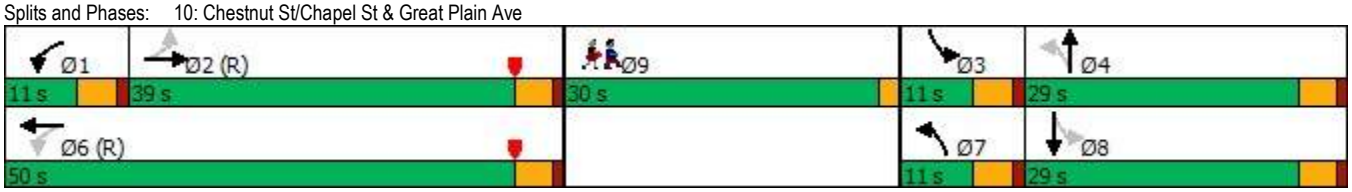
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	501	68	104	442	29	95	178	62	24	305	78
Future Volume (vph)	39	502	68	104	442	29	95	178	62	24	305	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	175		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99		0.99	0.99		0.99	0.99	
Frt		0.982			0.991			0.963			0.965	
Flt Protected		0.996			0.991		0.950			0.950		
Satd. Flow (prot)	0	2899	0	0	2936	0	1501	1568	0	1516	1562	0
Flt Permitted		0.788			0.606		0.111			0.470		
Satd. Flow (perm)	0	2291	0	0	1789	0	174	1568	0	744	1562	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			238			782			424	
Travel Time (s)		9.0			5.4			17.8			9.6	
Confl. Peds. (#/hr)	18		48	48		18	29		13	13		29
Confl. Bikes (#/hr)												4
Peak Hour Factor	0.80	0.96	0.86	0.84	0.88	0.72	0.80	0.84	0.88	0.69	0.87	0.74
Heavy Vehicles (%)	0%	1%	2%	1%	1%	4%	1%	1%	0%	0%	1%	0%
Adj. Flow (vph)	49	523	79	124	502	40	119	212	70	35	351	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	651	0	0	666	0	119	282	0	35	456	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.19	1.19	1.25	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	39.0	39.0		9.5	50.0		11.0	29.0		11.0	29.0	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	29.0		11.0	29.0	
Total Split (%)	32.5%	32.5%		9.2%	41.7%		9.2%	24.2%		9.2%	24.2%	
Maximum Green (s)	34.5	34.5		6.5	45.5		6.5	24.5		6.5	24.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	30.0
Total Split (%)	25%
Maximum Green (s)	28.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		45.5			45.5		41.9	36.2		37.0	29.6	
Actuated g/C Ratio		0.38			0.38		0.35	0.30		0.31	0.25	
v/c Ratio		0.75			0.98		0.70	0.60		0.13	1.19	
Control Delay		38.8			46.7		53.5	46.6		29.8	148.5	
Queue Delay		1.5			38.2		0.0	0.8		0.0	0.0	
Total Delay		40.3			84.9		53.5	47.3		29.8	148.5	
LOS		D			F		D	D		C	F	
Approach Delay		40.3			84.9			49.2			140.0	
Approach LOS		D			F			D			F	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 11 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.19			
Intersection Signal Delay: 77.5		Intersection LOS: E	
Intersection Capacity Utilization 82.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 10: Chestnut St/Chapel St & Great Plain Ave



Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	54
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

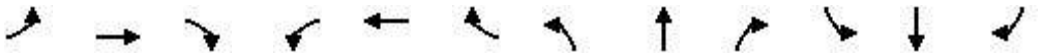
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	651	666	119	282	35	456
v/c Ratio	0.75	0.98	0.70	0.60	0.13	1.19
Control Delay	38.8	46.7	53.5	46.6	29.8	148.5
Queue Delay	1.5	38.2	0.0	0.8	0.0	0.0
Total Delay	40.3	84.9	53.5	47.3	29.8	148.5
Queue Length 50th (ft)	227	287	68	209	19	~478
Queue Length 95th (ft)	303	m#370	#127	#329	33	#652
Internal Link Dist (ft)	314	158		702		344
Turn Bay Length (ft)			175		100	
Base Capacity (vph)	868	678	169	472	279	384
Starvation Cap Reductn	0	82	0	0	0	0
Spillback Cap Reductn	87	0	0	47	22	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	1.12	0.70	0.66	0.14	1.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

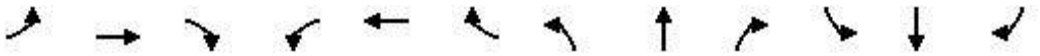
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	501	68	104	442	29	95	178	62	24	305	78
Future Volume (vph)	39	502	68	104	442	29	95	178	62	24	305	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	11	11	10	11	11
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.96		1.00	0.97	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2903			2922		1500	1570		1511	1566	
Flt Permitted		0.79			0.61		0.11	1.00		0.47	1.00	
Satd. Flow (perm)		2296			1789		176	1570		747	1566	
Peak-hour factor, PHF	0.80	0.96	0.86	0.84	0.88	0.72	0.80	0.84	0.88	0.69	0.87	0.74
Adj. Flow (vph)	49	523	79	124	502	40	119	212	70	35	351	105
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	651	0	0	666	0	119	282	0	35	456	0
Confl. Peds. (#/hr)	18		48	48		18	29		13	13		29
Confl. Bikes (#/hr)												4
Heavy Vehicles (%)	0%	1%	2%	1%	1%	4%	1%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		43.3			43.3		45.7	36.2		36.4	31.4	
Effective Green, g (s)		43.3			43.3		45.7	36.2		36.4	31.4	
Actuated g/C Ratio		0.36			0.36		0.38	0.30		0.30	0.26	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		828			645		175	473		258	409	
v/s Ratio Prot							c0.06	0.18		0.01	c0.29	
v/s Ratio Perm		0.28			c0.37		0.20			0.04		
v/c Ratio		0.79			1.03		0.68	0.60		0.14	1.11	
Uniform Delay, d1		34.2			38.4		29.2	35.7		30.0	44.3	
Progression Factor		1.00			0.49		1.00	1.00		1.00	1.00	
Incremental Delay, d2		7.4			39.6		10.4	2.0		0.2	79.5	
Delay (s)		41.6			58.5		39.6	37.7		30.2	123.8	
Level of Service		D			E		D	D		C	F	
Approach Delay (s)		41.6			58.5			38.3			117.1	
Approach LOS		D			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	62.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	109	9	209	120	7	14	4	105	7	0	2
Future Volume (vph)	3	109	9	209	120	7	14	4	105	7	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	14	12	12	13	12	12	10	12
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
Ped Bike Factor												
Frt		0.987			0.997			0.898			0.958	
Flt Protected		0.997			0.969			0.992			0.967	
Satd. Flow (prot)	0	1724	0	0	1751	0	0	1533	0	0	1479	0
Flt Permitted		0.997			0.969			0.992			0.967	
Satd. Flow (perm)	0	1724	0	0	1751	0	0	1533	0	0	1479	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		521			453			566			491	
Travel Time (s)		11.8			10.3			12.9			11.2	
Confl. Peds. (#/hr)	6		4	4		6	5		3	3		5
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.38	0.95	0.67	0.80	0.85	0.75	0.54	0.33	0.88	0.38	0.92	0.25
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	25%	1%	0%	0%	0%
Adj. Flow (vph)	8	115	13	261	141	9	26	12	119	18	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	136	0	0	411	0	0	157	0	0	26	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	1.14	1.10	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	109	9	209	120	7	14	4	105	7	0	2
Future Vol, veh/h	3	109	9	209	120	7	14	4	105	7	0	2
Conflicting Peds, #/hr	6	0	4	4	0	6	5	0	3	3	0	5
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	38	95	67	80	85	75	54	33	88	38	92	25
Heavy Vehicles, %	0	1	0	1	0	0	0	25	1	0	0	0
Mvmt Flow	8	115	13	261	141	9	26	12	119	18	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	156	0	0	132	0	0	819	820	129	880	822	157
Stage 1	-	-	-	-	-	-	142	142	-	674	674	-
Stage 2	-	-	-	-	-	-	677	678	-	206	148	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.1	6.75	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.75	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.75	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.5	4.225	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1436	-	-	1459	-	-	297	285	924	270	311	894
Stage 1	-	-	-	-	-	-	866	737	-	448	457	-
Stage 2	-	-	-	-	-	-	446	418	-	801	779	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1429	-	-	1453	-	-	247	226	917	189	246	885
Mov Cap-2 Maneuver	-	-	-	-	-	-	247	226	-	189	246	-
Stage 1	-	-	-	-	-	-	857	730	-	443	366	-
Stage 2	-	-	-	-	-	-	354	334	-	679	771	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	5.1	14.3	21.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	545	1429	-	-	1453	-	-	248
HCM Lane V/C Ratio	0.289	0.006	-	-	0.18	-	-	0.107
HCM Control Delay (s)	14.3	7.5	0	-	8	0	-	21.2
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.7	-	-	0.4

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	74	93	94	60	88	189
Future Volume (vph)	74	93	94	60	88	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.939		0.916	
Flt Protected		0.981			0.982	
Satd. Flow (prot)	0	1678	1429	0	1631	0
Flt Permitted		0.981			0.982	
Satd. Flow (perm)	0	1678	1429	0	1631	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		525	1036		802	
Travel Time (s)		11.9	23.5		18.2	
Confl. Peds. (#/hr)	12			12	2	1
Peak Hour Factor	0.84	0.66	0.79	0.61	0.65	0.84
Heavy Vehicles (%)	0%	0%	4%	6%	0%	1%
Adj. Flow (vph)	88	141	119	98	135	225
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	229	217	0	360	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.25	1.25	1.05	1.05
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	93	94	60	88	189
Future Vol, veh/h	74	93	94	60	88	189
Conflicting Peds, #/hr	12	0	0	12	2	1
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	84	66	79	61	65	84
Heavy Vehicles, %	0	0	4	6	0	1
Mvmt Flow	88	141	119	98	135	225

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	229	0	-	0	499	181
Stage 1	-	-	-	-	180	-
Stage 2	-	-	-	-	319	-
Critical Hdwy	4.1	-	-	-	6.4	6.21
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.309
Pot Cap-1 Maneuver	1351	-	-	-	535	864
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1333	-	-	-	484	852
Mov Cap-2 Maneuver	-	-	-	-	484	-
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	731	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1333	-	-	-	663
HCM Lane V/C Ratio	0.066	-	-	-	0.544
HCM Control Delay (s)	7.9	0	-	-	16.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	3.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	267	20	137	312	13	13	63	86	13	92	34
Future Volume (vph)	104	267	20	137	312	13	13	63	86	13	92	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	12	12	14	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.992			0.994			0.935			0.963	
Flt Protected		0.975			0.987			0.995			0.994	
Satd. Flow (prot)	0	1482	0	0	1789	0	0	1623	0	0	1691	0
Flt Permitted		0.975			0.987			0.995			0.994	
Satd. Flow (perm)	0	1482	0	0	1789	0	0	1623	0	0	1691	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		459			455			883			496	
Travel Time (s)		10.4			10.3			20.1			11.3	
Confl. Peds. (#/hr)	11		8	8		11	3		4	4		3
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.26	0.77	0.45	0.97	0.85	0.60	0.60	0.75	0.89	0.60	0.87	0.71
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%
Adj. Flow (vph)	400	347	44	141	367	22	22	84	97	22	106	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	791	0	0	530	0	0	203	0	0	176	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	1.14	1.30	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.2%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3

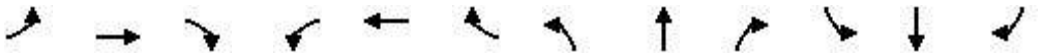
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	104	267	20	137	312	13	13	63	86	13	92	34
Future Vol, veh/h	104	267	20	137	312	13	13	63	86	13	92	34
Conflicting Peds, #/hr	11	0	8	8	0	11	3	0	4	4	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	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	26	77	45	97	85	60	60	75	89	60	87	71
Heavy Vehicles, %	0	1	0	0	0	0	0	2	1	0	0	0
Mvmt Flow	400	347	44	141	367	22	22	84	97	22	106	48

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	400	0	0	399	0	0	1917	1859	381	1935	1870	392
Stage 1	-	-	-	-	-	-	1177	1177	-	671	671	-
Stage 2	-	-	-	-	-	-	740	682	-	1264	1199	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.52	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4.018	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1170	-	-	1171	-	-	52	~ 73	668	50	~ 73	661
Stage 1	-	-	-	-	-	-	235	265	-	449	458	-
Stage 2	-	-	-	-	-	-	412	450	-	210	261	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1157	-	-	1161	-	-	-	~ 34	660	-	~ 34	652
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 34	-	-	~ 34	-
Stage 1	-	-	-	-	-	-	129	146	-	247	383	-
Stage 2	-	-	-	-	-	-	233	376	-	42	144	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.9	2.3		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1157	-	-	1161	-	-	-
HCM Lane V/C Ratio	-	0.346	-	-	0.122	-	-	-
HCM Control Delay (s)	-	9.7	0	-	8.5	0	-	-
HCM Lane LOS	-	A	A	-	A	A	-	-
HCM 95th %tile Q(veh)	-	1.6	-	-	0.4	-	-	-

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	168	65	30	150	39	34	71	23	19	43	12
Future Volume (vph)	13	168	65	30	150	39	34	71	23	19	43	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	15	12	12	13	12
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
Ped Bike Factor												
Frt		0.962			0.977			0.981			0.978	
Flt Protected		0.997			0.992			0.987			0.987	
Satd. Flow (prot)	0	1630	0	0	1519	0	0	1807	0	0	1632	0
Flt Permitted		0.997			0.992			0.987			0.987	
Satd. Flow (perm)	0	1630	0	0	1519	0	0	1807	0	0	1632	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			695			637			578	
Travel Time (s)		9.3			15.8			14.5			13.1	
Confl. Peds. (#/hr)	1		6	6		1			3	3		
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.60	0.79	0.70	0.68	0.85	0.88	0.71	0.64	0.88	0.71	0.70	0.69
Heavy Vehicles (%)	0%	1%	0%	4%	1%	3%	3%	0%	0%	12%	0%	9%
Adj. Flow (vph)	22	213	93	44	176	44	48	111	26	27	61	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	328	0	0	264	0	0	185	0	0	105	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	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.01	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	168	65	30	150	39	34	71	23	19	43	12
Future Vol, veh/h	13	168	65	30	150	39	34	71	23	19	43	12
Conflicting Peds, #/hr	1	0	6	6	0	1	0	0	3	3	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	60	79	70	68	85	88	71	64	88	71	70	69
Heavy Vehicles, %	0	1	0	4	1	3	3	0	0	12	0	9
Mvmt Flow	22	213	93	44	176	44	48	111	26	27	61	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	221	0	0	312	0	0	635	619	269	662	643	199
Stage 1	-	-	-	-	-	-	310	310	-	287	287	-
Stage 2	-	-	-	-	-	-	325	309	-	375	356	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.13	6.5	6.2	7.22	6.5	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	6.22	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	6.22	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.527	4	3.3	3.608	4	3.381
Pot Cap-1 Maneuver	1360	-	-	1237	-	-	390	407	775	362	394	825
Stage 1	-	-	-	-	-	-	698	663	-	699	678	-
Stage 2	-	-	-	-	-	-	685	663	-	626	633	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1359	-	-	1228	-	-	316	379	768	258	367	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	316	379	-	258	367	-
Stage 1	-	-	-	-	-	-	679	645	-	684	650	-
Stage 2	-	-	-	-	-	-	582	635	-	490	616	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.3	22.5	19
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	387	1359	-	-	1228	-	-	361
HCM Lane V/C Ratio	0.478	0.016	-	-	0.036	-	-	0.292
HCM Control Delay (s)	22.5	7.7	0	-	8	0	-	19
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	2.5	0	-	-	0.1	-	-	1.2

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	103	73	38	340	604	180
Future Volume (vph)	103	73	38	340	605	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.943				0.969	
Flt Protected	0.972			0.994		
Satd. Flow (prot)	1548	0	0	1700	1644	0
Flt Permitted	0.972			0.994		
Satd. Flow (perm)	1548	0	0	1700	1644	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	756			591	599	
Travel Time (s)	17.2			13.4	13.6	
Confl. Peds. (#/hr)	6		5			5
Peak Hour Factor	0.86	0.83	0.77	0.87	0.87	0.87
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%
Adj. Flow (vph)	120	88	49	391	695	207
Shared Lane Traffic (%)						
Lane Group Flow (vph)	208	0	0	440	902	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 73.1%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	13.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	103	73	38	340	604	180
Future Vol, veh/h	103	73	38	340	605	180
Conflicting Peds, #/hr	6	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	83	77	87	87	87
Heavy Vehicles, %	0	3	0	0	1	0
Mvmt Flow	120	88	49	391	695	207

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1299	804	907	0	-	0
Stage 1	804	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.2	-	-	-
Pot Cap-1 Maneuver	180	381	759	-	-	-
Stage 1	444	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	163	379	755	-	-	-
Mov Cap-2 Maneuver	163	-	-	-	-	-
Stage 1	405	-	-	-	-	-
Stage 2	614	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	99.8	1.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	755	-	215	-	-
HCM Lane V/C Ratio	0.065	-	0.966	-	-
HCM Control Delay (s)	10.1	0	99.8	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.2	-	8.4	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Future Volume (vph)	91	178	29	17	181	251	45	465	21	156	516	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	10	10	12	10	10	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00	0.98	1.00				1.00	
Frt		0.981				0.850		0.992			0.989	
Flt Protected		0.984			0.996		0.950			0.950		
Satd. Flow (prot)	0	3088	0	0	1676	1507	1636	1739	0	1685	1732	0
Flt Permitted		0.701			0.947		0.305			0.148		
Satd. Flow (perm)	0	2198	0	0	1594	1474	525	1739	0	262	1732	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								3				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			193			991			1083	
Travel Time (s)		8.6			4.4			22.5			24.6	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.80	0.93	0.66	0.91	0.73	0.53	0.67	0.66	0.52	0.47	0.81	0.91
Heavy Vehicles (%)	4%	4%	12%	10%	5%	0%	3%	1%	4%	0%	1%	2%
Adj. Flow (vph)	114	191	44	19	248	474	67	705	40	332	637	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	349	0	0	267	474	67	745	0	332	689	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.09	1.09	1.09	1.09	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phase	4	4		8	8	5	6	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	10.0	10.0		6.0	10.0	
Minimum Split (s)	12.5	12.5		12.5	12.5	10.0	17.5	17.5		10.0	17.5	
Total Split (s)	22.0	22.0		22.0	22.0	10.0	30.0	30.0		10.0	40.0	
Total Split (%)	24.4%	24.4%		24.4%	24.4%	11.1%	33.3%	33.3%		11.1%	44.4%	
Maximum Green (s)	15.5	15.5		15.5	15.5	6.0	22.5	22.5		6.0	32.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	31%
Maximum Green (s)	24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	0.0	3.5	3.5		0.0	3.5	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.8			15.8	24.5	23.0	23.0		36.8	33.2	
Actuated g/C Ratio		0.23			0.23	0.36	0.34	0.34		0.54	0.49	
v/c Ratio		0.68			0.72	0.88	0.38	1.25		1.23	0.81	
Control Delay		34.1			39.2	40.2	28.4	152.2		148.6	26.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		34.1			39.2	40.2	28.4	152.2		148.6	26.8	
LOS		C			D	D	C	F		F	C	
Approach Delay		34.1			39.9			142.0			66.4	
Approach LOS		C			D			F			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 67.6			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.25			
Intersection Signal Delay: 76.8		Intersection LOS: E	
Intersection Capacity Utilization 80.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Highland Ave & Webster St

Lane Group	Ø9
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	349	267	474	67	745	332	689
v/c Ratio	0.68	0.72	0.88	0.38	1.25	1.23	0.81
Control Delay	34.1	39.2	40.2	28.4	152.2	148.6	26.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	39.2	40.2	28.4	152.2	148.6	26.8
Queue Length 50th (ft)	61	90	135	18	~348	~97	187
Queue Length 95th (ft)	#188	#217	192	54	#556	#119	#557
Internal Link Dist (ft)	299	113			911		1003
Turn Bay Length (ft)				60			
Base Capacity (vph)	515	373	537	178	594	271	851
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.72	0.88	0.38	1.25	1.23	0.81

Intersection Summary

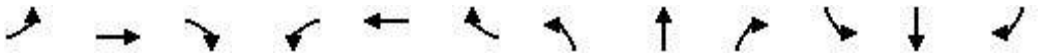
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Future Volume (vph)	91	178	29	17	181	251	45	465	21	156	516	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	12	10	10	10	10	12	10	10	12
Total Lost time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Lane Util. Factor		0.95			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.98			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3087			1677	1484	1634	1739		1685	1732	
Flt Permitted		0.70			0.95	1.00	0.31	1.00		0.15	1.00	
Satd. Flow (perm)		2198			1594	1484	525	1739		262	1732	
Peak-hour factor, PHF	0.80	0.93	0.66	0.91	0.73	0.53	0.67	0.66	0.52	0.47	0.81	0.91
Adj. Flow (vph)	114	191	44	19	248	474	67	705	40	332	637	52
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	349	0	0	267	474	67	743	0	332	689	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	4%	12%	10%	5%	0%	3%	1%	4%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		15.8			15.8	21.9	23.1	23.1		33.2	33.2	
Effective Green, g (s)		15.8			15.8	21.9	23.1	23.1		33.2	33.2	
Actuated g/C Ratio		0.22			0.22	0.31	0.33	0.33		0.47	0.47	
Clearance Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		491			356	460	171	568		246	814	
v/s Ratio Prot						c0.09		0.43		c0.12	0.40	
v/s Ratio Perm		0.16			0.17	0.23	0.13			c0.52		
v/c Ratio		0.71			0.75	1.03	0.39	1.31		1.35	0.85	
Uniform Delay, d1		25.3			25.6	24.3	18.3	23.7		16.6	16.5	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.0			7.7	50.0	0.5	151.0		181.8	7.8	
Delay (s)		29.3			33.2	74.3	18.9	174.7		198.4	24.3	
Level of Service		C			C	E	B	F		F	C	
Approach Delay (s)		29.3			59.5			161.9			80.9	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	91.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	22.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	73	72	4	54	18	117	426	14	10	477	65
Future Volume (vph)	40	73	82	4	54	18	119	451	14	10	484	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	11	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.948			0.950			0.995			0.982	
Flt Protected		0.989			0.997			0.989			0.999	
Satd. Flow (prot)	0	1589	0	0	1531	0	0	1658	0	0	1670	0
Flt Permitted		0.989			0.997			0.989			0.999	
Satd. Flow (perm)	0	1589	0	0	1531	0	0	1658	0	0	1670	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		695			444			621			443	
Travel Time (s)		15.8			10.1			14.1			10.1	
Confl. Peds. (#/hr)	1								1			
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.60	0.65	0.73	0.50	0.80	0.40	0.69	0.80	0.46	0.75	0.90	0.81
Heavy Vehicles (%)	0%	5%	6%	0%	4%	0%	4%	5%	8%	0%	4%	3%
Adj. Flow (vph)	67	112	112	8	68	45	172	564	30	13	538	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	291	0	0	121	0	0	766	0	0	636	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	1.14	1.10	1.14	1.14	1.19	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 93.9%		ICU Level of Service F	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	350.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	73	72	4	54	18	117	426	14	10	477	65
Future Vol, veh/h	40	73	82	4	54	18	119	451	14	10	484	69
Conflicting Peds, #/hr	1	0	0	0	0	0	0	0	1	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	65	73	50	80	40	69	80	46	75	90	81
Heavy Vehicles, %	0	5	6	0	4	0	4	5	8	0	4	3
Mvmt Flow	67	112	112	8	68	45	172	564	30	13	538	85

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1588	1546	581	1643	1573	581	623	0	0	595	0	0
Stage 1	607	607	-	924	924	-	-	-	-	-	-	-
Stage 2	981	939	-	719	649	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.55	6.26	7.1	6.54	6.2	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.55	-	6.1	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.55	-	6.1	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.045	3.354	3.5	4.036	3.3	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	88	113	506	81	109	517	948	-	-	991	-	-
Stage 1	487	482	-	326	346	-	-	-	-	-	-	-
Stage 2	303	339	-	423	462	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 17	~ 81	506	-	78	516	948	-	-	990	-	-
Mov Cap-2 Maneuver	~ 17	~ 81	-	-	78	-	-	-	-	-	-	-
Stage 1	355	472	-	237	252	-	-	-	-	-	-	-
Stage 2	147	246	-	246	453	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 2176.1		2.2	0.2
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	948	-	-	53	-	990	-	-
HCM Lane V/C Ratio	0.182	-	-	5.496	-	0.013	-	-
HCM Control Delay (s)	9.6	0	-	-$ 2176.1	-	8.7	0	-
HCM Lane LOS	A	A	-	F	-	A	A	-
HCM 95th %tile Q(veh)	0.7	-	-	33.1	-	0	-	-

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

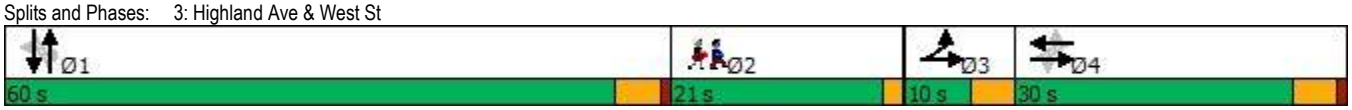
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Future Volume (vph)	186	224	31	19	141	41	20	405	32	17	345	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	9	10	12	12	13	12	12	13	12
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.99	0.99			0.99			0.99	
Frt		0.974			0.968			0.990			0.947	
Flt Protected	0.950			0.950				0.998			0.998	
Satd. Flow (prot)	1462	1479	0	1037	1468	0	0	1659	0	0	1577	0
Flt Permitted	0.388			0.537				0.946			0.964	
Satd. Flow (perm)	596	1479	0	581	1468	0	0	1573	0	0	1523	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		455			303			836			621	
Travel Time (s)		10.3			6.9			19.0			14.1	
Confl. Peds. (#/hr)	2		6	6		2	5		46	46		5
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.89	0.90	0.61	0.53	0.78	0.82	0.64	0.74	0.72	0.63	0.87	0.69
Heavy Vehicles (%)	0%	1%	0%	41%	6%	0%	6%	5%	0%	0%	5%	5%
Adj. Flow (vph)	209	249	51	36	181	50	31	547	44	27	397	275
Shared Lane Traffic (%)												
Lane Group Flow (vph)	209	300	0	36	231	0	0	622	0	0	699	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)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.14	1.30	1.25	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Detector Phase	3	3 4		4	4		1	1		1	1	
Switch Phase												
Minimum Initial (s)	6.0			6.0	6.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.0			11.0	11.0		15.0	15.0		15.0	15.0	
Total Split (s)	10.0			30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	8.3%			24.8%	24.8%		49.6%	49.6%		49.6%	49.6%	
Maximum Green (s)	6.0			25.0	25.0		55.0	55.0		55.0	55.0	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	17%
Maximum Green (s)	19.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0			4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0			1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.0			5.0	5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			4.0	4.0		2.0	2.0		2.0	2.0	
Recall Mode	None			None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	28.8	32.8		21.6	21.6			55.7			55.7	
Actuated g/C Ratio	0.26	0.30		0.20	0.20			0.51			0.51	
v/c Ratio	1.02	0.67		0.31	0.79			0.77			0.90	
Control Delay	107.0	43.8		48.4	63.6			33.2			43.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	107.0	43.8		48.4	63.6			33.2			43.9	
LOS	F	D		D	E			C			D	
Approach Delay		69.7			61.6			33.2			43.9	
Approach LOS		E			E			C			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 121			
Actuated Cycle Length: 109.1			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 49.3		Intersection LOS: D	
Intersection Capacity Utilization 72.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Highland Ave & West St



Lane Group	Ø2
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	29
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	209	300	36	231	622	699
v/c Ratio	1.02	0.67	0.31	0.79	0.77	0.90
Control Delay	107.0	43.8	48.4	63.6	33.2	43.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	107.0	43.8	48.4	63.6	33.2	43.9
Queue Length 50th (ft)	~142	207	24	171	429	~549
Queue Length 95th (ft)	#309	311	33	222	434	#761
Internal Link Dist (ft)		375		223	756	541
Turn Bay Length (ft)			150			
Base Capacity (vph)	205	497	136	343	808	782
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.60	0.26	0.67	0.77	0.89

Intersection Summary

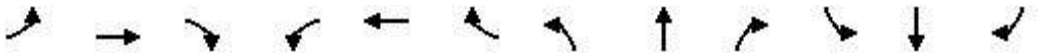
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Future Volume (vph)	186	224	31	19	141	41	20	405	32	17	345	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	12	9	10	12	12	13	12	12	13	12
Total Lost time (s)	4.0	4.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.97			0.99			0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1461	1480		1027	1467			1660			1577	
Flt Permitted	0.39	1.00		0.54	1.00			0.95			0.96	
Satd. Flow (perm)	596	1480		580	1467			1575			1523	
Peak-hour factor, PHF	0.89	0.90	0.61	0.53	0.78	0.82	0.64	0.74	0.72	0.63	0.87	0.69
Adj. Flow (vph)	209	249	51	36	181	50	31	547	44	27	397	275
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	209	300	0	36	231	0	0	622	0	0	699	0
Confl. Peds. (#/hr)	2		6	6		2	5		46	46		5
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	1%	0%	41%	6%	0%	6%	5%	0%	0%	5%	5%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Actuated Green, G (s)	27.7	31.7		21.6	21.6			55.7			55.7	
Effective Green, g (s)	27.7	31.7		21.6	21.6			55.7			55.7	
Actuated g/C Ratio	0.25	0.29		0.20	0.20			0.51			0.51	
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	
Vehicle Extension (s)	2.0			4.0	4.0			2.0			2.0	
Lane Grp Cap (vph)	198	427		114	288			799			773	
v/s Ratio Prot	c0.06	0.20			0.16							
v/s Ratio Perm	c0.21			0.06				0.40			c0.46	
v/c Ratio	1.06	0.70		0.32	0.80			0.78			0.90	
Uniform Delay, d1	40.7	34.8		37.7	42.0			22.0			24.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	79.4	4.2		2.2	15.5			4.4			13.7	
Delay (s)	120.1	39.0		39.9	57.5			26.4			38.3	
Level of Service	F	D		D	E			C			D	
Approach Delay (s)		72.3			55.2			26.4			38.3	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	45.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	109.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Future Volume (vph)	21	0	180	54	59	20	114	459	0	0	372	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	9	11	9	12	11	13	12	12	16	12
Storage Length (ft)	0		25	50		0	60		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.90		0.95	0.99		0.99				1.00	
Frt		0.879			0.965						0.989	
Flt Protected		0.995		0.950			0.950					
Satd. Flow (prot)	0	1205	0	1570	1440	0	1540	1683	0	0	1832	0
Flt Permitted		0.945		0.398			0.354					
Satd. Flow (perm)	0	1143	0	627	1440	0	570	1683	0	0	1832	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		265			17							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1036			474			1055			1271	
Travel Time (s)		23.5			10.8			24.0			28.9	
Confl. Peds. (#/hr)	8		46	46		8	12		17	17		12
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.68	0.92	0.68	0.60	0.59	0.64	0.75	0.83	0.92	0.92	0.79	0.72
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%	2%	5%	0%	0%	4%	8%
Adj. Flow (vph)	31	0	265	90	100	31	152	553	0	0	471	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	296	0	90	131	0	152	553	0	0	513	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)		11			11			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.30	1.19	1.30	1.14	1.19	1.10	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2			2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	20	100		20	100		20	100			100	
Trailing Detector (ft)	0	0		0	0		0	0			0	
Detector 1 Position(ft)	0	0		0	0		0	0			0	
Detector 1 Size(ft)	20	6		20	6		20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0			12.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0			40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%			44.4%	
Maximum Green (s)	23.0	23.0		23.0	23.0		33.0	33.0			33.0	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		Max	Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.4		14.4	14.4		34.7	34.7			34.7	
Actuated g/C Ratio		0.19		0.19	0.19		0.47	0.47			0.47	
v/c Ratio		0.68		0.74	0.45		0.57	0.70			0.60	
Control Delay		14.4		64.6	29.4		32.5	27.1			23.1	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		14.4		64.6	29.4		32.5	27.1			23.1	
LOS		B		E	C		C	C			C	
Approach Delay		14.4			43.7			28.3			23.1	
Approach LOS		B			D			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 74			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 26.3		Intersection LOS: C	
Intersection Capacity Utilization 70.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Highland Ave & Rosemary St

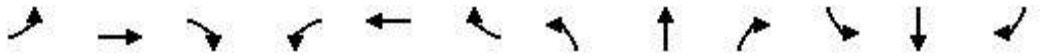
Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	41
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	296	90	131	152	553	513
v/c Ratio	0.68	0.74	0.45	0.57	0.70	0.60
Control Delay	14.4	64.6	29.4	32.5	27.1	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	64.6	29.4	32.5	27.1	23.1
Queue Length 50th (ft)	14	45	52	63	250	216
Queue Length 95th (ft)	93	58	61	#119	#422	310
Internal Link Dist (ft)	956		394		975	1191
Turn Bay Length (ft)		50		60		
Base Capacity (vph)	551	204	481	267	788	858
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.44	0.27	0.57	0.70	0.60

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Future Volume (vph)	21	0	180	54	59	20	114	459	0	0	372	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	9	11	9	12	11	13	12	12	16	12
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		0.88		1.00	0.99		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		0.94	1.00		0.99	1.00			1.00	
Frt		0.88		1.00	0.96		1.00	1.00			0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1169		1484	1437		1531	1683			1832	
Flt Permitted		0.94		0.40	1.00		0.35	1.00			1.00	
Satd. Flow (perm)		1110		621	1437		571	1683			1832	
Peak-hour factor, PHF	0.68	0.92	0.68	0.60	0.59	0.64	0.75	0.83	0.92	0.92	0.79	0.72
Adj. Flow (vph)	31	0	265	90	100	31	152	553	0	0	471	42
RTOR Reduction (vph)	0	214	0	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	82	0	90	117	0	152	553	0	0	513	0
Confl. Peds. (#/hr)	8		46	46		8	12		17	17		12
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%	2%	5%	0%	0%	4%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		14.4		14.4	14.4		34.7	34.7			34.7	
Effective Green, g (s)		14.4		14.4	14.4		34.7	34.7			34.7	
Actuated g/C Ratio		0.19		0.19	0.19		0.47	0.47			0.47	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		215		120	278		266	786			855	
v/s Ratio Prot					0.08			c0.33			0.28	
v/s Ratio Perm		0.07		c0.14			0.27					
v/c Ratio		0.38		0.75	0.42		0.57	0.70			0.60	
Uniform Delay, d1		26.1		28.3	26.3		14.4	15.7			14.7	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.1		22.8	1.0		8.6	5.2			3.1	
Delay (s)		27.2		51.1	27.3		23.0	20.9			17.8	
Level of Service		C		D	C		C	C			B	
Approach Delay (s)		27.2			37.0			21.4			17.8	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	74.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

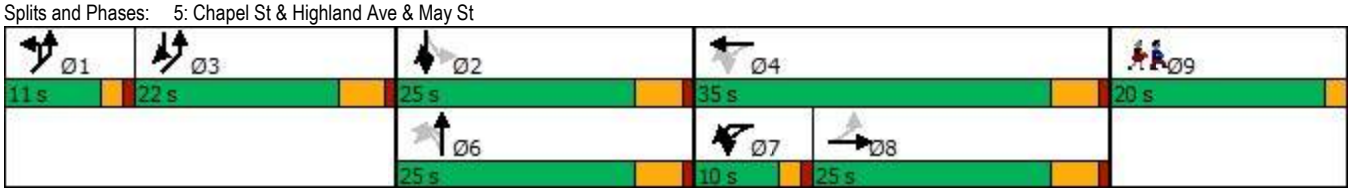
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Future Volume (vph)	86	135	36	13	31	39	165	53	2	10	174	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12	10	12	12	12	16	12
Storage Length (ft)	0		0			0		0		0		0
Storage Lanes	0		0			0		0		0		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					0.99				1.00	
Frt		0.978					0.974				0.984	
Flt Protected		0.985					0.987				0.997	
Satd. Flow (prot)	0	1666	0	0	0	0	1492	0	0	0	1823	0
Flt Permitted		0.633					0.708				0.969	
Satd. Flow (perm)	0	1069	0	0	0	0	1070	0	0	0	1771	0
Right Turn on Red				No				Yes				No
Satd. Flow (RTOR)							10					
Link Speed (mph)		30					30				30	
Link Distance (ft)		453					923				945	
Travel Time (s)		10.3					21.0				21.5	
Confl. Peds. (#/hr)	7							7		3		2
Peak Hour Factor	0.72	0.62	0.92	0.50	0.64	0.55	0.65	0.60	0.50	0.56	0.64	0.50
Heavy Vehicles (%)	0%	3%	0%	8%	0%	0%	4%	0%	0%	0%	4%	6%
Adj. Flow (vph)	119	218	39	26	48	71	254	88	4	18	272	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	402	0	0	0	0	461	0	0	0	334	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Left	Left	Right
Median Width(ft)		0					0				0	
Link Offset(ft)		0					0				0	
Crosswalk Width(ft)		16					16				16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2		1	1	2	
Detector Template	Left	Thru			Left	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100		20	20	100	
Trailing Detector (ft)	0	0			0	0	0		0	0	0	
Detector 1 Position(ft)	0	0			0	0	0		0	0	0	
Detector 1 Size(ft)	20	6			20	20	6		20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Detector Phase	8	8			7	7	4		6	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0			2.0	2.0	6.0		6.0	6.0	6.0	
Minimum Split (s)	11.0	11.0			6.0	6.0	11.0		11.0	11.0	11.0	
Total Split (s)	25.0	25.0			10.0	10.0	35.0		25.0	25.0	25.0	
Total Split (%)	22.1%	22.1%			8.8%	8.8%	31.0%		22.1%	22.1%	22.1%	
Maximum Green (s)	20.0	20.0			7.0	7.0	30.0		20.0	20.0	20.0	
Yellow Time (s)	4.0	4.0			2.0	2.0	4.0		4.0	4.0	4.0	

Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Lane Configurations										
Traffic Volume (vph)	15	129	189	89	11	268	39	9		
Future Volume (vph)	15	133	205	89	11	279	39	9		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	10	11	12	10	11	11	11		
Storage Length (ft)	0		120			0	60			
Storage Lanes	0		1			2	1			
Taper Length (ft)	25					25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00				0.99				
Frt			0.850			0.971				
Flt Protected		0.994			0.950	0.961				
Satd. Flow (prot)	0	1534	1351	0	1516	1447	0	0		
Flt Permitted		0.847			0.950	0.961				
Satd. Flow (perm)	0	1307	1351	0	1516	1436	0	0		
Right Turn on Red				No				Yes		
Satd. Flow (RTOR)						116				
Link Speed (mph)		30				30				
Link Distance (ft)		644				580				
Travel Time (s)		14.6				13.2				
Confl. Peds. (#/hr)	2			3		7	2			
Peak Hour Factor	0.70	0.79	0.91	0.81	0.63	0.91	0.63	0.67		
Heavy Vehicles (%)	7%	3%	6%	0%	0%	7%	3%	0%		
Adj. Flow (vph)	21	168	225	110	17	307	62	13		
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	189	335	0	17	382	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Right	Left	Left	Right	Right		
Median Width(ft)		0				21				
Link Offset(ft)		0				0				
Crosswalk Width(ft)		16				16				
Two way Left Turn Lane										
Headway Factor	1.14	1.25	1.19	1.14	1.25	1.19	1.19	1.19		
Turning Speed (mph)	15		9	9	15	15	9	9		
Number of Detectors	1	2	1		1	1				
Detector Template	Left	Thru	Right		Left	Left				
Leading Detector (ft)	20	100	20		20	20				
Trailing Detector (ft)	0	0	0		0	0				
Detector 1 Position(ft)	0	0	0		0	0				
Detector 1 Size(ft)	20	6	20		20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)		94								
Detector 2 Size(ft)		6								
Detector 2 Type		Cl+Ex								
Detector 2 Channel										
Detector 2 Extend (s)		0.0								
Turn Type	Perm	NA	custom		Prot	Prot				
Protected Phases		2	2 3		1	1 3			3	9
Permitted Phases	2									
Detector Phase	2	2	2 3		1	1 3				
Switch Phase										
Minimum Initial (s)	6.0	6.0			1.0				4.0	5.0
Minimum Split (s)	11.0	11.0			6.0				9.0	20.0
Total Split (s)	25.0	25.0			11.0				22.0	20.0
Total Split (%)	22.1%	22.1%			9.7%				19%	18%
Maximum Green (s)	20.0	20.0			8.0				17.0	18.0
Yellow Time (s)	4.0	4.0			2.0				4.0	2.0

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0				0.0	
Total Lost Time (s)		5.0					5.0				5.0	
Lead/Lag	Lag	Lag			Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None			None	None	None		Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		30.2					30.2				20.1	
Actuated g/C Ratio		0.31					0.31				0.21	
v/c Ratio		1.20					1.35				0.91	
Control Delay		148.9					205.9				67.6	
Queue Delay		0.0					0.0				0.0	
Total Delay		148.9					205.9				67.6	
LOS		F					F				E	
Approach Delay		148.9					205.9				67.6	
Approach LOS		F					F				E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 113			
Actuated Cycle Length: 96.5			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.35			
Intersection Signal Delay: 98.4		Intersection LOS: F	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Chapel St & Highland Ave & May St



Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
All-Red Time (s)	1.0	1.0			1.0				1.0	0.0
Lost Time Adjust (s)		0.0			0.0					
Total Lost Time (s)		5.0			3.0					
Lead/Lag					Lead				Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0
Recall Mode	Min	Min			None				None	None
Walk Time (s)										7.0
Flash Dont Walk (s)										11.0
Pedestrian Calls (#/hr)										12
Act Effct Green (s)		20.1	41.7		8.1	29.7				
Actuated g/C Ratio		0.21	0.43		0.08	0.31				
v/c Ratio		0.69	0.57		0.13	0.73				
Control Delay		51.7	26.9		46.9	30.7				
Queue Delay		0.0	0.0		0.0	0.0				
Total Delay		51.7	26.9		46.9	30.7				
LOS		D	C		D	C				
Approach Delay		35.9				31.4				
Approach LOS		D				C				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR	NEL2	NEL
Lane Group Flow (vph)	402	461	334	189	335	17	382
v/c Ratio	1.20	1.35	0.91	0.69	0.57	0.13	0.73
Control Delay	148.9	205.9	67.6	51.7	26.9	46.9	30.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	148.9	205.9	67.6	51.7	26.9	46.9	30.7
Queue Length 50th (ft)	~284	~351	192	103	139	9	137
Queue Length 95th (ft)	#338	#427	#252	#203	310	25	#347
Internal Link Dist (ft)	373	843	865	564			500
Turn Bay Length (ft)					120		
Base Capacity (vph)	334	341	369	272	577	126	532
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.20	1.35	0.91	0.69	0.58	0.13	0.72

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

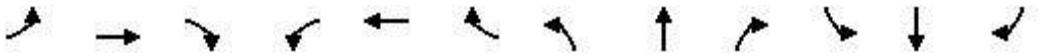
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Future Volume (vph)	86	135	36	13	31	39	165	53	2	10	174	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12	10	12	12	12	16	12
Total Lost time (s)		5.0					5.0				5.0	
Lane Util. Factor		1.00					1.00				1.00	
Frpb, ped/bikes		1.00					0.99				1.00	
Flpb, ped/bikes		1.00					1.00				1.00	
Frt		0.98					0.97				0.98	
Flt Protected		0.99					0.99				1.00	
Satd. Flow (prot)		1665					1493				1822	
Flt Permitted		0.63					0.71				0.97	
Satd. Flow (perm)		1071					1071				1772	
Peak-hour factor, PHF	0.72	0.62	0.92	0.50	0.64	0.55	0.65	0.60	0.50	0.56	0.64	0.50
Adj. Flow (vph)	119	218	39	26	48	71	254	88	4	18	272	40
RTOR Reduction (vph)	0	0	0	0	0	0	7	0	0	0	0	0
Lane Group Flow (vph)	0	402	0	0	0	0	454	0	0	0	334	0
Confl. Peds. (#/hr)	7							7		3		2
Heavy Vehicles (%)	0%	3%	0%	8%	0%	0%	4%	0%	0%	0%	4%	6%
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Actuated Green, G (s)		30.2					30.2				20.1	
Effective Green, g (s)		30.2					30.2				20.1	
Actuated g/C Ratio		0.31					0.31				0.20	
Clearance Time (s)		5.0					5.0				5.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		329					329				363	
v/s Ratio Prot												
v/s Ratio Perm		0.38					c0.42				c0.19	
v/c Ratio		1.22					1.38				0.92	
Uniform Delay, d1		33.9					33.9				38.2	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		124.1					189.1				28.0	
Delay (s)		158.0					223.0				66.2	
Level of Service		F					F				E	
Approach Delay (s)		158.0					223.0				66.2	
Approach LOS		F					F				E	

Intersection Summary			
HCM 2000 Control Delay	103.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	98.1	Sum of lost time (s)	23.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	15	129	189	89	11	268	39	9
Future Volume (vph)	15	133	205	89	11	279	39	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	10	11	11	11
Total Lost time (s)		5.0	5.0		3.0	3.0		
Lane Util. Factor		1.00	1.00		1.00	1.00		
Frpb, ped/bikes		1.00	1.00		1.00	1.00		
Flpb, ped/bikes		1.00	1.00		1.00	1.00		
Frt		1.00	0.85		1.00	0.97		
Flt Protected		0.99	1.00		0.95	0.96		
Satd. Flow (prot)		1534	1351		1516	1447		
Flt Permitted		0.85	1.00		0.95	0.96		
Satd. Flow (perm)		1306	1351		1516	1447		
Peak-hour factor, PHF	0.70	0.79	0.91	0.81	0.63	0.91	0.63	0.67
Adj. Flow (vph)	21	168	225	110	17	307	62	13
RTOR Reduction (vph)	0	0	0	0	0	83	0	0
Lane Group Flow (vph)	0	189	335	0	17	299	0	0
Confl. Peds. (#/hr)	2			3		7	2	
Heavy Vehicles (%)	7%	3%	6%	0%	0%	7%	3%	0%
Turn Type	Perm	NA	custom		Prot	Prot		
Protected Phases		2	2 3		1	1 3		
Permitted Phases	2							
Actuated Green, G (s)		20.1	41.7		8.1	27.7		
Effective Green, g (s)		20.1	41.7		8.1	27.7		
Actuated g/C Ratio		0.20	0.43		0.08	0.28		
Clearance Time (s)		5.0			3.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		267	574		125	408		
v/s Ratio Prot			0.25		0.01	c0.21		
v/s Ratio Perm		0.14						
v/c Ratio		0.71	0.58		0.14	0.73		
Uniform Delay, d1		36.3	21.6		41.8	31.8		
Progression Factor		1.00	1.00		1.00	1.00		
Incremental Delay, d2		8.3	1.5		0.5	6.7		
Delay (s)		44.6	23.1		42.3	38.5		
Level of Service		D	C		D	D		
Approach Delay (s)		30.8				38.7		
Approach LOS		C				D		

Intersection Summary



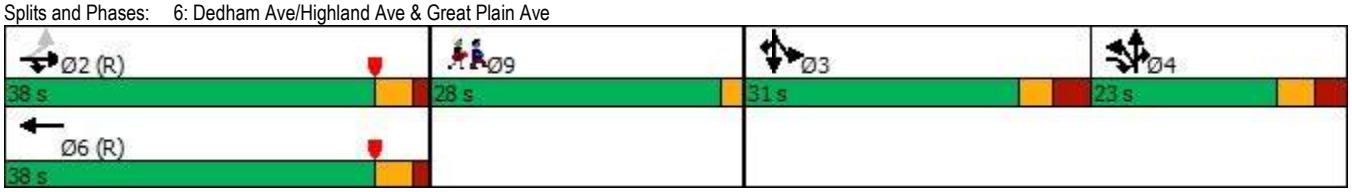
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Future Volume (vph)	55	271	272	0	329	73	263	163	24	30	90	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	10	10	10	10	10	10	10	10	12
Storage Length (ft)	0		0	0		0	0		35	0		90
Storage Lanes	0		1	0		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt			0.850		0.966				0.850			0.850
Flt Protected		0.992					0.950				0.987	
Satd. Flow (prot)	0	1557	1338	0	2780	0	1458	1565	1292	0	1499	1358
Flt Permitted		0.711					0.950				0.987	
Satd. Flow (perm)	0	1114	1338	0	2780	0	1455	1565	1292	0	1497	1358
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									95			95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		238			434			312			945	
Travel Time (s)		5.4			9.9			7.1			21.5	
Confl. Peds. (#/hr)	11		4	4		11	1		2	2		1
Peak Hour Factor	0.68	0.62	0.77	0.92	0.92	0.71	0.87	0.81	0.69	0.65	0.73	0.52
Heavy Vehicles (%)	0%	2%	5%	0%	4%	6%	4%	2%	5%	0%	7%	7%
Adj. Flow (vph)	81	437	353	0	358	103	302	201	35	46	123	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	518	353	0	461	0	302	201	35	0	169	60
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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1		2		1	2	1	1	2	1
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20		100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20		6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Detector Phase	2	2	2 4		6		4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0			10.0		11.5	11.5	11.5	11.5	11.5	11.5
Total Split (s)	38.0	38.0			38.0		23.0	23.0	23.0	31.0	31.0	31.0
Total Split (%)	31.7%	31.7%			31.7%		19.2%	19.2%	19.2%	25.8%	25.8%	25.8%
Maximum Green (s)	33.0	33.0			33.0		16.5	16.5	16.5	24.5	24.5	24.5
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5	3.0	3.0	3.0

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	26.0
Yellow Time (s)	2.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	1.5	1.5			1.5		3.0	3.0	3.0	3.5	3.5	3.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Lead/Lag							Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Min	C-Min			C-Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		37.4	79.9		37.4		36.0	36.0	36.0		17.8	17.8
Actuated g/C Ratio		0.31	0.67		0.31		0.30	0.30	0.30		0.15	0.15
v/c Ratio		1.49	0.40		0.53		0.69	0.43	0.08		0.76	0.21
Control Delay		254.5	6.6		37.3		50.4	42.7	0.3		69.6	4.1
Queue Delay		0.8	2.6		0.7		5.1	0.0	0.0		0.0	0.0
Total Delay		255.3	9.2		38.0		55.5	42.7	0.3		69.6	4.2
LOS		F	A		D		E	D	A		E	A
Approach Delay		155.5			38.0			47.1			52.4	
Approach LOS		F			D			D			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.49			
Intersection Signal Delay: 90.7		Intersection LOS: F	
Intersection Capacity Utilization 74.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Dedham Ave/Highland Ave & Great Plain Ave



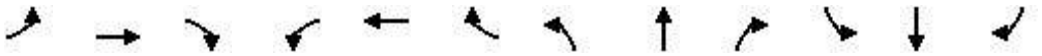
Lane Group	Ø9
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	518	353	461	302	201	35	169	60
v/c Ratio	1.49	0.40	0.53	0.69	0.43	0.08	0.76	0.21
Control Delay	254.5	6.6	37.3	50.4	42.7	0.3	69.6	4.1
Queue Delay	0.8	2.6	0.7	5.1	0.0	0.0	0.0	0.0
Total Delay	255.3	9.2	38.0	55.5	42.7	0.3	69.6	4.2
Queue Length 50th (ft)	~499	28	139	198	120	0	127	0
Queue Length 95th (ft)	#465	m72	221	#476	#249	0	150	0
Internal Link Dist (ft)	158		354		232		865	
Turn Bay Length (ft)						35		90
Base Capacity (vph)	347	890	866	437	469	453	307	353
Starvation Cap Reductn	24	409	0	0	0	0	0	0
Spillback Cap Reductn	0	0	159	82	0	0	0	15
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.60	0.73	0.65	0.85	0.43	0.08	0.55	0.18

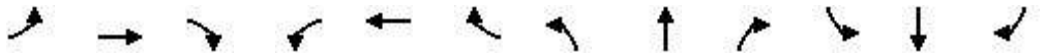
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Future Volume (vph)	55	271	272	0	329	73	263	163	24	30	90	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	11	10	10	10	10	10	10	10	10	12
Total Lost time (s)		5.0	5.0		5.0		6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00		1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)		1555	1338		2782		1458	1565	1292		1498	1358
Flt Permitted		0.71	1.00		1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)		1115	1338		2782		1458	1565	1292		1498	1358
Peak-hour factor, PHF	0.68	0.62	0.77	0.92	0.92	0.71	0.87	0.81	0.69	0.65	0.73	0.52
Adj. Flow (vph)	81	437	353	0	358	103	302	201	35	46	123	60
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	25	0	0	51
Lane Group Flow (vph)	0	518	353	0	461	0	302	201	11	0	169	9
Confl. Peds. (#/hr)	11		4	4		11	1		2	2		1
Heavy Vehicles (%)	0%	2%	5%	0%	4%	6%	4%	2%	5%	0%	7%	7%
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Actuated Green, G (s)		36.2	78.7		36.2		36.0	36.0	36.0		17.8	17.8
Effective Green, g (s)		36.2	72.2		36.2		36.0	36.0	36.0		17.8	17.8
Actuated g/C Ratio		0.30	0.60		0.30		0.30	0.30	0.30		0.15	0.15
Clearance Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		2.0			2.0		2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		336	805		839		437	469	387		222	201
v/s Ratio Prot			0.26		0.17		c0.21	0.13	0.01		c0.11	0.01
v/s Ratio Perm		c0.46										
v/c Ratio		1.54	0.44		0.55		0.69	0.43	0.03		0.76	0.04
Uniform Delay, d1		41.9	12.9		35.1		37.1	33.7	29.6		49.1	43.8
Progression Factor		0.57	0.42		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		252.1	0.1		2.6		3.8	0.2	0.0		12.9	0.0
Delay (s)		276.1	5.5		37.7		40.9	34.0	29.7		62.0	43.8
Level of Service		F	A		D		D	C	C		E	D
Approach Delay (s)		166.4			37.7			37.6			57.2	
Approach LOS		F			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	93.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



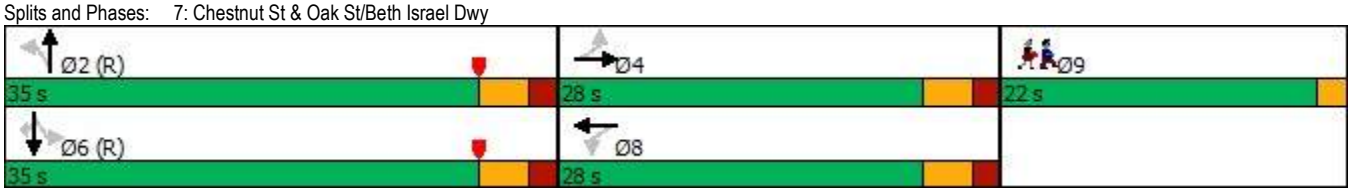
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Future Volume (vph)	81	9	74	8	6	14	116	553	10	23	278	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	8	8	11	11	11	9	9	12	12	9	9
Storage Length (ft)	0		0	0		0	80		0	0		150
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.939			0.935			0.997				0.850
Flt Protected		0.976			0.986		0.950				0.996	
Satd. Flow (prot)	0	1332	0	0	1494	0	1433	1504	0	0	1503	1283
Flt Permitted		0.834			0.920		0.502				0.938	
Satd. Flow (perm)	0	1138	0	0	1394	0	757	1504	0	0	1415	1283
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								1				78
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			314			227			439	
Travel Time (s)		13.8			7.1			5.2			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	10	80	9	7	15	126	601	11	25	302	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	178	0	0	31	0	126	612	0	0	327	78
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			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.19	1.19	1.19	1.30	1.30	1.14	1.14	1.30	1.30
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	28.0	28.0		28.0	28.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	32.9%	32.9%		32.9%	32.9%		41.2%	41.2%		41.2%	41.2%	41.2%
Maximum Green (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	30.0
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0			5.0	5.0

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	22.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		23.0			23.0		43.2	43.2			43.2	43.2
Actuated g/C Ratio		0.27			0.27		0.51	0.51			0.51	0.51
v/c Ratio		0.58			0.08		0.33	0.80			0.45	0.11
Control Delay		35.6			24.0		19.8	32.0			19.5	5.3
Queue Delay		0.0			0.0		0.0	0.0			0.0	0.0
Total Delay		35.6			24.0		19.8	32.0			19.5	5.3
LOS		D			C		B	C			B	A
Approach Delay		35.6			24.0			29.9			16.8	
Approach LOS		D			C			C			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 26.6		Intersection LOS: C	
Intersection Capacity Utilization 79.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Chestnut St & Oak St/Beth Israel Dwy



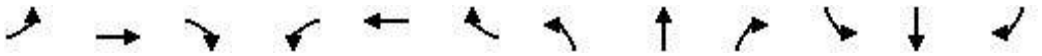
Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	178	31	126	612	327	78
v/c Ratio	0.58	0.08	0.33	0.80	0.45	0.11
Control Delay	35.6	24.0	19.8	32.0	19.5	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	24.0	19.8	32.0	19.5	5.3
Queue Length 50th (ft)	82	12	28	193	80	0
Queue Length 95th (ft)	151	34	106	#596	239	28
Internal Link Dist (ft)	526	234		147	359	
Turn Bay Length (ft)			80			150
Base Capacity (vph)	307	377	385	764	719	690
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.08	0.33	0.80	0.45	0.11

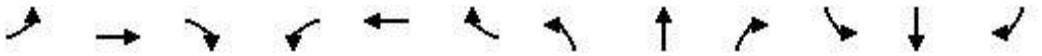
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Future Volume (vph)	81	9	74	8	6	14	116	553	10	23	278	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	11	11	11	9	9	12	12	9	9
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	1.00
Frt		0.94			0.93		1.00	1.00			1.00	0.85
Flt Protected		0.98			0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1332			1493		1433	1505			1503	1282
Flt Permitted		0.83			0.92		0.50	1.00			0.94	1.00
Satd. Flow (perm)		1138			1394		757	1505			1415	1282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	10	80	9	7	15	126	601	11	25	302	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	39
Lane Group Flow (vph)	0	178	0	0	31	0	126	611	0	0	327	39
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		23.0			23.0		42.0	42.0			42.0	42.0
Effective Green, g (s)		23.0			23.0		42.0	42.0			42.0	42.0
Actuated g/C Ratio		0.27			0.27		0.49	0.49			0.49	0.49
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		307			377		374	743			699	633
v/s Ratio Prot								c0.41				
v/s Ratio Perm		c0.16			0.02		0.17				0.23	0.03
v/c Ratio		0.58			0.08		0.34	0.82			0.47	0.06
Uniform Delay, d1		26.8			23.1		13.0	18.3			14.1	11.2
Progression Factor		1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		7.8			0.4		2.4	10.0			2.2	0.2
Delay (s)		34.6			23.6		15.5	28.3			16.4	11.4
Level of Service		C			C		B	C			B	B
Approach Delay (s)		34.6			23.6			26.1			15.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



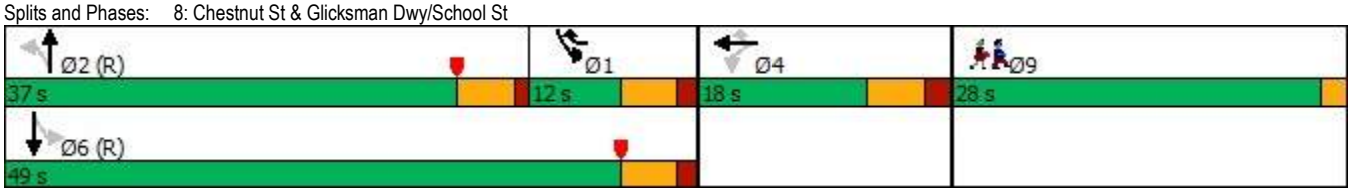
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Future Volume (vph)	0	0	0	166	4	53	6	473	234	51	210	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	9	13	9	12	12	9	12	12
Storage Length (ft)	0		0	0		150	40		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			70			70			100		
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						0.850		0.950			0.997	
Flt Protected					0.953		0.950			0.950		
Satd. Flow (prot)	0	0	0	0	1438	1473	1433	1593	0	1433	1671	0
Flt Permitted					0.953		0.614			0.173		
Satd. Flow (perm)	0	0	0	0	1438	1473	926	1593	0	261	1671	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						58		28			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		162			420			439			782	
Travel Time (s)		3.7			9.5			10.0			17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	180	4	58	7	514	254	55	228	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	184	58	7	768	0	55	232	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.30	1.30	1.10	1.30	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2		1	2	
Detector Template				Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)				20	100	20	20	100		20	100	
Trailing Detector (ft)				0	0	0	0	0		0	0	
Detector 1 Position(ft)				0	0	0	0	0		0	0	
Detector 1 Size(ft)				20	6	20	20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Detector Phase				4	4	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)				6.0	6.0	6.0	2.0	2.0		6.0	10.0	
Minimum Split (s)				12.0	12.0	11.5	7.0	7.0		11.5	15.5	
Total Split (s)				18.0	18.0	12.0	37.0	37.0		12.0	49.0	
Total Split (%)				18.9%	18.9%	12.6%	38.9%	38.9%		12.6%	51.6%	
Maximum Green (s)				12.0	12.0	6.5	32.0	32.0		6.5	43.5	
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)				2.0	2.0	1.5	1.0	1.0		1.5	1.5	
Lost Time Adjust (s)					0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	29%
Maximum Green (s)	26.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag						Lag	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode				None	None	None	C-Min	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					12.0	21.9	51.4	51.4		61.5	60.3	
Actuated g/C Ratio					0.13	0.23	0.54	0.54		0.65	0.63	
v/c Ratio					1.02	0.15	0.01	0.88		0.22	0.22	
Control Delay					114.8	8.7	19.3	36.9		19.0	11.3	
Queue Delay					0.0	0.0	0.0	43.3		0.0	0.0	
Total Delay					114.8	8.7	19.3	80.2		19.0	11.3	
LOS					F	A	B	F		B	B	
Approach Delay					89.4			79.7			12.8	
Approach LOS					F			E			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 95			
Actuated Cycle Length: 95			
Offset: 9 (9%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 66.7		Intersection LOS: E	
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Chestnut St & Glicksman Dwy/School St



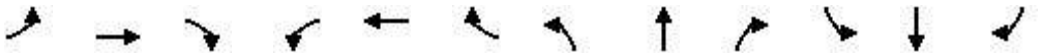
Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	184	58	7	768	55	232
v/c Ratio	1.02	0.15	0.01	0.88	0.22	0.22
Control Delay	114.8	8.7	19.3	36.9	19.0	11.3
Queue Delay	0.0	0.0	0.0	43.3	0.0	0.0
Total Delay	114.8	8.7	19.3	80.2	19.0	11.3
Queue Length 50th (ft)	~115	0	1	281	7	33
Queue Length 95th (ft)	#251	30	13	#841	40	138
Internal Link Dist (ft)	340			359		702
Turn Bay Length (ft)		150	40		115	
Base Capacity (vph)	181	354	500	874	250	1060
Starvation Cap Reductn	0	0	0	168	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.16	0.01	1.09	0.22	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Future Volume (vph)	0	0	0	166	4	53	6	473	234	51	210	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	9	9	13	9	12	12	9	12	12
Total Lost time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frt					1.00	0.85	1.00	0.95		1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1438	1472	1433	1593		1433	1672	
Flt Permitted					0.95	1.00	0.61	1.00		0.17	1.00	
Satd. Flow (perm)					1438	1472	926	1593		260	1672	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	180	4	58	7	514	254	55	228	4
RTOR Reduction (vph)	0	0	0	0	0	48	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	184	10	7	754	0	55	232	0
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Actuated Green, G (s)					12.0	17.0	49.1	49.1		59.1	59.1	
Effective Green, g (s)					12.0	17.0	49.1	49.1		59.1	59.1	
Actuated g/C Ratio					0.13	0.18	0.52	0.52		0.62	0.62	
Clearance Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Vehicle Extension (s)					3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)					181	348	478	823		223	1040	
v/s Ratio Prot						0.00		c0.47		0.01	c0.14	
v/s Ratio Perm					0.13	0.01	0.01			0.14		
v/c Ratio					1.02	0.03	0.01	0.92		0.25	0.22	
Uniform Delay, d1					41.5	32.2	11.2	21.1		24.7	7.9	
Progression Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2					71.3	0.0	0.1	16.7		0.6	0.5	
Delay (s)					112.8	32.2	11.2	37.7		25.3	8.4	
Level of Service					F	C	B	D		C	A	
Approach Delay (s)		0.0			93.5			37.5			11.6	
Approach LOS		A			F			D			B	

Intersection Summary			
HCM 2000 Control Delay	42.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	154	651	599	30	4	142
Future Volume (vph)	154	653	609	30	4	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.993		0.871	
Flt Protected		0.990			0.998	
Satd. Flow (prot)	0	2932	2944	0	1371	0
Flt Permitted		0.990			0.998	
Satd. Flow (perm)	0	2932	2944	0	1371	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		180	394		416	
Travel Time (s)		4.1	9.0		9.5	
Confl. Peds. (#/hr)	23			23		
Peak Hour Factor	0.75	0.77	0.84	0.81	0.50	0.78
Heavy Vehicles (%)	4%	2%	2%	8%	0%	5%
Adj. Flow (vph)	205	848	725	37	8	182
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1053	762	0	190	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.25	1.25	1.25	1.19	1.19
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

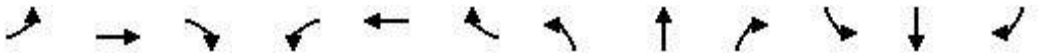
Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	154	651	599	30	4	142
Future Vol, veh/h	154	653	609	30	4	142
Conflicting Peds, #/hr	23	0	0	23	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	77	84	81	50	78
Heavy Vehicles, %	4	2	2	8	0	5
Mvmt Flow	205	848	725	37	8	182

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	785	0	-	0	1601	404
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	834	-
Critical Hdwy	4.18	-	-	-	6.8	7
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.24	-	-	-	3.5	3.35
Pot Cap-1 Maneuver	817	-	-	-	99	588
Stage 1	-	-	-	-	424	-
Stage 2	-	-	-	-	392	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	801	-	-	-	49	576
Mov Cap-2 Maneuver	-	-	-	-	49	-
Stage 1	-	-	-	-	215	-
Stage 2	-	-	-	-	384	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	22.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	801	-	-	-	396
HCM Lane V/C Ratio	0.256	-	-	-	0.48
HCM Control Delay (s)	11	1.8	-	-	22.2
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	1	-	-	-	2.5



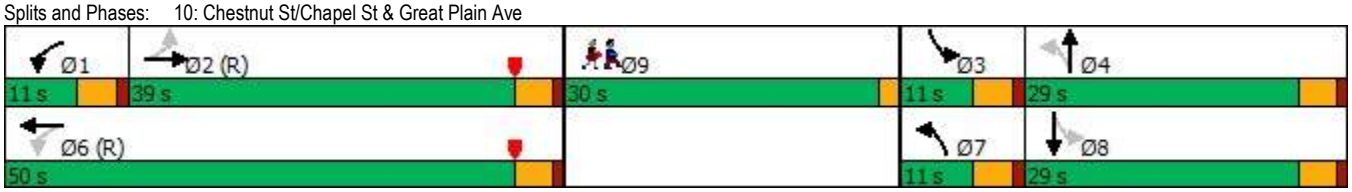
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Future Volume (vph)	61	522	74	83	497	43	97	280	57	18	156	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	175		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.983			0.989			0.975			0.953	
Flt Protected		0.995			0.993		0.950			0.950		
Satd. Flow (prot)	0	2861	0	0	2876	0	1444	1527	0	1430	1469	0
Flt Permitted		0.681			0.591		0.401			0.373		
Satd. Flow (perm)	0	1958	0	0	1711	0	609	1527	0	561	1469	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			238			782			424	
Travel Time (s)		9.0			5.4			17.8			9.6	
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.66	0.76	0.76	0.75	0.83	0.75	0.81	0.88	0.89	0.50	0.91	0.57
Heavy Vehicles (%)	8%	2%	9%	3%	4%	0%	5%	6%	2%	6%	4%	13%
Adj. Flow (vph)	92	687	97	111	599	57	120	318	64	36	171	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	876	0	0	767	0	120	382	0	36	248	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.19	1.19	1.25	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	29.0		11.0	29.0	
Total Split (%)	32.5%	32.5%		9.2%	41.7%		9.2%	24.2%		9.2%	24.2%	
Maximum Green (s)	34.5	34.5		6.5	45.5		6.5	24.5		6.5	24.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	30.0
Total Split (%)	25%
Maximum Green (s)	28.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		56.7			56.7		48.0	41.4		41.0	33.7	
Actuated g/C Ratio		0.47			0.47		0.40	0.34		0.34	0.28	
v/c Ratio		0.95			0.95		0.38	0.73		0.15	0.60	
Control Delay		50.6			37.3		29.0	45.9		25.7	46.2	
Queue Delay		43.9			0.0		0.0	0.0		0.0	0.0	
Total Delay		94.5			37.3		29.0	45.9		25.7	46.2	
LOS		F			D		C	D		C	D	
Approach Delay		94.5			37.3			41.9			43.6	
Approach LOS		F			D			D			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 59.6		Intersection LOS: E	
Intersection Capacity Utilization 78.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 10: Chestnut St/Chapel St & Great Plain Ave



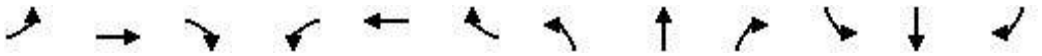
Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	876	767	120	382	36	248
v/c Ratio	0.95	0.95	0.38	0.73	0.15	0.60
Control Delay	50.6	37.3	29.0	45.9	25.7	46.2
Queue Delay	43.9	0.0	0.0	0.0	0.0	0.0
Total Delay	94.5	37.3	29.0	45.9	25.7	46.2
Queue Length 50th (ft)	324	313	56	257	16	160
Queue Length 95th (ft)	#422	#445	106	#540	24	#324
Internal Link Dist (ft)	314	158		702		344
Turn Bay Length (ft)			175		100	
Base Capacity (vph)	924	807	317	526	246	413
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	169	0	0	1	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.95	0.38	0.73	0.15	0.60

Intersection Summary

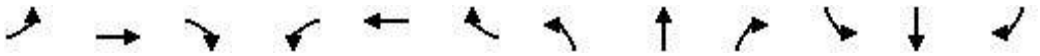
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Future Volume (vph)	61	522	74	83	497	43	97	280	57	18	156	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	11	11	10	11	11
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.97		1.00	0.95	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2862			2875		1444	1527		1430	1470	
Flt Permitted		0.68			0.59		0.40	1.00		0.37	1.00	
Satd. Flow (perm)		1959			1712		609	1527		561	1470	
Peak-hour factor, PHF	0.66	0.76	0.76	0.75	0.83	0.75	0.81	0.88	0.89	0.50	0.91	0.57
Adj. Flow (vph)	92	687	97	111	599	57	120	318	64	36	171	77
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	876	0	0	767	0	120	382	0	36	248	0
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	8%	2%	9%	3%	4%	0%	5%	6%	2%	6%	4%	13%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		53.3			53.3		50.7	41.4		40.3	35.5	
Effective Green, g (s)		53.3			53.3		50.7	41.4		40.3	35.5	
Actuated g/C Ratio		0.44			0.44		0.42	0.34		0.34	0.30	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		870			760		331	526		223	434	
v/s Ratio Prot							c0.03	c0.25		0.01	0.17	
v/s Ratio Perm		0.45			c0.45		0.12			0.05		
v/c Ratio		1.01			1.01		0.36	0.73		0.16	0.57	
Uniform Delay, d1		33.4			33.4		22.7	34.3		27.7	35.8	
Progression Factor		1.00			0.48		1.00	1.00		1.00	1.00	
Incremental Delay, d2		32.2			32.5		0.7	5.0		0.3	1.8	
Delay (s)		65.6			48.6		23.4	39.3		28.0	37.6	
Level of Service		E			D		C	D		C	D	
Approach Delay (s)		65.6			48.6			35.5			36.4	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	128	8	157	105	6	8	2	135	10	1	4
Future Volume (vph)	1	128	8	157	105	6	8	2	135	10	1	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	14	12	12	13	12	12	10	12
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
Ped Bike Factor												
Frt		0.994			0.997			0.881			0.964	
Flt Protected		0.999			0.972			0.995			0.971	
Satd. Flow (prot)	0	1738	0	0	1721	0	0	1503	0	0	1494	0
Flt Permitted		0.999			0.972			0.995			0.971	
Satd. Flow (perm)	0	1738	0	0	1721	0	0	1503	0	0	1494	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		521			453			566			491	
Travel Time (s)		11.8			10.3			12.9			11.2	
Confl. Peds. (#/hr)	1		3	3		1						
Peak Hour Factor	0.25	0.71	0.88	0.70	0.66	0.63	0.44	0.50	0.80	0.56	0.25	0.50
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	14%	0%	2%	0%	0%	0%
Adj. Flow (vph)	4	180	9	224	159	10	18	4	169	18	4	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	393	0	0	191	0	0	30	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	1.14	1.10	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	128	8	157	105	6	8	2	135	10	1	4
Future Vol, veh/h	1	128	8	157	105	6	8	2	135	10	1	4
Conflicting Peds, #/hr	1	0	3	3	0	1	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	25	71	88	70	66	63	44	50	80	56	25	50
Heavy Vehicles, %	0	1	0	4	1	0	14	0	2	0	0	0
Mvmt Flow	4	180	9	224	159	10	18	4	169	18	4	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	170	0	0	192	0	0	814	814	188	892	813	165
Stage 1	-	-	-	-	-	-	196	196	-	613	613	-
Stage 2	-	-	-	-	-	-	618	618	-	279	200	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.24	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.24	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.24	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.626	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1420	-	-	1370	-	-	283	315	854	265	315	885
Stage 1	-	-	-	-	-	-	779	742	-	483	486	-
Stage 2	-	-	-	-	-	-	457	484	-	732	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1419	-	-	1366	-	-	237	256	851	180	256	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	237	256	-	180	256	-
Stage 1	-	-	-	-	-	-	774	738	-	481	398	-
Stage 2	-	-	-	-	-	-	367	396	-	582	735	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	4.7	12.7	22
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	657	1419	-	-	1366	-	-	241
HCM Lane V/C Ratio	0.291	0.003	-	-	0.164	-	-	0.124
HCM Control Delay (s)	12.7	7.5	0	-	8.2	0	-	22
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.6	-	-	0.4

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	176	148	130	65	68	53
Future Volume (vph)	176	148	130	67	73	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.962		0.944	
Flt Protected		0.979			0.972	
Satd. Flow (prot)	0	1667	1516	0	1627	0
Flt Permitted		0.979			0.972	
Satd. Flow (perm)	0	1667	1516	0	1627	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		525	1036		802	
Travel Time (s)		11.9	23.5		18.2	
Confl. Peds. (#/hr)	4			4		1
Peak Hour Factor	0.90	0.56	0.59	0.78	0.74	0.75
Heavy Vehicles (%)	1%	0%	1%	2%	2%	4%
Adj. Flow (vph)	196	264	220	86	99	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	460	306	0	170	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.25	1.25	1.05	1.05
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.8%		ICU Level of Service A	
Analysis Period (min) 15			

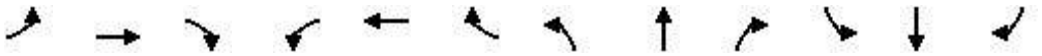
Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	176	148	130	65	68	53
Future Vol, veh/h	176	148	130	67	73	53
Conflicting Peds, #/hr	4	0	0	4	0	1
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	90	56	59	78	74	75
Heavy Vehicles, %	1	0	1	2	2	4
Mvmt Flow	196	264	220	86	99	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	310	0	-	0	923	268
Stage 1	-	-	-	-	267	-
Stage 2	-	-	-	-	656	-
Critical Hdwy	4.11	-	-	-	6.42	6.24
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.209	-	-	-	3.518	3.336
Pot Cap-1 Maneuver	1256	-	-	-	299	766
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	516	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1250	-	-	-	242	762
Mov Cap-2 Maneuver	-	-	-	-	242	-
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	514	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	25.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1250	-	-	-	338
HCM Lane V/C Ratio	0.156	-	-	-	0.501
HCM Control Delay (s)	8.4	0	-	-	25.9
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.6	-	-	-	2.7



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	350	24	99	228	32	9	67	86	9	72	18
Future Volume (vph)	28	350	24	102	228	32	9	68	97	9	72	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	12	12	14	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.990			0.985			0.924			0.973	
Flt Protected		0.995			0.985			0.998			0.996	
Satd. Flow (prot)	0	1486	0	0	1729	0	0	1590	0	0	1614	0
Flt Permitted		0.995			0.985			0.998			0.996	
Satd. Flow (perm)	0	1486	0	0	1729	0	0	1590	0	0	1614	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		459			455			883			496	
Travel Time (s)		10.4			10.3			20.1			11.3	
Confl. Peds. (#/hr)	14		7	7		14	2		3	3		2
Peak Hour Factor	0.63	0.90	0.69	0.70	0.81	0.60	0.67	0.66	0.65	0.67	0.63	0.57
Heavy Vehicles (%)	0%	2%	5%	2%	3%	0%	0%	2%	3%	25%	2%	13%
Adj. Flow (vph)	44	389	35	146	281	53	13	103	149	13	114	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	468	0	0	480	0	0	265	0	0	159	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	1.14	1.30	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.0%		ICU Level of Service C	
Analysis Period (min) 15			

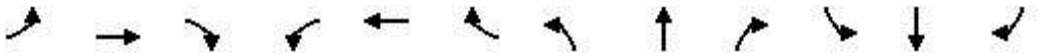
Intersection	
Int Delay, s/veh	47.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	350	24	99	228	32	9	67	86	9	72	18
Future Vol, veh/h	28	350	24	102	228	32	9	68	97	9	72	18
Conflicting Peds, #/hr	14	0	7	7	0	14	2	0	3	3	0	2
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	63	90	69	70	81	60	67	66	65	67	63	57
Heavy Vehicles, %	0	2	5	2	3	0	0	2	3	25	2	13
Mvmt Flow	44	389	35	146	281	53	13	103	149	13	114	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	348	0	0	431	0	0	1177	1142	417	1238	1133	324
Stage 1	-	-	-	-	-	-	502	502	-	614	614	-
Stage 2	-	-	-	-	-	-	675	640	-	624	519	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.52	6.23	7.35	6.52	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.35	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.35	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4.018	3.327	3.725	4.018	3.417
Pot Cap-1 Maneuver	1222	-	-	1129	-	-	169	200	634	137	203	692
Stage 1	-	-	-	-	-	-	555	542	-	442	483	-
Stage 2	-	-	-	-	-	-	447	470	-	436	533	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1204	-	-	1121	-	-	58	156	627	42	159	681
Mov Cap-2 Maneuver	-	-	-	-	-	-	58	156	-	42	159	-
Stage 1	-	-	-	-	-	-	524	512	-	415	399	-
Stage 2	-	-	-	-	-	-	255	389	-	252	504	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	2.6	142.8	159.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	235	1204	-	-	1121	-	-	147
HCM Lane V/C Ratio	1.131	0.037	-	-	0.13	-	-	1.084
HCM Control Delay (s)	142.8	8.1	0	-	8.7	0	-	159.2
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	12.1	0.1	-	-	0.4	-	-	8.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	134	28	23	187	32	39	89	21	25	51	10
Future Volume (vph)	18	149	28	23	193	32	40	89	21	25	51	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	15	12	12	13	12
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
Ped Bike Factor												
Frt		0.977			0.979			0.982			0.981	
Flt Protected		0.995			0.994			0.987			0.983	
Satd. Flow (prot)	0	1651	0	0	1516	0	0	1775	0	0	1639	0
Flt Permitted		0.995			0.994			0.987			0.983	
Satd. Flow (perm)	0	1651	0	0	1516	0	0	1775	0	0	1639	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			695			637			578	
Travel Time (s)		9.3			15.8			14.5			13.1	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.67	0.82	0.63	0.66	0.88	0.66	0.67	0.65	0.68	0.58	0.77	0.56
Heavy Vehicles (%)	0%	0%	4%	5%	1%	7%	0%	2%	11%	4%	2%	11%
Adj. Flow (vph)	27	182	44	35	219	48	60	137	31	43	66	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	253	0	0	302	0	0	228	0	0	127	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	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.01	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	134	28	23	187	32	39	89	21	25	51	10
Future Vol, veh/h	18	149	28	23	193	32	40	89	21	25	51	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	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	67	82	63	66	88	66	67	65	68	58	77	56
Heavy Vehicles, %	0	0	4	5	1	7	0	2	11	4	2	11
Mvmt Flow	27	182	44	35	219	48	60	137	31	43	66	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	267	0	0	226	0	0	613	595	206	657	593	243
Stage 1	-	-	-	-	-	-	258	258	-	313	313	-
Stage 2	-	-	-	-	-	-	355	337	-	344	280	-
Critical Hdwy	4.1	-	-	4.15	-	-	7.1	6.52	6.31	7.14	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.14	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.14	5.52	-
Follow-up Hdwy	2.2	-	-	2.245	-	-	3.5	4.018	3.399	3.536	4.018	3.399
Pot Cap-1 Maneuver	1308	-	-	1325	-	-	408	417	812	375	418	774
Stage 1	-	-	-	-	-	-	751	694	-	693	657	-
Stage 2	-	-	-	-	-	-	666	641	-	667	679	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1308	-	-	1325	-	-	333	394	811	253	395	774
Mov Cap-2 Maneuver	-	-	-	-	-	-	333	394	-	253	395	-
Stage 1	-	-	-	-	-	-	733	677	-	676	637	-
Stage 2	-	-	-	-	-	-	565	621	-	499	663	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.9	24.9	20.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	403	1308	-	-	1325	-	-	352
HCM Lane V/C Ratio	0.565	0.021	-	-	0.026	-	-	0.361
HCM Control Delay (s)	24.9	7.8	0	-	7.8	0	-	20.9
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	3.4	0.1	-	-	0.1	-	-	1.6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	64	59	70	504	330	133
Future Volume (vph)	64	59	70	504	330	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.930				0.960	
Flt Protected	0.976			0.992		
Satd. Flow (prot)	1536	0	0	1642	1609	0
Flt Permitted	0.976			0.992		
Satd. Flow (perm)	1536	0	0	1642	1609	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	756			591	599	
Travel Time (s)	17.2			13.4	13.6	
Confl. Peds. (#/hr)	3		2			2
Confl. Bikes (#/hr)						1
Peak Hour Factor	0.85	0.74	0.63	0.83	0.63	0.60
Heavy Vehicles (%)	0%	2%	5%	3%	2%	2%
Adj. Flow (vph)	75	80	111	607	524	222
Shared Lane Traffic (%)						
Lane Group Flow (vph)	155	0	0	718	746	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 80.1%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	64	59	70	504	330	133
Future Vol, veh/h	64	59	70	504	330	133
Conflicting Peds, #/hr	3	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	74	63	83	63	60
Heavy Vehicles, %	0	2	5	3	2	2
Mvmt Flow	75	80	111	607	524	222

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1469	637	748	0	-	0
Stage 1	637	-	-	-	-	-
Stage 2	832	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.245	-	-	-
Pot Cap-1 Maneuver	142	477	847	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	113	476	845	-	-	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	425	-	-	-	-	-
Stage 2	430	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	80	1.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	845	-	186	-	-
HCM Lane V/C Ratio	0.131	-	0.833	-	-
HCM Control Delay (s)	9.9	0	80	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.5	-	5.9	-	-

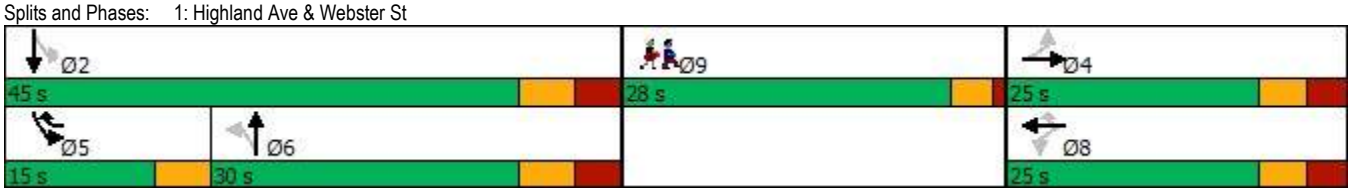
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	261	40	25	173	237	32	427	42	282	622	70
Future Volume (vph)	72	261	40	25	173	237	32	448	42	282	659	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	10	10	12	10	10	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Frt		0.983				0.850		0.987			0.985	
Flt Protected		0.990			0.994		0.950			0.950		
Satd. Flow (prot)	0	3244	0	0	1739	1507	1636	1748	0	1685	1722	0
Flt Permitted		0.738			0.876		0.169			0.145		
Satd. Flow (perm)	0	2414	0	0	1532	1462	290	1748	0	257	1722	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								4				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			193			991			1083	
Travel Time (s)		8.6			4.4			22.5			24.6	
Confl. Peds. (#/hr)	6		3	3		6	8		2	2		8
Confl. Bikes (#/hr)			3						2			1
Peak Hour Factor	0.93	0.95	0.91	0.88	0.84	0.66	0.80	0.78	0.80	0.52	0.88	0.85
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	3%	0%	0%	0%	1%	2%
Adj. Flow (vph)	77	275	44	28	206	359	40	574	53	542	749	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	396	0	0	234	359	40	627	0	542	831	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.09	1.09	1.09	1.09	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phase	4	4		8	8	5	6	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	10.0	10.0		6.0	10.0	
Minimum Split (s)	12.5	12.5		12.5	12.5	10.0	17.5	17.5		10.0	17.5	
Total Split (s)	25.0	25.0		25.0	25.0	15.0	30.0	30.0		15.0	45.0	
Total Split (%)	25.5%	25.5%		25.5%	25.5%	15.3%	30.6%	30.6%		15.3%	45.9%	
Maximum Green (s)	18.5	18.5		18.5	18.5	11.0	22.5	22.5		11.0	37.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	29%
Maximum Green (s)	24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	0.0	3.5	3.5		0.0	3.5	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		-2.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0	7.5	7.5		2.0	7.5	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		17.0			17.0	31.0	23.4	23.4		44.7	39.0	
Actuated g/C Ratio		0.20			0.20	0.36	0.27	0.27		0.53	0.46	
v/c Ratio		0.82			0.77	0.67	0.51	1.30		1.50	1.05	
Control Delay		50.6			53.1	30.6	58.6	179.0		261.3	75.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		50.6			53.1	30.6	58.6	179.0		261.3	75.8	
LOS		D			D	C	E	F		F	E	
Approach Delay		50.6			39.5			171.8			149.0	
Approach LOS		D			D			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 98			
Actuated Cycle Length: 85.1			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.50			
Intersection Signal Delay: 119.7		Intersection LOS: F	
Intersection Capacity Utilization 89.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Highland Ave & Webster St



Lane Group	Ø9
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	44
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

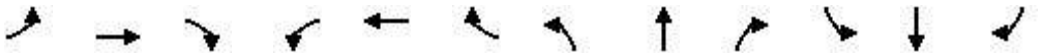
Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	396	234	359	40	627	542	831
v/c Ratio	0.82	0.77	0.67	0.51	1.30	1.50	1.05
Control Delay	50.6	53.1	30.6	58.6	179.0	261.3	75.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.6	53.1	30.6	58.6	179.0	261.3	75.8
Queue Length 50th (ft)	127	141	183	22	~559	~464	~655
Queue Length 95th (ft)	#211	#236	185	#64	#635	#277	#855
Internal Link Dist (ft)	299	113			911		1003
Turn Bay Length (ft)				60			
Base Capacity (vph)	545	346	538	79	483	361	788
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.68	0.67	0.51	1.30	1.50	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

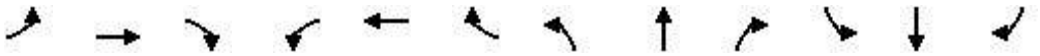
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	261	40	25	173	237	32	427	42	282	622	70
Future Volume (vph)	72	261	40	25	173	237	32	448	42	282	659	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	12	10	10	10	10	12	10	10	12
Total Lost time (s)		6.5			6.5	4.0	7.5	7.5		2.0	7.5	
Lane Util. Factor		0.95			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3240			1738	1481	1631	1749		1685	1723	
Flt Permitted		0.74			0.88	1.00	0.17	1.00		0.14	1.00	
Satd. Flow (perm)		2415			1533	1481	291	1749		257	1723	
Peak-hour factor, PHF	0.93	0.95	0.91	0.88	0.84	0.66	0.80	0.78	0.80	0.52	0.88	0.85
Adj. Flow (vph)	77	275	44	28	206	359	40	574	52	542	749	82
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	396	0	0	234	359	40	624	0	542	831	0
Confl. Peds. (#/hr)	6		3	3		6	8		2	2		8
Confl. Bikes (#/hr)			3						2			1
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	3%	0%	0%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		17.0			17.0	28.4	23.6	23.6		39.0	39.0	
Effective Green, g (s)		17.0			17.0	28.4	23.6	23.6		41.0	39.0	
Actuated g/C Ratio		0.20			0.20	0.33	0.27	0.27		0.47	0.45	
Clearance Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		474			301	486	79	477		343	776	
v/s Ratio Prot						0.10		c0.36		c0.24	0.48	
v/s Ratio Perm		c0.16			0.15	0.15	0.14			0.50		
v/c Ratio		0.84			0.78	0.74	0.51	1.31		1.58	1.07	
Uniform Delay, d1		33.4			33.0	25.8	26.5	31.4		23.6	23.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.6			10.9	5.0	1.9	153.3		274.7	53.0	
Delay (s)		45.0			43.9	30.8	28.4	184.7		298.3	76.7	
Level of Service		D			D	C	C	F		F	E	
Approach Delay (s)		45.0			35.9			175.3			164.2	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	126.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	86.5	Sum of lost time (s)	22.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	89	83	2	24	1	128	422	12	13	611	66
Future Volume (vph)	45	89	87	2	24	1	134	437	12	13	637	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	11	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.952			0.989			0.997			0.982	
Flt Protected		0.990			0.996			0.986			0.998	
Satd. Flow (prot)	0	1632	0	0	1628	0	0	1708	0	0	1706	0
Flt Permitted		0.990			0.996			0.986			0.998	
Satd. Flow (perm)	0	1632	0	0	1628	0	0	1708	0	0	1706	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		695			444			621			443	
Travel Time (s)		15.8			10.1			14.1			10.1	
Confl. Peds. (#/hr)	8					8	11		9	9		11
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.71	0.66	0.80	0.50	0.61	0.25	0.62	0.81	0.69	0.50	0.98	0.74
Heavy Vehicles (%)	3%	0%	4%	0%	0%	0%	1%	2%	0%	0%	1%	5%
Adj. Flow (vph)	63	135	109	4	39	4	216	540	17	26	650	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	307	0	0	47	0	0	773	0	0	780	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	1.14	1.10	1.14	1.14	1.19	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 104.4%		ICU Level of Service G	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	501.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	89	83	2	24	1	128	422	12	13	611	66
Future Vol, veh/h	45	89	87	2	24	1	134	437	12	13	637	77
Conflicting Peds, #/hr	8	0	0	0	0	8	11	0	9	9	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	66	80	50	61	25	62	81	69	50	98	74
Heavy Vehicles, %	3	0	4	0	0	0	1	2	0	0	1	5
Mvmt Flow	63	135	109	4	39	4	216	540	17	26	650	104

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1775	1763	713	1866	1807	566	765	0	0	566	0	0
Stage 1	765	765	-	990	990	-	-	-	-	-	-	-
Stage 2	1010	998	-	876	817	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.5	6.24	7.1	6.5	6.2	4.11	-	-	4.1	-	-
Critical Hdwy Stg 1	6.13	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4	3.336	3.5	4	3.3	2.209	-	-	2.2	-	-
Pot Cap-1 Maneuver	64	~ 85	428	56	80	528	853	-	-	1016	-	-
Stage 1	394	415	-	299	327	-	-	-	-	-	-	-
Stage 2	288	324	-	346	393	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 14	~ 50	423	-	47	520	843	-	-	1008	-	-
Mov Cap-2 Maneuver	~ 14	~ 50	-	-	47	-	-	-	-	-	-	-
Stage 1	245	392	-	186	204	-	-	-	-	-	-	-
Stage 2	144	202	-	161	371	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 3110.1		3	0.3
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	843	-	-	41	-	1008	-	-
HCM Lane V/C Ratio	0.256	-	-	7.487	-	0.026	-	-
HCM Control Delay (s)	10.7	0	-	$ 3110.1	-	8.7	0	-
HCM Lane LOS	B	A	-	F	-	A	A	-
HCM 95th %tile Q(veh)	1	-	-	36.4	-	0.1	-	-

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

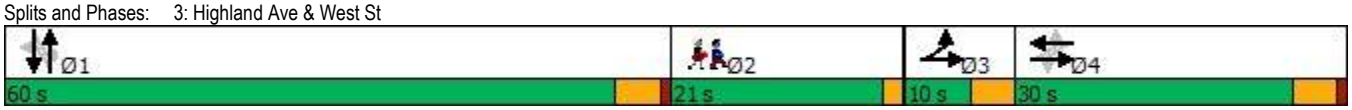
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Future Volume (vph)	133	212	45	49	171	37	25	432	40	48	431	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	9	10	12	12	13	12	12	13	12
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.98	0.99			0.99			0.99	
Frt		0.971			0.970			0.984			0.955	
Flt Protected	0.950			0.950				0.997			0.996	
Satd. Flow (prot)	1433	1471	0	1462	1536	0	0	1711	0	0	1633	0
Flt Permitted	0.342			0.571				0.935			0.929	
Satd. Flow (perm)	512	1471	0	864	1536	0	0	1604	0	0	1523	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		455			303			836			621	
Travel Time (s)		10.3			6.9			19.0			14.1	
Confl. Peds. (#/hr)	7		11	11		7	14		21	21		14
Confl. Bikes (#/hr)						1			1			1
Peak Hour Factor	0.69	0.92	0.83	0.66	0.84	0.73	0.82	0.96	0.64	0.81	0.88	0.89
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	0%	1%	0%	2%	2%	1%
Adj. Flow (vph)	193	230	54	74	204	51	30	450	63	59	490	275
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	284	0	74	255	0	0	543	0	0	824	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)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.14	1.30	1.25	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Detector Phase	3	3 4		4	4		1	1		1	1	
Switch Phase												
Minimum Initial (s)	6.0			6.0	6.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.0			11.0	11.0		15.0	15.0		15.0	15.0	
Total Split (s)	10.0			30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	8.3%			24.8%	24.8%		49.6%	49.6%		49.6%	49.6%	
Maximum Green (s)	6.0			25.0	25.0		55.0	55.0		55.0	55.0	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	17%
Maximum Green (s)	19.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0			4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0			1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.0			5.0	5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			4.0	4.0		2.0	2.0		2.0	2.0	
Recall Mode	None			None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	29.3	33.4		22.2	22.2			55.9			55.9	
Actuated g/C Ratio	0.27	0.30		0.20	0.20			0.51			0.51	
v/c Ratio	1.03	0.64		0.43	0.83			0.67			1.06	
Control Delay	112.3	42.2		49.3	65.6			28.2			80.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	112.3	42.2		49.3	65.6			28.2			80.0	
LOS	F	D		D	E			C			F	
Approach Delay		70.6			61.9			28.2			80.0	
Approach LOS		E			E			C			F	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 121			
Actuated Cycle Length: 109.9			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.06			
Intersection Signal Delay: 62.2		Intersection LOS: E	
Intersection Capacity Utilization 91.1%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Highland Ave & West St



Lane Group	Ø2
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	24
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

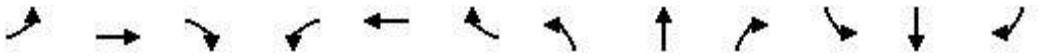
Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	193	284	74	255	543	824
v/c Ratio	1.03	0.64	0.43	0.83	0.67	1.06
Control Delay	112.3	42.2	49.3	65.6	28.2	80.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.3	42.2	49.3	65.6	28.2	80.0
Queue Length 50th (ft)	~133	193	51	191	342	~777
Queue Length 95th (ft)	#177	293	71	#285	488	#985
Internal Link Dist (ft)		375		223	756	541
Turn Bay Length (ft)			150			
Base Capacity (vph)	187	490	199	355	816	775
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.58	0.37	0.72	0.67	1.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

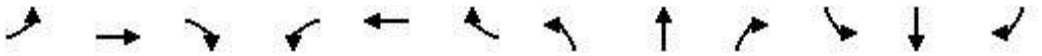
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Future Volume (vph)	133	212	45	49	171	37	25	432	40	48	431	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	12	9	10	12	12	13	12	12	13	12
Total Lost time (s)	4.0	4.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		0.98	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.97			0.98			0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1430	1472		1435	1536			1712			1634	
Flt Permitted	0.34	1.00		0.57	1.00			0.94			0.93	
Satd. Flow (perm)	514	1472		862	1536			1606			1523	
Peak-hour factor, PHF	0.69	0.92	0.83	0.66	0.84	0.73	0.82	0.96	0.64	0.81	0.88	0.89
Adj. Flow (vph)	193	230	54	74	204	51	30	450	62	59	490	275
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	193	284	0	74	255	0	0	543	0	0	824	0
Confl. Peds. (#/hr)	7		11	11		7	14		21	21		14
Confl. Bikes (#/hr)						1			1			1
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	0%	1%	0%	2%	2%	1%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Actuated Green, G (s)	28.3	32.3		22.2	22.2			55.9			55.9	
Effective Green, g (s)	28.3	32.3		22.2	22.2			55.9			55.9	
Actuated g/C Ratio	0.26	0.29		0.20	0.20			0.51			0.51	
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	
Vehicle Extension (s)	2.0			4.0	4.0			2.0			2.0	
Lane Grp Cap (vph)	182	429		173	308			811			769	
v/s Ratio Prot	c0.06	0.19			0.17							
v/s Ratio Perm	c0.21			0.09				0.34			c0.54	
v/c Ratio	1.06	0.66		0.43	0.83			0.67			1.07	
Uniform Delay, d1	40.8	34.4		38.6	42.4			20.4			27.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	83.6	3.0		2.3	17.2			1.6			53.3	
Delay (s)	124.4	37.3		41.0	59.6			22.1			80.7	
Level of Service	F	D		D	E			C			F	
Approach Delay (s)		72.6			55.4			22.1			80.7	
Approach LOS		E			E			C			F	

Intersection Summary			
HCM 2000 Control Delay	60.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	110.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Future Volume (vph)	45	0	189	93	49	40	94	484	0	0	509	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	9	11	9	12	11	13	12	12	16	12
Storage Length (ft)	0		25	50		0	60		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97		0.99	0.98		0.99				1.00	
Frt		0.889			0.924						0.992	
Flt Protected		0.991		0.950			0.950					
Satd. Flow (prot)	0	1314	0	1570	1399	0	1570	1750	0	0	1899	0
Flt Permitted		0.913		0.423			0.280					
Satd. Flow (perm)	0	1209	0	693	1399	0	460	1750	0	0	1899	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		254			55							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1036			474			1055			1271	
Travel Time (s)		23.5			10.8			24.0			28.9	
Confl. Peds. (#/hr)	6		9	9		6	19		20	20		19
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.83	0.92	0.74	0.93	0.90	0.73	0.79	0.91	0.92	0.92	0.87	0.84
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	54	0	255	100	54	55	119	532	0	0	585	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	309	0	100	109	0	119	532	0	0	622	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)		11			11			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.30	1.19	1.30	1.14	1.19	1.10	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2			2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	20	100		20	100		20	100			100	
Trailing Detector (ft)	0	0		0	0		0	0			0	
Detector 1 Position(ft)	0	0		0	0		0	0			0	
Detector 1 Size(ft)	20	6		20	6		20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0			12.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0			40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%			44.4%	
Maximum Green (s)	23.0	23.0		23.0	23.0		33.0	33.0			33.0	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		Max	Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.3		14.3	14.3		34.6	34.6			34.6	
Actuated g/C Ratio		0.20		0.20	0.20		0.49	0.49			0.49	
v/c Ratio		0.69		0.70	0.33		0.52	0.61			0.66	
Control Delay		15.4		54.7	17.3		30.9	21.9			22.8	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		15.4		54.7	17.3		30.9	21.9			22.8	
LOS		B		D	B		C	C			C	
Approach Delay		15.4			35.2			23.5			22.8	
Approach LOS		B			D			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 69.9			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 23.2		Intersection LOS: C	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Highland Ave & Rosemary St

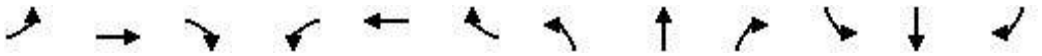
Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	27
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	309	100	109	119	532	622
v/c Ratio	0.69	0.70	0.33	0.52	0.61	0.66
Control Delay	15.4	54.7	17.3	30.9	21.9	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	54.7	17.3	30.9	21.9	22.8
Queue Length 50th (ft)	16	33	16	24	114	138
Queue Length 95th (ft)	110	#114	67	#118	#447	#499
Internal Link Dist (ft)	956		394		975	1191
Turn Bay Length (ft)		50		60		
Base Capacity (vph)	583	239	518	227	866	940
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.42	0.21	0.52	0.61	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Future Volume (vph)	45	0	189	93	49	40	94	484	0	0	509	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	9	11	9	12	11	13	12	12	16	12
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		0.97		1.00	0.98		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		0.99	1.00		0.99	1.00			1.00	
Frt		0.89		1.00	0.92		1.00	1.00			0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1306		1554	1398		1560	1750			1900	
Flt Permitted		0.91		0.42	1.00		0.28	1.00			1.00	
Satd. Flow (perm)		1203		693	1398		460	1750			1900	
Peak-hour factor, PHF	0.83	0.92	0.74	0.93	0.90	0.73	0.79	0.91	0.92	0.92	0.87	0.84
Adj. Flow (vph)	54	0	255	100	54	55	119	532	0	0	585	37
RTOR Reduction (vph)	0	203	0	0	44	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	106	0	100	65	0	119	532	0	0	622	0
Confl. Peds. (#/hr)	6		9	9		6	19		20	20		19
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		14.3		14.3	14.3		34.6	34.6			34.6	
Effective Green, g (s)		14.3		14.3	14.3		34.6	34.6			34.6	
Actuated g/C Ratio		0.20		0.20	0.20		0.49	0.49			0.49	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		243		140	283		225	857			931	
v/s Ratio Prot					0.05			0.30			c0.33	
v/s Ratio Perm		0.09		c0.14			0.26					
v/c Ratio		0.44		0.71	0.23		0.53	0.62			0.67	
Uniform Delay, d1		24.6		26.2	23.5		12.4	13.2			13.6	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.3		15.9	0.4		8.6	3.4			3.8	
Delay (s)		25.9		42.1	24.0		21.0	16.6			17.4	
Level of Service		C		D	C		C	B			B	
Approach Delay (s)		25.9			32.6			17.4			17.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

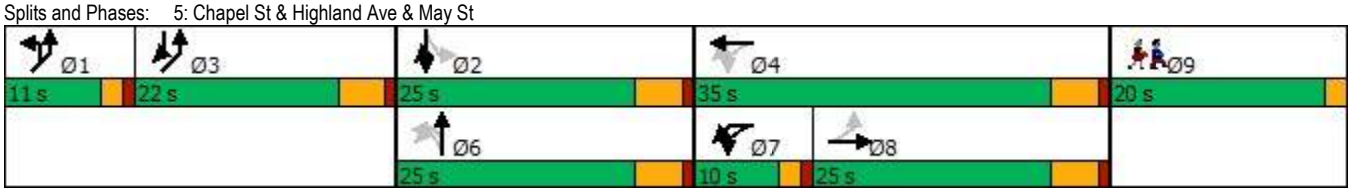
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Future Volume (vph)	61	104	28	23	10	42	129	24	4	19	155	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12	10	12	12	12	16	12
Storage Length (ft)	0		0			0		0		0		0
Storage Lanes	0		0			0		0		0		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99					0.99				0.99	
Frt		0.962					0.985				0.980	
Flt Protected		0.987					0.984				0.995	
Satd. Flow (prot)	0	1630	0	0	0	0	1542	0	0	0	1862	0
Flt Permitted		0.802					0.742				0.549	
Satd. Flow (perm)	0	1322	0	0	0	0	1160	0	0	0	1026	0
Right Turn on Red				No				Yes				No
Satd. Flow (RTOR)							5					
Link Speed (mph)		30					30				30	
Link Distance (ft)		453					923				945	
Travel Time (s)		10.3					21.0				21.5	
Confl. Peds. (#/hr)	4		5	3	3	5		4	3	12		13
Confl. Bikes (#/hr)			1	1				1				2
Peak Hour Factor	0.81	0.81	0.63	0.66	0.56	0.63	0.84	0.79	1.00	0.85	0.76	0.64
Heavy Vehicles (%)	2%	1%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	75	128	44	35	18	67	154	30	4	22	204	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	282	0	0	0	0	269	0	0	0	269	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Left	Left	Right
Median Width(ft)		0					0				0	
Link Offset(ft)		0					0				0	
Crosswalk Width(ft)		16					16				16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2		1	1	2	
Detector Template	Left	Thru			Left	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100		20	20	100	
Trailing Detector (ft)	0	0			0	0	0		0	0	0	
Detector 1 Position(ft)	0	0			0	0	0		0	0	0	
Detector 1 Size(ft)	20	6			20	20	6		20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Detector Phase	8	8			7	7	4		6	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0			2.0	2.0	6.0		6.0	6.0	6.0	
Minimum Split (s)	11.0	11.0			6.0	6.0	11.0		11.0	11.0	11.0	
Total Split (s)	25.0	25.0			10.0	10.0	35.0		25.0	25.0	25.0	
Total Split (%)	22.1%	22.1%			8.8%	8.8%	31.0%		22.1%	22.1%	22.1%	
Maximum Green (s)	20.0	20.0			7.0	7.0	30.0		20.0	20.0	20.0	

Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Lane Configurations										
Traffic Volume (vph)	41	215	355	162	18	182	19	10		
Future Volume (vph)	41	218	369	162	18	196	19	10		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	10	11	12	10	11	11	11		
Storage Length (ft)	0		120			0	60			
Storage Lanes	0		1			2	1			
Taper Length (ft)	25					25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00			0.96	0.99				
Frt			0.850			0.976				
Flt Protected		0.990			0.950	0.960				
Satd. Flow (prot)	0	1571	1391	0	1516	1509	0	0		
Flt Permitted		0.683			0.950	0.960				
Satd. Flow (perm)	0	1080	1391	0	1458	1505	0	0		
Right Turn on Red				No				Yes		
Satd. Flow (RTOR)						116				
Link Speed (mph)		30				30				
Link Distance (ft)		644				580				
Travel Time (s)		14.6				13.2				
Confl. Peds. (#/hr)	13		3	12	12	4	13	5		
Confl. Bikes (#/hr)			1	1						
Peak Hour Factor	0.62	0.81	0.96	0.86	0.50	0.83	0.85	0.45		
Heavy Vehicles (%)	3%	0%	1%	1%	0%	1%	0%	11%		
Adj. Flow (vph)	66	269	384	188	36	236	22	22		
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	335	572	0	36	280	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Right	Left	Left	Right	Right		
Median Width(ft)		0				21				
Link Offset(ft)		0				0				
Crosswalk Width(ft)		16				16				
Two way Left Turn Lane										
Headway Factor	1.14	1.25	1.19	1.14	1.25	1.19	1.19	1.19		
Turning Speed (mph)	15		9	9	15	15	9	9		
Number of Detectors	1	2	1		1	1				
Detector Template	Left	Thru	Right		Left	Left				
Leading Detector (ft)	20	100	20		20	20				
Trailing Detector (ft)	0	0	0		0	0				
Detector 1 Position(ft)	0	0	0		0	0				
Detector 1 Size(ft)	20	6	20		20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)		94								
Detector 2 Size(ft)		6								
Detector 2 Type		Cl+Ex								
Detector 2 Channel										
Detector 2 Extend (s)		0.0								
Turn Type	Perm	NA	custom		Prot	Prot				
Protected Phases		2	2 3		1	1 3			3	9
Permitted Phases	2									
Detector Phase	2	2	2 3		1	1 3				
Switch Phase										
Minimum Initial (s)	6.0	6.0			1.0				4.0	5.0
Minimum Split (s)	11.0	11.0			6.0				9.0	20.0
Total Split (s)	25.0	25.0			11.0				22.0	20.0
Total Split (%)	22.1%	22.1%			9.7%				19%	18%
Maximum Green (s)	20.0	20.0			8.0				17.0	18.0

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Yellow Time (s)	4.0	4.0			2.0	2.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0				0.0	
Total Lost Time (s)		5.0					5.0				5.0	
Lead/Lag	Lag	Lag			Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None			None	None	None		Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		29.4					29.4				20.2	
Actuated g/C Ratio		0.29					0.29				0.20	
v/c Ratio		0.73					0.78				1.30	
Control Delay		46.1					51.3				201.0	
Queue Delay		0.0					0.0				0.0	
Total Delay		46.1					51.3				201.0	
LOS		D					D				F	
Approach Delay		46.1					51.3				201.0	
Approach LOS		D					D				F	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 113			
Actuated Cycle Length: 100			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.54			
Intersection Signal Delay: 108.8		Intersection LOS: F	
Intersection Capacity Utilization 79.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Chapel St & Highland Ave & May St



Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Yellow Time (s)	4.0	4.0			2.0				4.0	2.0
All-Red Time (s)	1.0	1.0			1.0				1.0	0.0
Lost Time Adjust (s)		0.0			0.0					
Total Lost Time (s)		5.0			3.0					
Lead/Lag					Lead				Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0
Recall Mode	Min	Min			None				None	None
Walk Time (s)										7.0
Flash Dont Walk (s)										11.0
Pedestrian Calls (#/hr)										18
Act Effct Green (s)		20.2	42.5		8.0	30.2				
Actuated g/C Ratio		0.20	0.42		0.08	0.30				
v/c Ratio		1.54	0.97		0.30	0.52				
Control Delay		293.3	61.3		54.1	22.2				
Queue Delay		0.0	0.0		0.0	0.0				
Total Delay		293.3	61.3		54.1	22.2				
LOS		F	E		D	C				
Approach Delay		147.0				25.8				
Approach LOS		F				C				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR	NEL2	NEL
Lane Group Flow (vph)	282	269	269	335	572	36	280
v/c Ratio	0.73	0.78	1.30	1.54	0.97	0.30	0.52
Control Delay	46.1	51.3	201.0	293.3	61.3	54.1	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	51.3	201.0	293.3	61.3	54.1	22.2
Queue Length 50th (ft)	142	136	~196	~271	304	20	74
Queue Length 95th (ft)	#264	#298	#347	#475	#691	33	166
Internal Link Dist (ft)	373	843	865	564			500
Turn Bay Length (ft)					120		
Base Capacity (vph)	387	355	207	218	591	122	528
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.76	1.30	1.54	0.97	0.30	0.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

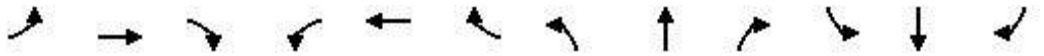
Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Future Volume (vph)	61	104	28	23	10	42	129	24	4	19	155	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12	10	12	12	12	16	12
Total Lost time (s)		5.0					5.0				5.0	
Lane Util. Factor		1.00					1.00				1.00	
Frpb, ped/bikes		0.99					1.00				0.99	
Flpb, ped/bikes		1.00					1.00				1.00	
Frt		0.96					0.98				0.98	
Flt Protected		0.99					0.98				1.00	
Satd. Flow (prot)		1633					1539				1862	
Flt Permitted		0.80					0.74				0.55	
Satd. Flow (perm)		1328					1161				1027	
Peak-hour factor, PHF	0.81	0.81	0.63	0.66	0.56	0.63	0.84	0.79	1.00	0.85	0.76	0.64
Adj. Flow (vph)	75	128	44	35	18	67	154	30	4	22	204	39
RTOR Reduction (vph)	0	0	0	0	0	0	4	0	0	0	0	0
Lane Group Flow (vph)	0	282	0	0	0	0	265	0	0	0	269	0
Confl. Peds. (#/hr)	4		5	3	3	5		4	3	12		13
Confl. Bikes (#/hr)			1	1				1				2
Heavy Vehicles (%)	2%	1%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Actuated Green, G (s)		29.4					29.4				20.2	
Effective Green, g (s)		29.4					29.4				20.2	
Actuated g/C Ratio		0.29					0.29				0.20	
Clearance Time (s)		5.0					5.0				5.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		385					337				204	
v/s Ratio Prot												
v/s Ratio Perm		0.21					c0.23				0.26	
v/c Ratio		0.73					0.79				1.32	
Uniform Delay, d1		32.4					33.0				40.5	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		7.0					11.5				173.6	
Delay (s)		39.4					44.6				214.1	
Level of Service		D					D				F	
Approach Delay (s)		39.4					44.6				214.1	
Approach LOS		D					D				F	

Intersection Summary			
HCM 2000 Control Delay	113.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	101.2	Sum of lost time (s)	23.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	41	215	355	162	18	182	19	10
Future Volume (vph)	41	218	369	162	18	196	19	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	10	11	11	11
Total Lost time (s)		5.0	5.0		3.0	3.0		
Lane Util. Factor		1.00	1.00		1.00	1.00		
Frpb, ped/bikes		1.00	1.00		1.00	0.99		
Flpb, ped/bikes		1.00	1.00		1.00	1.00		
Frt		1.00	0.85		1.00	0.98		
Flt Protected		0.99	1.00		0.95	0.96		
Satd. Flow (prot)		1566	1391		1516	1510		
Flt Permitted		0.68	1.00		0.95	0.96		
Satd. Flow (perm)		1080	1391		1516	1510		
Peak-hour factor, PHF	0.62	0.81	0.96	0.86	0.50	0.83	0.85	0.45
Adj. Flow (vph)	66	269	384	188	36	236	22	22
RTOR Reduction (vph)	0	0	0	0	0	84	0	0
Lane Group Flow (vph)	0	335	572	0	36	196	0	0
Confl. Peds. (#/hr)	13		3	12	12	4	13	5
Confl. Bikes (#/hr)			1	1				
Heavy Vehicles (%)	3%	0%	1%	1%	0%	1%	0%	11%
Turn Type	Perm	NA	custom		Prot	Prot		
Protected Phases		2	2 3		1	1 3		
Permitted Phases	2							
Actuated Green, G (s)		20.2	42.4		8.0	28.2		
Effective Green, g (s)		20.2	42.4		8.0	28.2		
Actuated g/C Ratio		0.20	0.42		0.08	0.28		
Clearance Time (s)		5.0			3.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		215	582		119	420		
v/s Ratio Prot			c0.41		0.02	c0.13		
v/s Ratio Perm		c0.31						
v/c Ratio		1.56	0.98		0.30	0.47		
Uniform Delay, d1		40.5	29.0		44.0	30.3		
Progression Factor		1.00	1.00		1.00	1.00		
Incremental Delay, d2		272.7	32.7		1.4	0.8		
Delay (s)		313.2	61.8		45.4	31.1		
Level of Service		F	E		D	C		
Approach Delay (s)		154.6				32.7		
Approach LOS		F				C		

Intersection Summary



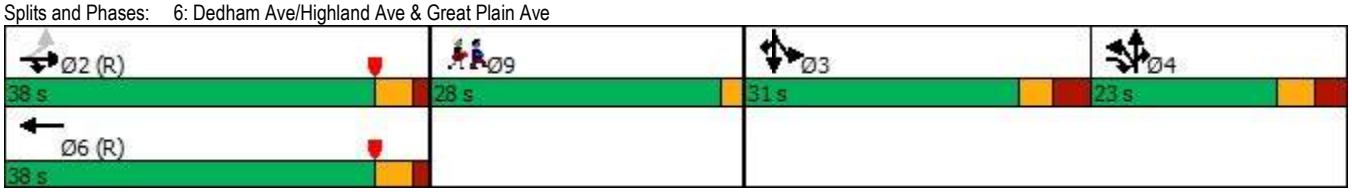
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Future Volume (vph)	34	264	290	0	320	74	192	106	72	80	189	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	10	10	10	10	10	10	10	10	12
Storage Length (ft)	0		0	0		0	0		35	0		90
Storage Lanes	0		1	0		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		0.99				0.99	
Frt			0.850		0.972				0.850			0.850
Flt Protected		0.993					0.950				0.984	
Satd. Flow (prot)	0	1569	1391	0	2886	0	1486	1596	1357	0	1560	1454
Flt Permitted		0.777					0.950				0.984	
Satd. Flow (perm)	0	1224	1391	0	2886	0	1468	1596	1357	0	1546	1454
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									95			95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		238			434			312			945	
Travel Time (s)		5.4			9.9			7.1			21.5	
Confl. Peds. (#/hr)	27		39	39		27	9		14	14		9
Confl. Bikes (#/hr)			3			2			1			
Peak Hour Factor	0.63	0.82	0.93	0.25	0.85	0.87	0.86	0.77	0.80	0.74	0.84	0.84
Heavy Vehicles (%)	7%	0%	1%	0%	1%	0%	2%	0%	0%	0%	1%	0%
Adj. Flow (vph)	54	322	312	0	376	85	223	138	90	108	225	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	376	312	0	461	0	223	138	90	0	333	76
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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1		2		1	2	1	1	2	1
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20		100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20		6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Detector Phase	2	2	2 4		6		4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0			10.0		11.5	11.5	11.5	11.5	11.5	11.5
Total Split (s)	38.0	38.0			38.0		23.0	23.0	23.0	31.0	31.0	31.0
Total Split (%)	31.7%	31.7%			31.7%		19.2%	19.2%	19.2%	25.8%	25.8%	25.8%
Maximum Green (s)	33.0	33.0			33.0		16.5	16.5	16.5	24.5	24.5	24.5

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	26.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5			1.5		3.0	3.0	3.0	3.5	3.5	3.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Lead/Lag							Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Min	C-Min			C-Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		34.3	59.7		34.3		18.9	18.9	18.9		27.2	27.2
Actuated g/C Ratio		0.29	0.50		0.29		0.16	0.16	0.16		0.23	0.23
v/c Ratio		1.08	0.45		0.56		0.96	0.55	0.31		0.94	0.19
Control Delay		91.7	15.5		40.0		100.3	57.3	11.4		82.0	5.9
Queue Delay		9.2	2.1		14.4		0.0	0.0	0.0		0.0	0.0
Total Delay		100.9	17.6		54.4		100.3	57.3	11.4		82.0	5.9
LOS		F	B		D		F	E	B		F	A
Approach Delay		63.1			54.4			69.4			67.9	
Approach LOS		E			D			E			E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 63.5		Intersection LOS: E	
Intersection Capacity Utilization 77.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Dedham Ave/Highland Ave & Great Plain Ave



Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	44
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

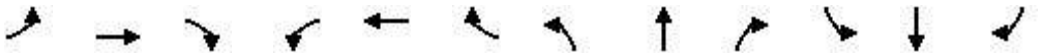
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	376	312	461	223	138	90	333	76
v/c Ratio	1.08	0.45	0.56	0.96	0.55	0.31	0.94	0.19
Control Delay	91.7	15.5	40.0	100.3	57.3	11.4	82.0	5.9
Queue Delay	9.2	2.1	14.4	0.0	0.0	0.0	0.0	0.0
Total Delay	100.9	17.6	54.4	100.3	57.3	11.4	82.0	5.9
Queue Length 50th (ft)	~320	65	162	~195	102	0	~262	0
Queue Length 95th (ft)	#448	m140	204	#332	144	32	#405	22
Internal Link Dist (ft)	158		354		232		865	
Turn Bay Length (ft)						35		90
Base Capacity (vph)	349	691	824	233	250	293	354	403
Starvation Cap Reductn	26	244	0	0	0	0	0	0
Spillback Cap Reductn	0	0	345	0	0	0	0	11
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.70	0.96	0.96	0.55	0.31	0.94	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Future Volume (vph)	34	264	290	0	320	74	192	106	72	80	189	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	11	10	10	10	10	10	10	10	10	12
Total Lost time (s)		5.0	5.0		5.0		6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00		1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)		1564	1391		2887		1486	1596	1357		1560	1454
Flt Permitted		0.78	1.00		1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (perm)		1223	1391		2887		1486	1596	1357		1560	1454
Peak-hour factor, PHF	0.63	0.82	0.93	0.25	0.85	0.87	0.86	0.77	0.80	0.74	0.84	0.84
Adj. Flow (vph)	54	322	312	0	376	85	223	138	90	108	225	76
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	76	0	0	59
Lane Group Flow (vph)	0	376	312	0	461	0	223	138	14	0	333	17
Confl. Peds. (#/hr)	27		39	39		27	9		14	14		9
Confl. Bikes (#/hr)			3			2			1			
Heavy Vehicles (%)	7%	0%	1%	0%	1%	0%	2%	0%	0%	0%	1%	0%
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Actuated Green, G (s)		33.9	59.3		33.9		18.9	18.9	18.9		27.2	27.2
Effective Green, g (s)		33.9	52.8		33.9		18.9	18.9	18.9		27.2	27.2
Actuated g/C Ratio		0.28	0.44		0.28		0.16	0.16	0.16		0.23	0.23
Clearance Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		2.0			2.0		2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		345	612		815		234	251	213		353	329
v/s Ratio Prot			0.22		0.16		c0.15	0.09	0.01		c0.21	0.01
v/s Ratio Perm		c0.31										
v/c Ratio		1.09	0.51		0.57		0.95	0.55	0.07		0.94	0.05
Uniform Delay, d1		43.0	24.3		36.8		50.1	46.6	43.0		45.6	36.3
Progression Factor		0.59	0.65		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		68.1	0.2		2.8		45.2	1.3	0.0		33.0	0.0
Delay (s)		93.3	15.9		39.6		95.3	47.9	43.1		78.6	36.3
Level of Service		F	B		D		F	D	D		E	D
Approach Delay (s)		58.2			39.6			70.4			70.8	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	59.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

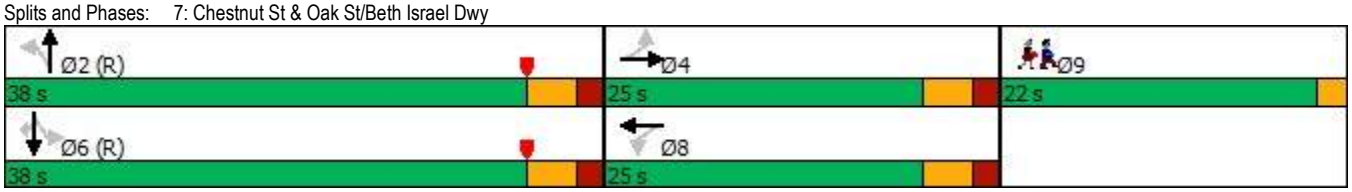
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Future Volume (vph)	57	1	128	6	2	9	102	377	12	4	509	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	8	8	11	11	11	9	9	12	12	9	9
Storage Length (ft)	0		0	0		0	80		0	0		150
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.907			0.929			0.995				0.850
Flt Protected		0.985			0.982		0.950					
Satd. Flow (prot)	0	1298	0	0	1478	0	1433	1501	0	0	1509	1283
Flt Permitted		0.899			0.899		0.325				0.998	
Satd. Flow (perm)	0	1185	0	0	1353	0	490	1501	0	0	1506	1283
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								2				74
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			314			227			439	
Travel Time (s)		13.8			7.1			5.2			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	1	139	7	2	10	111	410	13	4	553	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	202	0	0	19	0	111	423	0	0	557	85
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			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.19	1.19	1.19	1.30	1.30	1.14	1.14	1.30	1.30
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	25.0	25.0		25.0	25.0		38.0	38.0		38.0	38.0	38.0
Total Split (%)	29.4%	29.4%		29.4%	29.4%		44.7%	44.7%		44.7%	44.7%	44.7%
Maximum Green (s)	20.0	20.0		20.0	20.0		33.0	33.0		33.0	33.0	33.0
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0			5.0	5.0

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	22.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		20.0			20.0		46.2	46.2			46.2	46.2
Actuated g/C Ratio		0.24			0.24		0.54	0.54			0.54	0.54
v/c Ratio		0.73			0.06		0.42	0.52			0.68	0.12
Control Delay		47.1			26.0		23.1	18.7			28.4	13.7
Queue Delay		0.0			0.0		0.0	0.0			0.6	0.0
Total Delay		47.1			26.0		23.1	18.7			29.1	13.7
LOS		D			C		C	B			C	B
Approach Delay		47.1			26.0			19.6			27.0	
Approach LOS		D			C			B			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 27.1		Intersection LOS: C	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Chestnut St & Oak St/Beth Israel Dwy

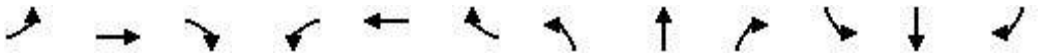


Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lane Group	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	202	19	111	423	557	85
v/c Ratio	0.73	0.06	0.42	0.52	0.68	0.12
Control Delay	47.1	26.0	23.1	18.7	28.4	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.6	0.0
Total Delay	47.1	26.0	23.1	18.7	29.1	13.7
Queue Length 50th (ft)	100	8	24	98	83	0
Queue Length 95th (ft)	#202	25	#120	300	m#435	m54
Internal Link Dist (ft)	526	234		147	359	
Turn Bay Length (ft)			80			150
Base Capacity (vph)	278	318	266	816	818	731
Starvation Cap Reductn	0	0	0	0	68	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.06	0.42	0.52	0.74	0.12

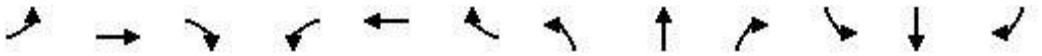
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Future Volume (vph)	57	1	128	6	2	9	102	377	12	4	509	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	11	11	11	9	9	12	12	9	9
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	1.00
Frt		0.91			0.93		1.00	1.00			1.00	0.85
Flt Protected		0.98			0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1298			1478		1433	1502			1508	1282
Flt Permitted		0.90			0.90		0.32	1.00			1.00	1.00
Satd. Flow (perm)		1185			1353		490	1502			1505	1282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	1	139	7	2	10	111	410	13	4	553	85
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	35
Lane Group Flow (vph)	0	202	0	0	19	0	111	422	0	0	557	50
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		20.0			20.0		45.0	45.0			45.0	45.0
Effective Green, g (s)		20.0			20.0		45.0	45.0			45.0	45.0
Actuated g/C Ratio		0.24			0.24		0.53	0.53			0.53	0.53
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		278			318		259	795			796	678
v/s Ratio Prot								0.28				
v/s Ratio Perm		c0.17			0.01		0.23				c0.37	0.04
v/c Ratio		0.73			0.06		0.43	0.53			0.70	0.07
Uniform Delay, d1		30.0			25.2		12.2	13.1			15.0	9.8
Progression Factor		1.00			1.00		1.00	1.00			1.36	2.53
Incremental Delay, d2		15.3			0.4		5.1	2.5			3.9	0.2
Delay (s)		45.3			25.6		17.3	15.6			24.2	25.0
Level of Service		D			C		B	B			C	C
Approach Delay (s)		45.3			25.6			16.0			24.3	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



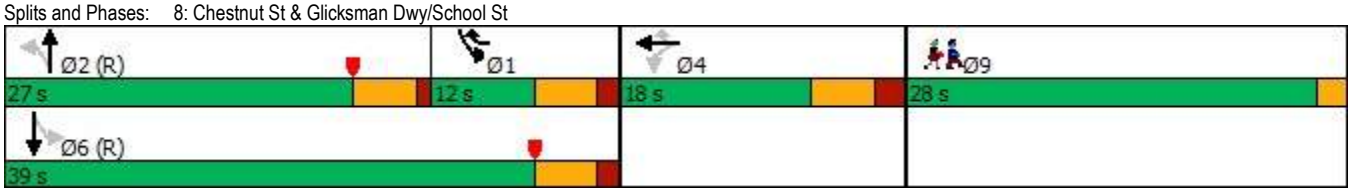
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Future Volume (vph)	0	0	0	179	6	70	6	356	215	63	451	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	9	13	9	12	12	9	12	12
Storage Length (ft)	0		0	0		150	40		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			70			70			100		
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						0.850		0.943			0.999	
Flt Protected					0.954		0.950			0.950		
Satd. Flow (prot)	0	0	0	0	1439	1473	1433	1581	0	1433	1675	0
Flt Permitted					0.954		0.384			0.243		
Satd. Flow (perm)	0	0	0	0	1439	1473	579	1581	0	367	1675	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						76		35				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		162			420			439			782	
Travel Time (s)		3.7			9.5			10.0			17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	195	7	76	7	387	234	68	490	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	202	76	7	621	0	68	493	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.30	1.30	1.10	1.30	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2		1	2	
Detector Template				Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)				20	100	20	20	100		20	100	
Trailing Detector (ft)				0	0	0	0	0		0	0	
Detector 1 Position(ft)				0	0	0	0	0		0	0	
Detector 1 Size(ft)				20	6	20	20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Detector Phase				4	4	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)				6.0	6.0	6.0	2.0	2.0		6.0	10.0	
Minimum Split (s)				12.0	12.0	11.5	7.0	7.0		11.5	15.5	
Total Split (s)				18.0	18.0	12.0	27.0	27.0		12.0	39.0	
Total Split (%)				21.2%	21.2%	14.1%	31.8%	31.8%		14.1%	45.9%	
Maximum Green (s)				12.0	12.0	6.5	22.0	22.0		6.5	33.5	
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)				2.0	2.0	1.5	1.0	1.0		1.5	1.5	
Lost Time Adjust (s)					0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	33%
Maximum Green (s)	26.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag						Lag	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode				None	None	None	C-Min	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					12.0	21.9	41.4	41.4		51.5	50.3	
Actuated g/C Ratio					0.14	0.26	0.49	0.49		0.61	0.59	
v/c Ratio					1.00	0.17	0.02	0.79		0.23	0.50	
Control Delay					101.8	7.0	12.5	28.3		18.9	16.7	
Queue Delay					35.0	0.0	0.0	0.0		0.0	0.1	
Total Delay					136.7	7.0	12.5	28.3		18.9	16.8	
LOS					F	A	B	C		B	B	
Approach Delay					101.3			28.1			17.0	
Approach LOS					F			C			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 9 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 37.7		Intersection LOS: D	
Intersection Capacity Utilization 64.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Chestnut St & Glicksman Dwy/School St

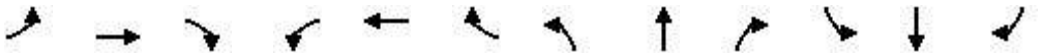


Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	202	76	7	621	68	493
v/c Ratio	1.00	0.17	0.02	0.79	0.23	0.50
Control Delay	101.8	7.0	12.5	28.3	18.9	16.7
Queue Delay	35.0	0.0	0.0	0.0	0.0	0.1
Total Delay	136.7	7.0	12.5	28.3	18.9	16.8
Queue Length 50th (ft)	109	0	1	219	9	85
Queue Length 95th (ft)	#245	30	m4	#632	49	343
Internal Link Dist (ft)	340			359		702
Turn Bay Length (ft)		150	40		115	
Base Capacity (vph)	203	403	281	788	305	991
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	36	0	0	0	0	32
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.21	0.19	0.02	0.79	0.22	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Future Volume (vph)	0	0	0	179	6	70	6	356	215	63	451	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	9	9	13	9	12	12	9	12	12
Total Lost time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frt					1.00	0.85	1.00	0.94		1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1439	1472	1433	1582		1433	1675	
Flt Permitted					0.95	1.00	0.38	1.00		0.24	1.00	
Satd. Flow (perm)					1439	1472	579	1582		366	1675	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	195	7	76	7	387	234	68	490	3
RTOR Reduction (vph)	0	0	0	0	0	61	0	19	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	202	15	7	602	0	68	493	0
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Actuated Green, G (s)					12.0	17.0	39.1	39.1		49.1	49.1	
Effective Green, g (s)					12.0	17.0	39.1	39.1		49.1	49.1	
Actuated g/C Ratio					0.14	0.20	0.46	0.46		0.58	0.58	
Clearance Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Vehicle Extension (s)					3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)					203	389	266	727		274	967	
v/s Ratio Prot						0.00		c0.38		0.01	c0.29	
v/s Ratio Perm					0.14	0.01	0.01			0.13		
v/c Ratio					1.00	0.04	0.03	0.83		0.25	0.51	
Uniform Delay, d1					36.5	27.4	12.5	20.0		19.9	10.7	
Progression Factor					1.00	1.00	0.56	0.65		1.00	1.00	
Incremental Delay, d2					61.4	0.0	0.2	9.8		0.5	1.9	
Delay (s)					97.9	27.5	7.2	22.9		20.4	12.7	
Level of Service					F	C	A	C		C	B	
Approach Delay (s)		0.0			78.6			22.7			13.6	
Approach LOS		A			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	89	594	589	27	14	217
Future Volume (vph)	89	601	594	27	14	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.989		0.878	
Flt Protected		0.992			0.995	
Satd. Flow (prot)	0	2978	2972	0	1433	0
Flt Permitted		0.992			0.995	
Satd. Flow (perm)	0	2978	2972	0	1433	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		180	394		416	
Travel Time (s)		4.1	9.0		9.5	
Confl. Peds. (#/hr)	23			23	1	23
Peak Hour Factor	0.79	0.98	0.92	0.52	0.54	0.90
Heavy Vehicles (%)	1%	1%	1%	0%	8%	0%
Adj. Flow (vph)	113	613	646	52	26	241
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	726	698	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.25	1.25	1.25	1.19	1.19
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			

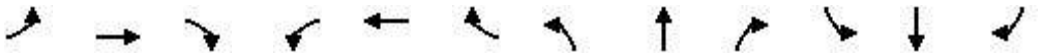
Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	594	589	27	14	217
Future Vol, veh/h	89	601	594	27	14	217
Conflicting Peds, #/hr	23	0	0	23	1	23
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	79	98	92	52	54	90
Heavy Vehicles, %	1	1	1	0	8	0
Mvmt Flow	113	613	646	52	26	241

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	721	0	-	0	1229	395
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	534	-
Critical Hdwy	4.12	-	-	-	6.96	6.9
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	2.21	-	-	-	3.58	3.3
Pot Cap-1 Maneuver	883	-	-	-	162	610
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	535	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	865	-	-	-	125	587
Mov Cap-2 Maneuver	-	-	-	-	125	-
Stage 1	-	-	-	-	347	-
Stage 2	-	-	-	-	524	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	25.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	865	-	-	-	432
HCM Lane V/C Ratio	0.13	-	-	-	0.618
HCM Control Delay (s)	9.8	0.7	-	-	25.9
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	4.1



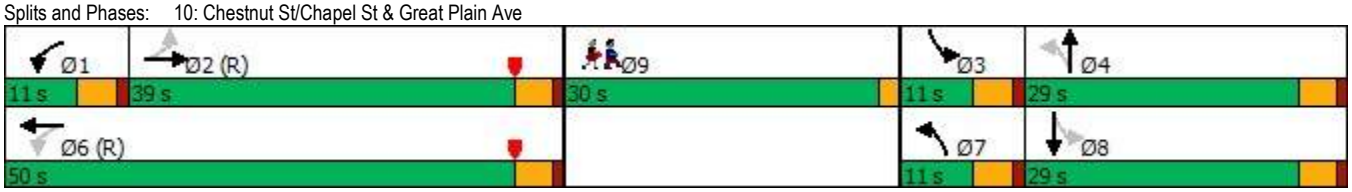
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	501	68	104	442	29	95	178	62	24	305	78
Future Volume (vph)	44	502	69	106	442	29	96	187	63	24	316	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	175		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99		0.99	0.99		0.99	0.99	
Frt		0.982			0.991			0.963			0.965	
Flt Protected		0.996			0.991		0.950			0.950		
Satd. Flow (prot)	0	2899	0	0	2936	0	1501	1568	0	1516	1562	0
Flt Permitted		0.762			0.603		0.112			0.450		
Satd. Flow (perm)	0	2216	0	0	1780	0	175	1568	0	713	1562	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			238			782			424	
Travel Time (s)		9.0			5.4			17.8			9.6	
Confl. Peds. (#/hr)	18		48	48		18	29		13	13		29
Confl. Bikes (#/hr)												4
Peak Hour Factor	0.80	0.96	0.86	0.84	0.88	0.72	0.80	0.84	0.88	0.69	0.87	0.74
Heavy Vehicles (%)	0%	1%	2%	1%	1%	4%	1%	1%	0%	0%	1%	0%
Adj. Flow (vph)	55	523	80	126	502	40	120	223	72	35	363	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	658	0	0	668	0	120	295	0	35	472	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.19	1.19	1.25	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	39.0	39.0		9.5	50.0		11.0	29.0		11.0	29.0	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	29.0		11.0	29.0	
Total Split (%)	32.5%	32.5%		9.2%	41.7%		9.2%	24.2%		9.2%	24.2%	
Maximum Green (s)	34.5	34.5		6.5	45.5		6.5	24.5		6.5	24.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	30.0
Total Split (%)	25%
Maximum Green (s)	28.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		45.5			45.5		41.9	36.2		37.0	29.5	
Actuated g/C Ratio		0.38			0.38		0.35	0.30		0.31	0.25	
v/c Ratio		0.78			0.99		0.71	0.62		0.13	1.23	
Control Delay		40.8			48.7		53.7	47.5		29.9	164.2	
Queue Delay		2.6			36.4		0.0	1.1		0.1	0.0	
Total Delay		43.4			85.1		53.7	48.6		30.0	164.2	
LOS		D			F		D	D		C	F	
Approach Delay		43.4			85.1			50.1			154.9	
Approach LOS		D			F			D			F	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 11 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.23			
Intersection Signal Delay: 82.2		Intersection LOS: F	
Intersection Capacity Utilization 82.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 10: Chestnut St/Chapel St & Great Plain Ave



Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	54
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

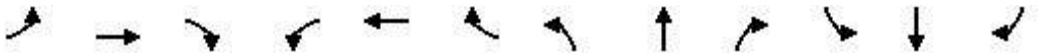
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	658	668	120	295	35	472
v/c Ratio	0.78	0.99	0.71	0.62	0.13	1.23
Control Delay	40.8	48.7	53.7	47.5	29.9	164.2
Queue Delay	2.6	36.4	0.0	1.1	0.1	0.0
Total Delay	43.4	85.1	53.7	48.6	30.0	164.2
Queue Length 50th (ft)	234	288	68	221	19	~504
Queue Length 95th (ft)	313	m#372	#128	#351	33	#679
Internal Link Dist (ft)	314	158		702		344
Turn Bay Length (ft)			175		100	
Base Capacity (vph)	840	674	170	472	272	384
Starvation Cap Reductn	0	81	0	0	0	0
Spillback Cap Reductn	92	0	0	53	24	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.88	1.13	0.71	0.70	0.14	1.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

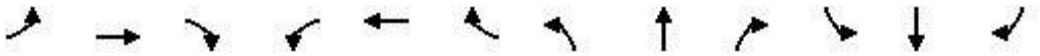
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	501	68	104	442	29	95	178	62	24	305	78
Future Volume (vph)	44	502	69	106	442	29	96	187	63	24	316	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	11	11	10	11	11
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.96		1.00	0.97	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2902			2922		1500	1571		1511	1566	
Flt Permitted		0.76			0.60		0.11	1.00		0.45	1.00	
Satd. Flow (perm)		2221			1777		176	1571		715	1566	
Peak-hour factor, PHF	0.80	0.96	0.86	0.84	0.88	0.72	0.80	0.84	0.88	0.69	0.87	0.74
Adj. Flow (vph)	55	523	80	126	502	40	120	223	72	35	363	109
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	658	0	0	668	0	120	295	0	35	472	0
Confl. Peds. (#/hr)	18		48	48		18	29		13	13		29
Confl. Bikes (#/hr)												4
Heavy Vehicles (%)	0%	1%	2%	1%	1%	4%	1%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		43.3			43.3		45.7	36.2		36.3	31.3	
Effective Green, g (s)		43.3			43.3		45.7	36.2		36.3	31.3	
Actuated g/C Ratio		0.36			0.36		0.38	0.30		0.30	0.26	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		801			641		176	473		249	408	
v/s Ratio Prot							c0.06	0.19		0.01	c0.30	
v/s Ratio Perm		0.30			c0.38		0.20			0.04		
v/c Ratio		0.82			1.04		0.68	0.62		0.14	1.16	
Uniform Delay, d1		34.8			38.4		29.5	36.0		30.1	44.4	
Progression Factor		1.00			0.49		1.00	1.00		1.00	1.00	
Incremental Delay, d2		9.3			42.5		10.4	2.6		0.3	94.8	
Delay (s)		44.1			61.2		39.9	38.6		30.4	139.2	
Level of Service		D			E		D	D		C	F	
Approach Delay (s)		44.1			61.2			39.0			131.7	
Approach LOS		D			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	68.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	109	9	209	120	7	14	4	105	7	0	2
Future Volume (vph)	3	109	9	209	120	7	14	4	105	7	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	14	12	12	13	12	12	10	12
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
Ped Bike Factor												
Frt		0.987			0.997			0.898			0.958	
Flt Protected		0.997			0.969			0.992			0.967	
Satd. Flow (prot)	0	1724	0	0	1751	0	0	1533	0	0	1479	0
Flt Permitted		0.997			0.969			0.992			0.967	
Satd. Flow (perm)	0	1724	0	0	1751	0	0	1533	0	0	1479	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		521			453			566			491	
Travel Time (s)		11.8			10.3			12.9			11.2	
Confl. Peds. (#/hr)	6		4	4		6	5		3	3		5
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.38	0.95	0.67	0.80	0.85	0.75	0.54	0.33	0.88	0.38	0.92	0.25
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	25%	1%	0%	0%	0%
Adj. Flow (vph)	8	115	13	261	141	9	26	12	119	18	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	136	0	0	411	0	0	157	0	0	26	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	1.14	1.10	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	109	9	209	120	7	14	4	105	7	0	2
Future Vol, veh/h	3	109	9	209	120	7	14	4	105	7	0	2
Conflicting Peds, #/hr	6	0	4	4	0	6	5	0	3	3	0	5
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	38	95	67	80	85	75	54	33	88	38	92	25
Heavy Vehicles, %	0	1	0	1	0	0	0	25	1	0	0	0
Mvmt Flow	8	115	13	261	141	9	26	12	119	18	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	156	0	0	132	0	0	819	820	129	880	822	157
Stage 1	-	-	-	-	-	-	142	142	-	674	674	-
Stage 2	-	-	-	-	-	-	677	678	-	206	148	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.1	6.75	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.75	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.75	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.5	4.225	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1436	-	-	1459	-	-	297	285	924	270	311	894
Stage 1	-	-	-	-	-	-	866	737	-	448	457	-
Stage 2	-	-	-	-	-	-	446	418	-	801	779	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1429	-	-	1453	-	-	247	226	917	189	246	885
Mov Cap-2 Maneuver	-	-	-	-	-	-	247	226	-	189	246	-
Stage 1	-	-	-	-	-	-	857	730	-	443	366	-
Stage 2	-	-	-	-	-	-	354	334	-	679	771	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	5.1	14.3	21.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	545	1429	-	-	1453	-	-	248
HCM Lane V/C Ratio	0.289	0.006	-	-	0.18	-	-	0.107
HCM Control Delay (s)	14.3	7.5	0	-	8	0	-	21.2
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.7	-	-	0.4

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	74	93	94	60	88	189
Future Volume (vph)	74	93	94	65	91	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.936		0.917	
Flt Protected		0.981			0.981	
Satd. Flow (prot)	0	1678	1423	0	1631	0
Flt Permitted		0.981			0.981	
Satd. Flow (perm)	0	1678	1423	0	1631	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		525	1036		802	
Travel Time (s)		11.9	23.5		18.2	
Confl. Peds. (#/hr)	12			12	2	1
Peak Hour Factor	0.84	0.66	0.79	0.61	0.65	0.84
Heavy Vehicles (%)	0%	0%	4%	6%	0%	1%
Adj. Flow (vph)	88	141	119	107	140	225
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	229	226	0	365	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.25	1.25	1.05	1.05
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.5%		ICU Level of Service A	
Analysis Period (min) 15			

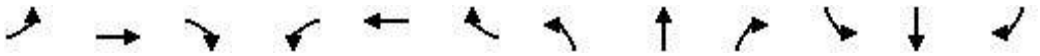
Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	93	94	60	88	189
Future Vol, veh/h	74	93	94	65	91	189
Conflicting Peds, #/hr	12	0	0	12	2	1
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	84	66	79	61	65	84
Heavy Vehicles, %	0	0	4	6	0	1
Mvmt Flow	88	141	119	107	140	225

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	238	0	-	0	504	186
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	319	-
Critical Hdwy	4.1	-	-	-	6.4	6.21
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.309
Pot Cap-1 Maneuver	1341	-	-	-	531	859
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1323	-	-	-	480	847
Mov Cap-2 Maneuver	-	-	-	-	480	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	731	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	17.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1323	-	-	-	655
HCM Lane V/C Ratio	0.067	-	-	-	0.557
HCM Control Delay (s)	7.9	0	-	-	17.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	3.4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	267	20	137	312	13	13	63	86	13	92	34
Future Volume (vph)	104	267	20	148	312	13	13	63	93	13	93	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	12	12	14	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.992			0.995			0.933			0.963	
Flt Protected		0.975			0.986			0.995			0.994	
Satd. Flow (prot)	0	1482	0	0	1789	0	0	1619	0	0	1691	0
Flt Permitted		0.975			0.986			0.995			0.994	
Satd. Flow (perm)	0	1482	0	0	1789	0	0	1619	0	0	1691	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		459			455			883			496	
Travel Time (s)		10.4			10.3			20.1			11.3	
Confl. Peds. (#/hr)	11		8	8		11	3		4	4		3
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.26	0.77	0.45	0.97	0.85	0.60	0.60	0.75	0.89	0.60	0.87	0.71
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%
Adj. Flow (vph)	400	347	44	153	367	22	22	84	104	22	107	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	791	0	0	542	0	0	210	0	0	177	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	1.14	1.30	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.2%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3

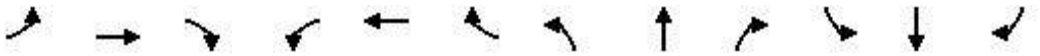
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	104	267	20	137	312	13	13	63	86	13	92	34
Future Vol, veh/h	104	267	20	148	312	13	13	63	93	13	93	34
Conflicting Peds, #/hr	11	0	8	8	0	11	3	0	4	4	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	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	26	77	45	97	85	60	60	75	89	60	87	71
Heavy Vehicles, %	0	1	0	0	0	0	0	2	1	0	0	0
Mvmt Flow	400	347	44	153	367	22	22	84	104	22	107	48

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	400	0	0	399	0	0	1942	1883	381	1962	1894	392
Stage 1	-	-	-	-	-	-	1177	1177	-	695	695	-
Stage 2	-	-	-	-	-	-	765	706	-	1267	1199	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.52	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4.018	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1170	-	-	1171	-	-	50	~ 71	668	48	~ 71	661
Stage 1	-	-	-	-	-	-	235	265	-	436	447	-
Stage 2	-	-	-	-	-	-	399	439	-	209	261	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1157	-	-	1161	-	-	-	~ 32	660	-	~ 32	652
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 32	-	-	~ 32	-
Stage 1	-	-	-	-	-	-	129	146	-	239	367	-
Stage 2	-	-	-	-	-	-	217	361	-	41	144	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.9	2.4		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1157	-	-	1161	-	-	-
HCM Lane V/C Ratio	-	0.346	-	-	0.131	-	-	-
HCM Control Delay (s)	-	9.7	0	-	8.6	0	-	-
HCM Lane LOS	-	A	A	-	A	A	-	-
HCM 95th %tile Q(veh)	-	1.6	-	-	0.5	-	-	-

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	168	65	30	150	39	34	71	23	19	43	12
Future Volume (vph)	13	178	66	30	167	39	34	71	23	19	43	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	15	12	12	13	12
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
Ped Bike Factor												
Frt		0.963			0.979			0.981			0.978	
Flt Protected		0.997			0.992			0.987			0.987	
Satd. Flow (prot)	0	1631	0	0	1523	0	0	1807	0	0	1632	0
Flt Permitted		0.997			0.992			0.987			0.987	
Satd. Flow (perm)	0	1631	0	0	1523	0	0	1807	0	0	1632	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			695			637			578	
Travel Time (s)		9.3			15.8			14.5			13.1	
Confl. Peds. (#/hr)	1		6	6		1			3	3		
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.60	0.79	0.70	0.68	0.85	0.88	0.71	0.64	0.88	0.71	0.70	0.69
Heavy Vehicles (%)	0%	1%	0%	4%	1%	3%	3%	0%	0%	12%	0%	9%
Adj. Flow (vph)	22	225	94	44	196	44	48	111	26	27	61	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	341	0	0	284	0	0	185	0	0	105	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	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.01	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	168	65	30	150	39	34	71	23	19	43	12
Future Vol, veh/h	13	178	66	30	167	39	34	71	23	19	43	12
Conflicting Peds, #/hr	1	0	6	6	0	1	0	0	3	3	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	60	79	70	68	85	88	71	64	88	71	70	69
Heavy Vehicles, %	0	1	0	4	1	3	3	0	0	12	0	9
Mvmt Flow	22	225	94	44	196	44	48	111	26	27	61	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	241	0	0	325	0	0	667	651	281	695	676	219
Stage 1	-	-	-	-	-	-	322	322	-	307	307	-
Stage 2	-	-	-	-	-	-	345	329	-	388	369	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.13	6.5	6.2	7.22	6.5	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	6.22	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	6.22	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.527	4	3.3	3.608	4	3.381
Pot Cap-1 Maneuver	1337	-	-	1224	-	-	371	390	763	344	378	803
Stage 1	-	-	-	-	-	-	688	655	-	682	665	-
Stage 2	-	-	-	-	-	-	668	650	-	616	624	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1336	-	-	1215	-	-	298	363	756	241	352	802
Mov Cap-2 Maneuver	-	-	-	-	-	-	298	363	-	241	352	-
Stage 1	-	-	-	-	-	-	669	637	-	668	636	-
Stage 2	-	-	-	-	-	-	566	622	-	480	607	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.3	24.2	20
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	369	1336	-	-	1215	-	-	344
HCM Lane V/C Ratio	0.501	0.016	-	-	0.036	-	-	0.307
HCM Control Delay (s)	24.2	7.7	0	-	8.1	0	-	20
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	2.7	0	-	-	0.1	-	-	1.3

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	103	73	38	340	604	180
Future Volume (vph)	103	73	38	340	605	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.943				0.969	
Flt Protected	0.972			0.994		
Satd. Flow (prot)	1548	0	0	1700	1644	0
Flt Permitted	0.972			0.994		
Satd. Flow (perm)	1548	0	0	1700	1644	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	756			591	599	
Travel Time (s)	17.2			13.4	13.6	
Confl. Peds. (#/hr)	6		5			5
Peak Hour Factor	0.86	0.83	0.77	0.87	0.87	0.87
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%
Adj. Flow (vph)	120	88	49	391	695	207
Shared Lane Traffic (%)						
Lane Group Flow (vph)	208	0	0	440	902	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 73.1%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	13.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	103	73	38	340	604	180
Future Vol, veh/h	103	73	38	340	605	180
Conflicting Peds, #/hr	6	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	83	77	87	87	87
Heavy Vehicles, %	0	3	0	0	1	0
Mvmt Flow	120	88	49	391	695	207

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1299	804	907	0	-	0
Stage 1	804	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.2	-	-	-
Pot Cap-1 Maneuver	180	381	759	-	-	-
Stage 1	444	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	163	379	755	-	-	-
Mov Cap-2 Maneuver	163	-	-	-	-	-
Stage 1	405	-	-	-	-	-
Stage 2	614	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	99.8	1.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	755	-	215	-	-
HCM Lane V/C Ratio	0.065	-	0.966	-	-
HCM Control Delay (s)	10.1	0	99.8	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.2	-	8.4	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Future Volume (vph)	91	178	29	17	181	251	45	587	21	156	552	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	10	10	12	10	10	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00	0.98	1.00				1.00	
Frt		0.981				0.850		0.994			0.989	
Flt Protected		0.984			0.996		0.950			0.950		
Satd. Flow (prot)	0	3088	0	0	1676	1507	1636	1743	0	1685	1732	0
Flt Permitted		0.701			0.947		0.251			0.148		
Satd. Flow (perm)	0	2198	0	0	1594	1474	432	1743	0	262	1732	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								2				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			193			991			1083	
Travel Time (s)		8.6			4.4			22.5			24.6	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.80	0.93	0.66	0.91	0.73	0.53	0.67	0.66	0.52	0.47	0.81	0.91
Heavy Vehicles (%)	4%	4%	12%	10%	5%	0%	3%	1%	4%	0%	1%	2%
Adj. Flow (vph)	114	191	44	19	248	474	67	889	40	332	681	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	349	0	0	267	474	67	929	0	332	733	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.09	1.09	1.09	1.09	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phase	4	4		8	8	5	6	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	10.0	10.0		6.0	10.0	
Minimum Split (s)	12.5	12.5		12.5	12.5	10.0	17.5	17.5		10.0	17.5	
Total Split (s)	22.0	22.0		22.0	22.0	10.0	30.0	30.0		10.0	40.0	
Total Split (%)	24.4%	24.4%		24.4%	24.4%	11.1%	33.3%	33.3%		11.1%	44.4%	
Maximum Green (s)	15.5	15.5		15.5	15.5	6.0	22.5	22.5		6.0	32.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	31%
Maximum Green (s)	24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	0.0	3.5	3.5		0.0	3.5	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.8			15.8	24.5	23.0	23.0		36.8	33.2	
Actuated g/C Ratio		0.23			0.23	0.36	0.34	0.34		0.54	0.49	
v/c Ratio		0.68			0.72	0.88	0.46	1.56		1.23	0.86	
Control Delay		34.1			39.2	40.2	34.6	284.7		148.6	30.3	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		34.1			39.2	40.2	34.6	284.7		148.6	30.3	
LOS		C			D	D	C	F		F	C	
Approach Delay		34.1			39.9			267.9			67.2	
Approach LOS		C			D			F			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 67.6			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.56			
Intersection Signal Delay: 120.5		Intersection LOS: F	
Intersection Capacity Utilization 80.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Highland Ave & Webster St

Lane Group	Ø9
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

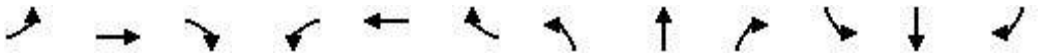
Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	349	267	474	67	929	332	733
v/c Ratio	0.68	0.72	0.88	0.46	1.56	1.23	0.86
Control Delay	34.1	39.2	40.2	34.6	284.7	148.6	30.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	39.2	40.2	34.6	284.7	148.6	30.3
Queue Length 50th (ft)	61	90	135	18	~501	~97	207
Queue Length 95th (ft)	#188	#217	192	57	#731	#119	#609
Internal Link Dist (ft)	299	113			911		1003
Turn Bay Length (ft)				60			
Base Capacity (vph)	515	373	537	146	594	271	851
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.72	0.88	0.46	1.56	1.23	0.86

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Future Volume (vph)	91	178	29	17	181	251	45	587	21	156	552	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	12	10	10	10	10	12	10	10	12
Total Lost time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Lane Util. Factor		0.95			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.98			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3087			1677	1484	1634	1742		1685	1733	
Flt Permitted		0.70			0.95	1.00	0.25	1.00		0.15	1.00	
Satd. Flow (perm)		2198			1594	1484	432	1742		262	1733	
Peak-hour factor, PHF	0.80	0.93	0.66	0.91	0.73	0.53	0.67	0.66	0.52	0.47	0.81	0.91
Adj. Flow (vph)	114	191	44	19	248	474	67	889	40	332	681	52
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	349	0	0	267	474	67	928	0	332	733	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	4%	12%	10%	5%	0%	3%	1%	4%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		15.8			15.8	21.9	23.1	23.1		33.2	33.2	
Effective Green, g (s)		15.8			15.8	21.9	23.1	23.1		33.2	33.2	
Actuated g/C Ratio		0.22			0.22	0.31	0.33	0.33		0.47	0.47	
Clearance Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		491			356	460	141	569		246	814	
v/s Ratio Prot						c0.09		c0.53		c0.12	0.42	
v/s Ratio Perm		0.16			0.17	0.23	0.15			0.52		
v/c Ratio		0.71			0.75	1.03	0.48	1.63		1.35	0.90	
Uniform Delay, d1		25.3			25.6	24.3	18.9	23.7		16.6	17.2	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.0			7.7	50.0	0.9	291.6		181.8	12.8	
Delay (s)		29.3			33.2	74.3	19.8	315.4		198.4	30.0	
Level of Service		C			C	E	B	F		F	C	
Approach Delay (s)		29.3			59.5			295.5			82.5	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	138.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	22.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	73	72	4	54	18	117	426	14	10	477	65
Future Volume (vph)	47	73	80	4	54	18	125	566	14	10	520	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	11	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.950			0.950			0.996			0.983	
Flt Protected		0.987			0.997			0.990			0.999	
Satd. Flow (prot)	0	1592	0	0	1531	0	0	1661	0	0	1672	0
Flt Permitted		0.987			0.997			0.990			0.999	
Satd. Flow (perm)	0	1592	0	0	1531	0	0	1661	0	0	1672	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		695			444			621			443	
Travel Time (s)		15.8			10.1			14.1			10.1	
Confl. Peds. (#/hr)	1								1			
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.60	0.65	0.73	0.50	0.80	0.40	0.69	0.80	0.46	0.75	0.90	0.81
Heavy Vehicles (%)	0%	5%	6%	0%	4%	0%	4%	5%	8%	0%	4%	3%
Adj. Flow (vph)	78	112	110	8	68	45	181	708	30	13	578	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	300	0	0	121	0	0	919	0	0	676	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	1.14	1.10	1.14	1.14	1.19	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 93.9%		ICU Level of Service F	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

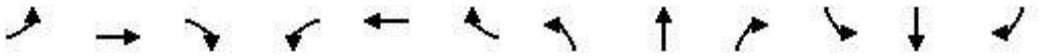
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	73	72	4	54	18	117	426	14	10	477	65
Future Vol, veh/h	47	73	80	4	54	18	125	566	14	10	520	69
Conflicting Peds, #/hr	1	0	0	0	0	0	0	0	1	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	65	73	50	80	40	69	80	46	75	90	81
Heavy Vehicles, %	0	5	6	0	4	0	4	5	8	0	4	3
Mvmt Flow	78	112	110	8	68	45	181	708	30	13	578	85

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1790	1748	621	1844	1775	725	663	0	0	739	0	0
Stage 1	647	647	-	1086	1086	-	-	-	-	-	-	-
Stage 2	1143	1101	-	758	689	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.55	6.26	7.1	6.54	6.2	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.55	-	6.1	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.55	-	6.1	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.045	3.354	3.5	4.036	3.3	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 64	~ 85	480	58	82	428	916	-	-	876	-	-
Stage 1	463	462	-	264	290	-	-	-	-	-	-	-
Stage 2	246	284	-	402	443	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 55	480	-	~ 53	427	916	-	-	875	-	-
Mov Cap-2 Maneuver	-	~ 55	-	-	~ 53	-	-	-	-	-	-	-
Stage 1	307	451	-	175	192	-	-	-	-	-	-	-
Stage 2	95	188	-	227	432	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			2	0.2
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	916	-	-	-	-	875	-	-
HCM Lane V/C Ratio	0.198	-	-	-	-	0.015	-	-
HCM Control Delay (s)	9.9	0	-	-	-	9.2	0	-
HCM Lane LOS	A	A	-	-	-	A	A	-
HCM 95th %tile Q(veh)	0.7	-	-	-	-	0	-	-

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



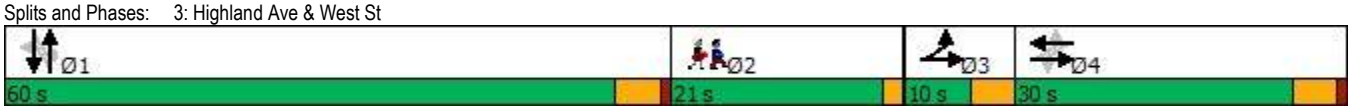
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Future Volume (vph)	200	226	31	24	142	41	20	512	46	19	373	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	9	10	12	12	13	12	12	13	12
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.99	0.99			0.99			0.99	
Frt		0.975			0.968			0.989			0.949	
Flt Protected	0.950			0.950				0.998			0.998	
Satd. Flow (prot)	1462	1481	0	1037	1468	0	0	1657	0	0	1582	0
Flt Permitted	0.385			0.531				0.955			0.953	
Satd. Flow (perm)	591	1481	0	574	1468	0	0	1586	0	0	1509	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		455			303			836			621	
Travel Time (s)		10.3			6.9			19.0			14.1	
Confl. Peds. (#/hr)	2		6	6		2	5		46	46		5
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.89	0.90	0.61	0.53	0.78	0.82	0.64	0.74	0.72	0.63	0.87	0.69
Heavy Vehicles (%)	0%	1%	0%	41%	6%	0%	6%	5%	0%	0%	5%	5%
Adj. Flow (vph)	225	251	51	45	182	50	31	692	64	30	429	281
Shared Lane Traffic (%)												
Lane Group Flow (vph)	225	302	0	45	232	0	0	787	0	0	740	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)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.14	1.30	1.25	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Detector Phase	3	3 4		4	4		1	1		1	1	
Switch Phase												
Minimum Initial (s)	6.0			6.0	6.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.0			11.0	11.0		15.0	15.0		15.0	15.0	
Total Split (s)	10.0			30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	8.3%			24.8%	24.8%		49.6%	49.6%		49.6%	49.6%	
Maximum Green (s)	6.0			25.0	25.0		55.0	55.0		55.0	55.0	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	17%
Maximum Green (s)	19.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0			4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0			1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.0			5.0	5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			4.0	4.0		2.0	2.0		2.0	2.0	
Recall Mode	None			None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	28.8	32.9		21.7	21.7			56.0			56.0	
Actuated g/C Ratio	0.26	0.30		0.20	0.20			0.51			0.51	
v/c Ratio	1.10	0.68		0.40	0.80			0.97			0.96	
Control Delay	130.8	44.1		52.5	64.1			54.9			53.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	130.8	44.1		52.5	64.1			54.9			53.5	
LOS	F	D		D	E			D			D	
Approach Delay		81.1			62.2			54.9			53.5	
Approach LOS		F			E			D			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 121			
Actuated Cycle Length: 109.4			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 61.3		Intersection LOS: E	
Intersection Capacity Utilization 72.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Highland Ave & West St



Lane Group	Ø2
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	29
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

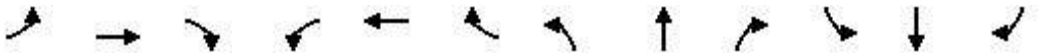
Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	225	302	45	232	787	740
v/c Ratio	1.10	0.68	0.40	0.80	0.97	0.96
Control Delay	130.8	44.1	52.5	64.1	54.9	53.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	130.8	44.1	52.5	64.1	54.9	53.5
Queue Length 50th (ft)	~170	208	31	172	~694	~646
Queue Length 95th (ft)	#346	313	39	224	#664	#834
Internal Link Dist (ft)		375		223	756	541
Turn Bay Length (ft)			150			
Base Capacity (vph)	204	495	133	341	811	772
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.61	0.34	0.68	0.97	0.96

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

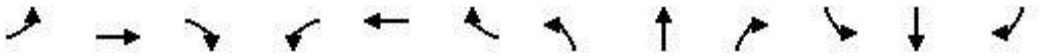
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Future Volume (vph)	200	226	31	24	142	41	20	512	46	19	373	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	12	9	10	12	12	13	12	12	13	12
Total Lost time (s)	4.0	4.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.97			0.99			0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1461	1480		1027	1467			1658			1581	
Flt Permitted	0.39	1.00		0.53	1.00			0.96			0.95	
Satd. Flow (perm)	593	1480		574	1467			1587			1509	
Peak-hour factor, PHF	0.89	0.90	0.61	0.53	0.78	0.82	0.64	0.74	0.72	0.63	0.87	0.69
Adj. Flow (vph)	225	251	51	45	182	50	31	692	64	30	429	281
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	225	302	0	45	232	0	0	787	0	0	740	0
Confl. Peds. (#/hr)	2		6	6		2	5		46	46		5
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	1%	0%	41%	6%	0%	6%	5%	0%	0%	5%	5%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Actuated Green, G (s)	27.8	31.8		21.7	21.7			56.0			56.0	
Effective Green, g (s)	27.8	31.8		21.7	21.7			56.0			56.0	
Actuated g/C Ratio	0.25	0.29		0.20	0.20			0.51			0.51	
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	
Vehicle Extension (s)	2.0			4.0	4.0			2.0			2.0	
Lane Grp Cap (vph)	197	427		113	289			807			767	
v/s Ratio Prot	c0.06	0.20			0.16							
v/s Ratio Perm	c0.22			0.08				c0.50			0.49	
v/c Ratio	1.14	0.71		0.40	0.80			0.98			0.96	
Uniform Delay, d1	40.8	35.0		38.5	42.2			26.4			26.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	107.6	4.3		3.1	15.5			25.4			23.8	
Delay (s)	148.4	39.3		41.6	57.7			51.7			49.9	
Level of Service	F	D		D	E			D			D	
Approach Delay (s)		85.9			55.1			51.7			49.9	
Approach LOS		F			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	59.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	110.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Future Volume (vph)	21	0	186	54	59	20	115	580	0	0	405	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	9	11	9	12	11	13	12	12	16	12
Storage Length (ft)	0		25	50		0	60		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.90		0.95	0.99		0.99				1.00	
Frt		0.879			0.965						0.990	
Flt Protected		0.995		0.950			0.950					
Satd. Flow (prot)	0	1204	0	1570	1440	0	1540	1683	0	0	1834	0
Flt Permitted		0.947		0.385			0.315					
Satd. Flow (perm)	0	1145	0	607	1440	0	508	1683	0	0	1834	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		274			17							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1036			474			1055			1271	
Travel Time (s)		23.5			10.8			24.0			28.9	
Confl. Peds. (#/hr)	8		46	46		8	12		17	17		12
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.68	0.92	0.68	0.60	0.59	0.64	0.75	0.83	0.92	0.92	0.79	0.72
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%	2%	5%	0%	0%	4%	8%
Adj. Flow (vph)	31	0	274	90	100	31	153	699	0	0	513	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	305	0	90	131	0	153	699	0	0	555	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)		11			11			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.30	1.19	1.30	1.14	1.19	1.10	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2			2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	20	100		20	100		20	100			100	
Trailing Detector (ft)	0	0		0	0		0	0			0	
Detector 1 Position(ft)	0	0		0	0		0	0			0	
Detector 1 Size(ft)	20	6		20	6		20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0			12.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0			40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%			44.4%	
Maximum Green (s)	23.0	23.0		23.0	23.0		33.0	33.0			33.0	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		Max	Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.6		14.6	14.6		34.7	34.7			34.7	
Actuated g/C Ratio		0.20		0.20	0.20		0.47	0.47			0.47	
v/c Ratio		0.69		0.76	0.44		0.65	0.89			0.65	
Control Delay		14.4		67.7	29.2		38.8	39.9			24.7	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		14.4		67.7	29.2		38.8	39.9			24.7	
LOS		B		E	C		D	D			C	
Approach Delay		14.4			44.8			39.7			24.7	
Approach LOS		B			D			D			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 74.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 32.0		Intersection LOS: C	
Intersection Capacity Utilization 70.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Highland Ave & Rosemary St

Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	41
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

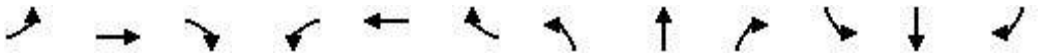
Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	305	90	131	153	699	555
v/c Ratio	0.69	0.76	0.44	0.65	0.89	0.65
Control Delay	14.4	67.7	29.2	38.8	39.9	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	67.7	29.2	38.8	39.9	24.7
Queue Length 50th (ft)	14	45	52	67	~401	244
Queue Length 95th (ft)	94	59	61	#142	#597	342
Internal Link Dist (ft)	956		394		975	1191
Turn Bay Length (ft)		50		60		
Base Capacity (vph)	557	197	480	237	786	856
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.46	0.27	0.65	0.89	0.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Future Volume (vph)	21	0	186	54	59	20	115	580	0	0	405	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	9	11	9	12	11	13	12	12	16	12
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		0.88		1.00	0.99		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		0.95	1.00		0.99	1.00			1.00	
Frt		0.88		1.00	0.96		1.00	1.00			0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1170		1487	1437		1532	1683			1835	
Flt Permitted		0.95		0.39	1.00		0.32	1.00			1.00	
Satd. Flow (perm)		1113		603	1437		508	1683			1835	
Peak-hour factor, PHF	0.68	0.92	0.68	0.60	0.59	0.64	0.75	0.83	0.92	0.92	0.79	0.72
Adj. Flow (vph)	31	0	274	90	100	31	153	699	0	0	513	42
RTOR Reduction (vph)	0	220	0	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	85	0	90	117	0	153	699	0	0	555	0
Confl. Peds. (#/hr)	8		46	46		8	12		17	17		12
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%	2%	5%	0%	0%	4%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		14.6		14.6	14.6		34.7	34.7			34.7	
Effective Green, g (s)		14.6		14.6	14.6		34.7	34.7			34.7	
Actuated g/C Ratio		0.20		0.20	0.20		0.47	0.47			0.47	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		218		118	281		236	783			854	
v/s Ratio Prot					0.08			c0.42			0.30	
v/s Ratio Perm		0.08		c0.15			0.30					
v/c Ratio		0.39		0.76	0.42		0.65	0.89			0.65	
Uniform Delay, d1		26.1		28.3	26.2		15.2	18.2			15.2	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.1		24.8	1.0		13.0	14.7			3.8	
Delay (s)		27.2		53.1	27.2		28.2	32.9			19.1	
Level of Service		C		D	C		C	C			B	
Approach Delay (s)		27.2			37.8			32.0			19.1	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

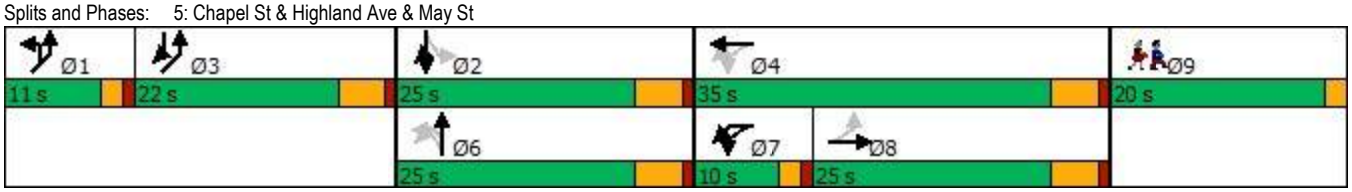
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Future Volume (vph)	86	135	36	13	31	39	165	53	2	10	175	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12	10	12	12	12	16	12
Storage Length (ft)	0		0			0		0		0		0
Storage Lanes	0		0			0		0		0		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					0.99				1.00	
Frt		0.978					0.974				0.984	
Flt Protected		0.985					0.987				0.997	
Satd. Flow (prot)	0	1666	0	0	0	0	1492	0	0	0	1823	0
Flt Permitted		0.633					0.708				0.969	
Satd. Flow (perm)	0	1069	0	0	0	0	1070	0	0	0	1771	0
Right Turn on Red				No				Yes				No
Satd. Flow (RTOR)							10					
Link Speed (mph)		30					30				30	
Link Distance (ft)		453					923				945	
Travel Time (s)		10.3					21.0				21.5	
Confl. Peds. (#/hr)	7							7		3		2
Peak Hour Factor	0.72	0.62	0.92	0.50	0.64	0.55	0.65	0.60	0.50	0.56	0.64	0.50
Heavy Vehicles (%)	0%	3%	0%	8%	0%	0%	4%	0%	0%	0%	4%	6%
Adj. Flow (vph)	119	218	39	26	48	71	254	88	4	18	273	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	402	0	0	0	0	461	0	0	0	335	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Left	Left	Right
Median Width(ft)		0					0				0	
Link Offset(ft)		0					0				0	
Crosswalk Width(ft)		16					16				16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2		1	1	2	
Detector Template	Left	Thru			Left	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100		20	20	100	
Trailing Detector (ft)	0	0			0	0	0		0	0	0	
Detector 1 Position(ft)	0	0			0	0	0		0	0	0	
Detector 1 Size(ft)	20	6			20	20	6		20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Detector Phase	8	8			7	7	4		6	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0			2.0	2.0	6.0		6.0	6.0	6.0	
Minimum Split (s)	11.0	11.0			6.0	6.0	11.0		11.0	11.0	11.0	
Total Split (s)	25.0	25.0			10.0	10.0	35.0		25.0	25.0	25.0	
Total Split (%)	22.1%	22.1%			8.8%	8.8%	31.0%		22.1%	22.1%	22.1%	
Maximum Green (s)	20.0	20.0			7.0	7.0	30.0		20.0	20.0	20.0	
Yellow Time (s)	4.0	4.0			2.0	2.0	4.0		4.0	4.0	4.0	

Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Lane Configurations										
Traffic Volume (vph)	15	129	189	89	11	268	39	9		
Future Volume (vph)	15	140	238	89	11	387	39	9		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	10	11	12	10	11	11	11		
Storage Length (ft)	0		120			0	60			
Storage Lanes	0		1			2	1			
Taper Length (ft)	25					25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00				0.99				
Frt			0.850			0.977				
Flt Protected		0.995			0.950	0.959				
Satd. Flow (prot)	0	1535	1348	0	1516	1451	0	0		
Flt Permitted		0.849			0.950	0.959				
Satd. Flow (perm)	0	1310	1348	0	1516	1441	0	0		
Right Turn on Red				No				Yes		
Satd. Flow (RTOR)						116				
Link Speed (mph)		30				30				
Link Distance (ft)		644				580				
Travel Time (s)		14.6				13.2				
Confl. Peds. (#/hr)	2			3		7	2			
Peak Hour Factor	0.70	0.79	0.91	0.81	0.63	0.91	0.63	0.67		
Heavy Vehicles (%)	7%	3%	6%	0%	0%	7%	3%	0%		
Adj. Flow (vph)	21	177	262	110	17	425	62	13		
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	198	372	0	17	500	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Right	Left	Left	Right	Right		
Median Width(ft)		0				21				
Link Offset(ft)		0				0				
Crosswalk Width(ft)		16				16				
Two way Left Turn Lane										
Headway Factor	1.14	1.25	1.19	1.14	1.25	1.19	1.19	1.19		
Turning Speed (mph)	15		9	9	15	15	9	9		
Number of Detectors	1	2	1		1	1				
Detector Template	Left	Thru	Right		Left	Left				
Leading Detector (ft)	20	100	20		20	20				
Trailing Detector (ft)	0	0	0		0	0				
Detector 1 Position(ft)	0	0	0		0	0				
Detector 1 Size(ft)	20	6	20		20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)		94								
Detector 2 Size(ft)		6								
Detector 2 Type		Cl+Ex								
Detector 2 Channel										
Detector 2 Extend (s)		0.0								
Turn Type	Perm	NA	custom		Prot	Prot				
Protected Phases		2	2 3		1	1 3			3	9
Permitted Phases	2									
Detector Phase	2	2	2 3		1	1 3				
Switch Phase										
Minimum Initial (s)	6.0	6.0			1.0				4.0	5.0
Minimum Split (s)	11.0	11.0			6.0				9.0	20.0
Total Split (s)	25.0	25.0			11.0				22.0	20.0
Total Split (%)	22.1%	22.1%			9.7%				19%	18%
Maximum Green (s)	20.0	20.0			8.0				17.0	18.0
Yellow Time (s)	4.0	4.0			2.0				4.0	2.0

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0				0.0	
Total Lost Time (s)		5.0					5.0				5.0	
Lead/Lag	Lag	Lag			Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None			None	None	None		Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		30.2					30.2				20.1	
Actuated g/C Ratio		0.31					0.31				0.21	
v/c Ratio		1.21					1.36				0.91	
Control Delay		151.8					209.3				69.1	
Queue Delay		0.0					0.0				0.0	
Total Delay		151.8					209.3				69.1	
LOS		F					F				E	
Approach Delay		151.8					209.3				69.1	
Approach LOS		F					F				E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 113			
Actuated Cycle Length: 97			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.36			
Intersection Signal Delay: 100.6		Intersection LOS: F	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Chapel St & Highland Ave & May St



Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
All-Red Time (s)	1.0	1.0			1.0				1.0	0.0
Lost Time Adjust (s)		0.0			0.0					
Total Lost Time (s)		5.0			3.0					
Lead/Lag					Lead				Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0
Recall Mode	Min	Min			None				None	None
Walk Time (s)										7.0
Flash Dont Walk (s)										11.0
Pedestrian Calls (#/hr)										12
Act Effct Green (s)		20.1	42.3		8.0	30.2				
Actuated g/C Ratio		0.21	0.44		0.08	0.31				
v/c Ratio		0.73	0.63		0.14	0.94				
Control Delay		54.4	28.9		46.9	53.9				
Queue Delay		0.0	0.0		0.0	0.0				
Total Delay		54.4	28.9		46.9	53.9				
LOS		D	C		D	D				
Approach Delay		37.7				53.7				
Approach LOS		D				D				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR	NEL2	NEL
Lane Group Flow (vph)	402	461	335	198	372	17	500
v/c Ratio	1.21	1.36	0.91	0.73	0.63	0.14	0.94
Control Delay	151.8	209.3	69.1	54.4	28.9	46.9	53.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	151.8	209.3	69.1	54.4	28.9	46.9	53.9
Queue Length 50th (ft)	~284	~351	192	109	161	9	225
Queue Length 95th (ft)	#338	#427	#252	#218	355	25	#546
Internal Link Dist (ft)	373	843	865	564			500
Turn Bay Length (ft)					120		
Base Capacity (vph)	332	339	367	271	587	125	531
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.21	1.36	0.91	0.73	0.63	0.14	0.94

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

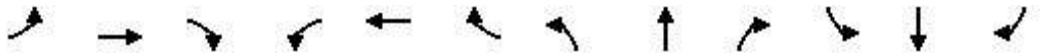
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Future Volume (vph)	86	135	36	13	31	39	165	53	2	10	175	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12	10	12	12	12	16	12
Total Lost time (s)		5.0					5.0				5.0	
Lane Util. Factor		1.00					1.00				1.00	
Frpb, ped/bikes		1.00					0.99				1.00	
Flpb, ped/bikes		1.00					1.00				1.00	
Frt		0.98					0.97				0.98	
Flt Protected		0.99					0.99				1.00	
Satd. Flow (prot)		1665					1493				1822	
Flt Permitted		0.63					0.71				0.97	
Satd. Flow (perm)		1069					1070				1771	
Peak-hour factor, PHF	0.72	0.62	0.92	0.50	0.64	0.55	0.65	0.60	0.50	0.56	0.64	0.50
Adj. Flow (vph)	119	218	39	26	48	71	254	88	4	18	273	40
RTOR Reduction (vph)	0	0	0	0	0	0	7	0	0	0	0	0
Lane Group Flow (vph)	0	402	0	0	0	0	454	0	0	0	335	0
Confl. Peds. (#/hr)	7							7		3		2
Heavy Vehicles (%)	0%	3%	0%	8%	0%	0%	4%	0%	0%	0%	4%	6%
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Actuated Green, G (s)		30.2					30.2				20.1	
Effective Green, g (s)		30.2					30.2				20.1	
Actuated g/C Ratio		0.31					0.31				0.20	
Clearance Time (s)		5.0					5.0				5.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		327					328				361	
v/s Ratio Prot												
v/s Ratio Perm		0.38					c0.42				c0.19	
v/c Ratio		1.23					1.38				0.93	
Uniform Delay, d1		34.1					34.1				38.5	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		127.2					190.9				29.4	
Delay (s)		161.3					225.0				67.9	
Level of Service		F					F				E	
Approach Delay (s)		161.3					225.0				67.9	
Approach LOS		F					F				E	

Intersection Summary			
HCM 2000 Control Delay	110.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	23.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	15	129	189	89	11	268	39	9
Future Volume (vph)	15	140	238	89	11	387	39	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	10	11	11	11
Total Lost time (s)		5.0	5.0		3.0	3.0		
Lane Util. Factor		1.00	1.00		1.00	1.00		
Frpb, ped/bikes		1.00	1.00		1.00	1.00		
Flpb, ped/bikes		1.00	1.00		1.00	1.00		
Frt		1.00	0.85		1.00	0.98		
Flt Protected		0.99	1.00		0.95	0.96		
Satd. Flow (prot)		1535	1348		1516	1453		
Flt Permitted		0.85	1.00		0.95	0.96		
Satd. Flow (perm)		1310	1348		1516	1453		
Peak-hour factor, PHF	0.70	0.79	0.91	0.81	0.63	0.91	0.63	0.67
Adj. Flow (vph)	21	177	262	110	17	425	62	13
RTOR Reduction (vph)	0	0	0	0	0	83	0	0
Lane Group Flow (vph)	0	198	372	0	17	417	0	0
Confl. Peds. (#/hr)	2			3		7	2	
Heavy Vehicles (%)	7%	3%	6%	0%	0%	7%	3%	0%
Turn Type	Perm	NA	custom		Prot	Prot		
Protected Phases		2	2 3		1	1 3		
Permitted Phases	2							
Actuated Green, G (s)		20.1	42.2		8.0	28.1		
Effective Green, g (s)		20.1	42.2		8.0	28.1		
Actuated g/C Ratio		0.20	0.43		0.08	0.29		
Clearance Time (s)		5.0			3.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		267	577		123	414		
v/s Ratio Prot			0.28		0.01	c0.29		
v/s Ratio Perm		0.15						
v/c Ratio		0.74	0.64		0.14	1.01		
Uniform Delay, d1		36.8	22.2		42.0	35.2		
Progression Factor		1.00	1.00		1.00	1.00		
Incremental Delay, d2		10.6	2.5		0.5	46.1		
Delay (s)		47.3	24.7		42.6	81.3		
Level of Service		D	C		D	F		
Approach Delay (s)		32.6				80.0		
Approach LOS		C				F		

Intersection Summary



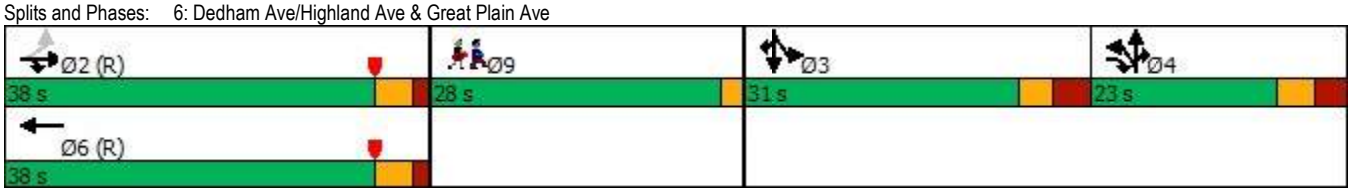
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Future Volume (vph)	55	271	289	0	329	73	269	164	24	30	97	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	10	10	10	10	10	10	10	10	12
Storage Length (ft)	0		0	0		0	0		35	0		90
Storage Lanes	0		1	0		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt			0.850		0.966				0.850			0.850
Flt Protected		0.992					0.950				0.987	
Satd. Flow (prot)	0	1557	1338	0	2780	0	1458	1565	1292	0	1497	1358
Flt Permitted		0.703					0.950				0.987	
Satd. Flow (perm)	0	1102	1338	0	2780	0	1455	1565	1292	0	1496	1358
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									95			95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		238			434			312			945	
Travel Time (s)		5.4			9.9			7.1			21.5	
Confl. Peds. (#/hr)	11		4	4		11	1		2	2		1
Peak Hour Factor	0.68	0.62	0.77	0.92	0.92	0.71	0.87	0.81	0.69	0.65	0.73	0.52
Heavy Vehicles (%)	0%	2%	5%	0%	4%	6%	4%	2%	5%	0%	7%	7%
Adj. Flow (vph)	81	437	375	0	358	103	309	202	35	46	133	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	518	375	0	461	0	309	202	35	0	179	60
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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1		2		1	2	1	1	2	1
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20		100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20		6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Detector Phase	2	2	2 4		6		4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0			10.0		11.5	11.5	11.5	11.5	11.5	11.5
Total Split (s)	38.0	38.0			38.0		23.0	23.0	23.0	31.0	31.0	31.0
Total Split (%)	31.7%	31.7%			31.7%		19.2%	19.2%	19.2%	25.8%	25.8%	25.8%
Maximum Green (s)	33.0	33.0			33.0		16.5	16.5	16.5	24.5	24.5	24.5
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5	3.0	3.0	3.0

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	26.0
Yellow Time (s)	2.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	1.5	1.5			1.5		3.0	3.0	3.0	3.5	3.5	3.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Lead/Lag							Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Min	C-Min			C-Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		36.6	79.2		36.6		36.0	36.0	36.0		18.5	18.5
Actuated g/C Ratio		0.30	0.66		0.30		0.30	0.30	0.30		0.15	0.15
v/c Ratio		1.54	0.43		0.54		0.71	0.43	0.08		0.77	0.21
Control Delay		267.6	7.1		37.9		51.0	42.8	0.3		70.0	4.0
Queue Delay		1.5	7.0		26.3		11.5	0.0	0.0		0.0	0.1
Total Delay		269.1	14.0		64.2		62.5	42.8	0.3		70.0	4.1
LOS		F	B		E		E	D	A		E	A
Approach Delay		162.0			64.2			51.2			53.4	
Approach LOS		F			E			D			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.54			
Intersection Signal Delay: 100.5		Intersection LOS: F	
Intersection Capacity Utilization 74.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Dedham Ave/Highland Ave & Great Plain Ave



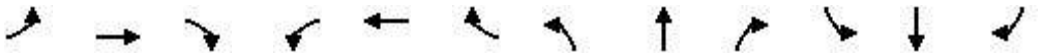
Lane Group	Ø9
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	518	375	461	309	202	35	179	60
v/c Ratio	1.54	0.43	0.54	0.71	0.43	0.08	0.77	0.21
Control Delay	267.6	7.1	37.9	51.0	42.8	0.3	70.0	4.0
Queue Delay	1.5	7.0	26.3	11.5	0.0	0.0	0.0	0.1
Total Delay	269.1	14.0	64.2	62.5	42.8	0.3	70.0	4.1
Queue Length 50th (ft)	~502	50	142	202	119	0	135	0
Queue Length 95th (ft)	m#399	m61	221	#493	#257	0	158	0
Internal Link Dist (ft)	158		354		232		865	
Turn Bay Length (ft)						35		90
Base Capacity (vph)	336	882	848	437	469	454	308	354
Starvation Cap Reductn	41	451	0	0	0	0	0	0
Spillback Cap Reductn	0	0	394	104	0	0	0	25
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.76	0.87	1.02	0.93	0.43	0.08	0.58	0.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Future Volume (vph)	55	271	289	0	329	73	269	164	24	30	97	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	11	10	10	10	10	10	10	10	10	12
Total Lost time (s)		5.0	5.0		5.0		6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00		1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)		1555	1338		2782		1458	1565	1292		1498	1358
Flt Permitted		0.70	1.00		1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)		1101	1338		2782		1458	1565	1292		1498	1358
Peak-hour factor, PHF	0.68	0.62	0.77	0.92	0.92	0.71	0.87	0.81	0.69	0.65	0.73	0.52
Adj. Flow (vph)	81	437	375	0	358	103	309	202	35	46	133	60
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	25	0	0	51
Lane Group Flow (vph)	0	518	375	0	461	0	309	202	11	0	179	9
Confl. Peds. (#/hr)	11		4	4		11	1		2	2		1
Heavy Vehicles (%)	0%	2%	5%	0%	4%	6%	4%	2%	5%	0%	7%	7%
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Actuated Green, G (s)		35.5	78.0		35.5		36.0	36.0	36.0		18.5	18.5
Effective Green, g (s)		35.5	71.5		35.5		36.0	36.0	36.0		18.5	18.5
Actuated g/C Ratio		0.30	0.60		0.30		0.30	0.30	0.30		0.15	0.15
Clearance Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		2.0			2.0		2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		325	797		823		437	469	387		230	209
v/s Ratio Prot			0.28		0.17		c0.21	0.13	0.01		c0.12	0.01
v/s Ratio Perm		c0.47										
v/c Ratio		1.59	0.47		0.56		0.71	0.43	0.03		0.78	0.04
Uniform Delay, d1		42.2	13.6		35.7		37.3	33.8	29.6		48.8	43.2
Progression Factor		0.53	0.47		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		268.6	0.0		2.7		4.2	0.2	0.0		14.0	0.0
Delay (s)		291.0	6.4		38.4		41.6	34.0	29.7		62.8	43.3
Level of Service		F	A		D		D	C	C		E	D
Approach Delay (s)		171.5			38.4			38.0			57.9	
Approach LOS		F			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	96.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

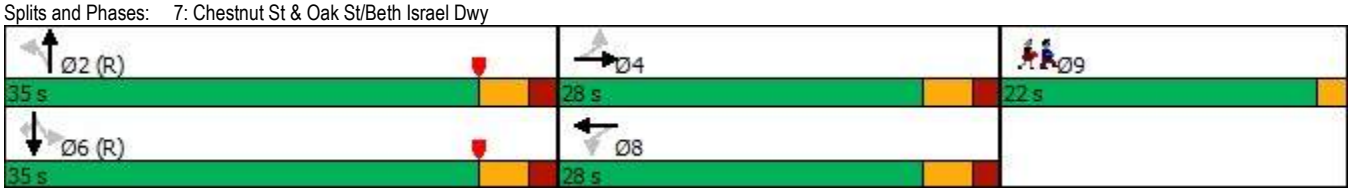
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Future Volume (vph)	81	9	74	8	6	14	116	692	10	23	322	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	8	8	11	11	11	9	9	12	12	9	9
Storage Length (ft)	0		0	0		0	80		0	0		150
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.939			0.935			0.998				0.850
Flt Protected		0.976			0.986		0.950				0.997	
Satd. Flow (prot)	0	1332	0	0	1494	0	1433	1506	0	0	1504	1283
Flt Permitted		0.834			0.920		0.458				0.744	
Satd. Flow (perm)	0	1138	0	0	1394	0	691	1506	0	0	1123	1283
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								1				78
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			314			227			439	
Travel Time (s)		13.8			7.1			5.2			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	10	80	9	7	15	126	752	11	25	350	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	178	0	0	31	0	126	763	0	0	375	78
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			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.19	1.19	1.19	1.30	1.30	1.14	1.14	1.30	1.30
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	28.0	28.0		28.0	28.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	32.9%	32.9%		32.9%	32.9%		41.2%	41.2%		41.2%	41.2%	41.2%
Maximum Green (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	30.0
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0			5.0	5.0

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	22.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		23.0			23.0		43.2	43.2			43.2	43.2
Actuated g/C Ratio		0.27			0.27		0.51	0.51			0.51	0.51
v/c Ratio		0.58			0.08		0.36	1.00			0.66	0.11
Control Delay		35.6			24.0		21.0	57.8			27.7	5.3
Queue Delay		0.0			0.0		0.0	0.0			0.0	0.0
Total Delay		35.6			24.0		21.0	57.8			27.7	5.3
LOS		D			C		C	E			C	A
Approach Delay		35.6			24.0			52.6			23.8	
Approach LOS		D			C			D			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 41.7		Intersection LOS: D	
Intersection Capacity Utilization 79.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Chestnut St & Oak St/Beth Israel Dwy

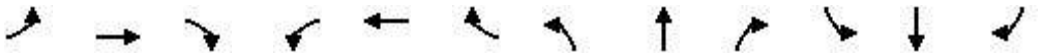


Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lane Group	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	178	31	126	763	375	78
v/c Ratio	0.58	0.08	0.36	1.00	0.66	0.11
Control Delay	35.6	24.0	21.0	57.8	27.7	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	24.0	21.0	57.8	27.7	5.3
Queue Length 50th (ft)	82	12	29	290	106	0
Queue Length 95th (ft)	151	34	111	#784	#367	28
Internal Link Dist (ft)	526	234		147	359	
Turn Bay Length (ft)			80			150
Base Capacity (vph)	307	377	350	765	571	690
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.08	0.36	1.00	0.66	0.11

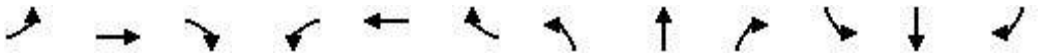
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Future Volume (vph)	81	9	74	8	6	14	116	692	10	23	322	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	11	11	11	9	9	12	12	9	9
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	1.00
Frt		0.94			0.93		1.00	1.00			1.00	0.85
Flt Protected		0.98			0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1332			1493		1433	1506			1504	1282
Flt Permitted		0.83			0.92		0.46	1.00			0.74	1.00
Satd. Flow (perm)		1138			1394		691	1506			1122	1282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	10	80	9	7	15	126	752	11	25	350	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	39
Lane Group Flow (vph)	0	178	0	0	31	0	126	762	0	0	375	39
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		23.0			23.0		42.0	42.0			42.0	42.0
Effective Green, g (s)		23.0			23.0		42.0	42.0			42.0	42.0
Actuated g/C Ratio		0.27			0.27		0.49	0.49			0.49	0.49
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		307			377		341	744			554	633
v/s Ratio Prot								c0.51				
v/s Ratio Perm		c0.16			0.02		0.18				0.33	0.03
v/c Ratio		0.58			0.08		0.37	1.02			0.68	0.06
Uniform Delay, d1		26.8			23.1		13.3	21.5			16.3	11.2
Progression Factor		1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		7.8			0.4		3.1	39.5			6.5	0.2
Delay (s)		34.6			23.6		16.4	61.0			22.9	11.4
Level of Service		C			C		B	E			C	B
Approach Delay (s)		34.6			23.6			54.6			20.9	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



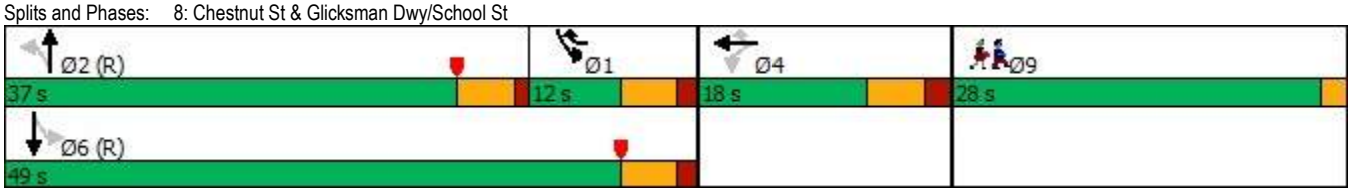
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Future Volume (vph)	0	0	0	166	4	53	6	612	234	51	254	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	9	13	9	12	12	9	12	12
Storage Length (ft)	0		0	0		150	40		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			70			70			100		
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						0.850		0.959			0.998	
Flt Protected					0.953		0.950			0.950		
Satd. Flow (prot)	0	0	0	0	1438	1473	1433	1608	0	1433	1673	0
Flt Permitted					0.953		0.574			0.074		
Satd. Flow (perm)	0	0	0	0	1438	1473	866	1608	0	112	1673	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						58		22			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		162			420			439			782	
Travel Time (s)		3.7			9.5			10.0			17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	180	4	58	7	665	254	55	276	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	184	58	7	919	0	55	280	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.30	1.30	1.10	1.30	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2		1	2	
Detector Template				Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)				20	100	20	20	100		20	100	
Trailing Detector (ft)				0	0	0	0	0		0	0	
Detector 1 Position(ft)				0	0	0	0	0		0	0	
Detector 1 Size(ft)				20	6	20	20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Detector Phase				4	4	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)				6.0	6.0	6.0	2.0	2.0		6.0	10.0	
Minimum Split (s)				12.0	12.0	11.5	7.0	7.0		11.5	15.5	
Total Split (s)				18.0	18.0	12.0	37.0	37.0		12.0	49.0	
Total Split (%)				18.9%	18.9%	12.6%	38.9%	38.9%		12.6%	51.6%	
Maximum Green (s)				12.0	12.0	6.5	32.0	32.0		6.5	43.5	
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)				2.0	2.0	1.5	1.0	1.0		1.5	1.5	
Lost Time Adjust (s)					0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	29%
Maximum Green (s)	26.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag						Lag	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode				None	None	None	C-Min	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					12.0	21.9	51.4	51.4		61.5	60.3	
Actuated g/C Ratio					0.13	0.23	0.54	0.54		0.65	0.63	
v/c Ratio					1.02	0.15	0.01	1.04		0.35	0.26	
Control Delay					114.8	8.7	19.5	68.3		30.9	11.7	
Queue Delay					0.0	0.0	0.0	22.3		0.0	0.0	
Total Delay					114.8	8.7	19.5	90.6		30.9	11.7	
LOS					F	A	B	F		C	B	
Approach Delay					89.4			90.1			14.9	
Approach LOS					F			F			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 95			
Actuated Cycle Length: 95			
Offset: 9 (9%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay: 73.2		Intersection LOS: E	
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Chestnut St & Glicksman Dwy/School St



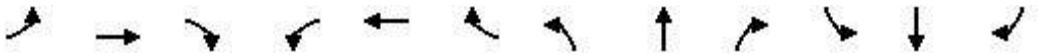
Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	184	58	7	919	55	280
v/c Ratio	1.02	0.15	0.01	1.04	0.35	0.26
Control Delay	114.8	8.7	19.5	68.3	30.9	11.7
Queue Delay	0.0	0.0	0.0	22.3	0.0	0.0
Total Delay	114.8	8.7	19.5	90.6	30.9	11.7
Queue Length 50th (ft)	~115	0	1	412	7	41
Queue Length 95th (ft)	#251	30	13	#1049	43	168
Internal Link Dist (ft)	340			359		702
Turn Bay Length (ft)		150	40		115	
Base Capacity (vph)	181	354	468	880	163	1062
Starvation Cap Reductn	0	0	0	142	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.16	0.01	1.25	0.34	0.26

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Future Volume (vph)	0	0	0	166	4	53	6	612	234	51	254	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	9	9	13	9	12	12	9	12	12
Total Lost time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frt					1.00	0.85	1.00	0.96		1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1438	1472	1433	1607		1433	1673	
Flt Permitted					0.95	1.00	0.57	1.00		0.07	1.00	
Satd. Flow (perm)					1438	1472	867	1607		112	1673	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	180	4	58	7	665	254	55	276	4
RTOR Reduction (vph)	0	0	0	0	0	48	0	11	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	184	10	7	908	0	55	280	0
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Actuated Green, G (s)					12.0	17.0	49.1	49.1		59.1	59.1	
Effective Green, g (s)					12.0	17.0	49.1	49.1		59.1	59.1	
Actuated g/C Ratio					0.13	0.18	0.52	0.52		0.62	0.62	
Clearance Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Vehicle Extension (s)					3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)					181	348	448	830		139	1040	
v/s Ratio Prot						0.00		c0.57		c0.02	0.17	
v/s Ratio Perm					0.13	0.01	0.01			0.23		
v/c Ratio					1.02	0.03	0.02	1.09		0.40	0.27	
Uniform Delay, d1					41.5	32.2	11.2	22.9		36.4	8.1	
Progression Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2					71.3	0.0	0.1	60.2		1.9	0.6	
Delay (s)					112.8	32.2	11.2	83.2		38.2	8.8	
Level of Service					F	C	B	F		D	A	
Approach Delay (s)		0.0			93.5			82.6			13.6	
Approach LOS		A			F			F			B	

Intersection Summary			
HCM 2000 Control Delay	69.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	154	651	599	30	4	142
Future Volume (vph)	154	659	624	30	4	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.993		0.871	
Flt Protected		0.990			0.998	
Satd. Flow (prot)	0	2932	2944	0	1371	0
Flt Permitted		0.990			0.998	
Satd. Flow (perm)	0	2932	2944	0	1371	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		180	394		416	
Travel Time (s)		4.1	9.0		9.5	
Confl. Peds. (#/hr)	23			23		
Peak Hour Factor	0.75	0.77	0.84	0.81	0.50	0.78
Heavy Vehicles (%)	4%	2%	2%	8%	0%	5%
Adj. Flow (vph)	205	856	743	37	8	182
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1061	780	0	190	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.25	1.25	1.25	1.19	1.19
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

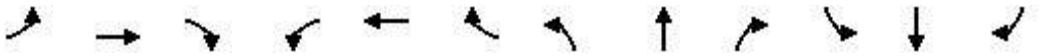
Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	154	651	599	30	4	142
Future Vol, veh/h	154	659	624	30	4	142
Conflicting Peds, #/hr	23	0	0	23	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	77	84	81	50	78
Heavy Vehicles, %	4	2	2	8	0	5
Mvmt Flow	205	856	743	37	8	182

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	803	0	-	0	1623	413
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	838	-
Critical Hdwy	4.18	-	-	-	6.8	7
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.24	-	-	-	3.5	3.35
Pot Cap-1 Maneuver	804	-	-	-	95	580
Stage 1	-	-	-	-	415	-
Stage 2	-	-	-	-	390	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	788	-	-	-	46	568
Mov Cap-2 Maneuver	-	-	-	-	46	-
Stage 1	-	-	-	-	205	-
Stage 2	-	-	-	-	382	-

Approach	EB	WB	SB
HCM Control Delay, s	3.7	0	23.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	788	-	-	-	384
HCM Lane V/C Ratio	0.261	-	-	-	0.495
HCM Control Delay (s)	11.2	1.9	-	-	23.2
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	1	-	-	-	2.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Future Volume (vph)	62	522	79	89	497	43	112	387	74	18	189	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	175		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.982			0.989			0.976			0.959	
Flt Protected		0.995			0.992		0.950			0.950		
Satd. Flow (prot)	0	2856	0	0	2873	0	1444	1528	0	1430	1484	0
Flt Permitted		0.614			0.531		0.421			0.305		
Satd. Flow (perm)	0	1762	0	0	1538	0	640	1528	0	459	1484	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			238			782			424	
Travel Time (s)		9.0			5.4			17.8			9.6	
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.66	0.76	0.76	0.75	0.83	0.75	0.81	0.88	0.89	0.50	0.91	0.57
Heavy Vehicles (%)	8%	2%	9%	3%	4%	0%	5%	6%	2%	6%	4%	13%
Adj. Flow (vph)	94	687	104	119	599	57	138	440	83	36	208	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	885	0	0	775	0	138	523	0	36	285	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.19	1.19	1.25	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	29.0		11.0	29.0	
Total Split (%)	32.5%	32.5%		9.2%	41.7%		9.2%	24.2%		9.2%	24.2%	
Maximum Green (s)	34.5	34.5		6.5	45.5		6.5	24.5		6.5	24.5	

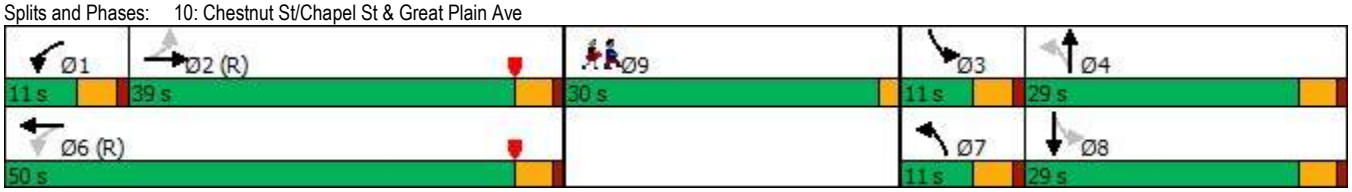
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	30.0
Total Split (%)	25%
Maximum Green (s)	28.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		45.5			45.5		59.2	52.6		50.9	43.7	
Actuated g/C Ratio		0.38			0.38		0.49	0.44		0.42	0.36	
v/c Ratio		1.32			1.38dl		0.35	0.78		0.14	0.53	
Control Delay		188.8			181.6		23.1	40.6		21.2	37.0	
Queue Delay		1.6			0.0		0.0	0.2		0.0	0.0	
Total Delay		190.3			181.6		23.1	40.8		21.2	37.0	
LOS		F			F		C	D		C	D	
Approach Delay		190.3			181.6			37.1			35.2	
Approach LOS		F			F			D			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.33			
Intersection Signal Delay: 130.6		Intersection LOS: F	
Intersection Capacity Utilization 78.8%		ICU Level of Service D	
Analysis Period (min) 15			

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 10: Chestnut St/Chapel St & Great Plain Ave



Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

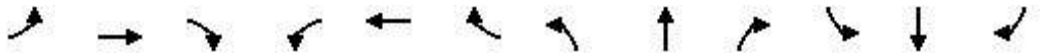
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	885	775	138	523	36	285
v/c Ratio	1.32	1.38dl	0.35	0.78	0.14	0.53
Control Delay	188.8	181.6	23.1	40.6	21.2	37.0
Queue Delay	1.6	0.0	0.0	0.2	0.0	0.0
Total Delay	190.3	181.6	23.1	40.8	21.2	37.0
Queue Length 50th (ft)	~467	~418	51	331	12	163
Queue Length 95th (ft)	#460	#482	120	#783	24	#389
Internal Link Dist (ft)	314	158		702		344
Turn Bay Length (ft)			175		100	
Base Capacity (vph)	668	583	395	670	255	540
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	129	0	0	8	2	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.64	1.33	0.35	0.79	0.14	0.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

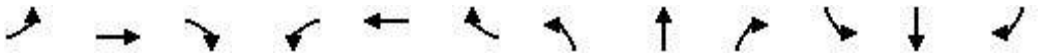
dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Future Volume (vph)	62	522	79	89	497	43	112	387	74	18	189	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	11	11	10	11	11
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.98		1.00	0.96	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2857			2874		1444	1528		1430	1485	
Flt Permitted		0.61			0.53		0.42	1.00		0.30	1.00	
Satd. Flow (perm)		1762			1538		640	1528		459	1485	
Peak-hour factor, PHF	0.66	0.76	0.76	0.75	0.83	0.75	0.81	0.88	0.89	0.50	0.91	0.57
Adj. Flow (vph)	94	687	104	119	599	57	138	440	83	36	208	77
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	885	0	0	775	0	138	523	0	36	285	0
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	8%	2%	9%	3%	4%	0%	5%	6%	2%	6%	4%	13%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		42.1			42.1		61.9	52.6		50.3	45.5	
Effective Green, g (s)		42.1			42.1		61.9	52.6		50.3	45.5	
Actuated g/C Ratio		0.35			0.35		0.52	0.44		0.42	0.38	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		618			539		409	669		231	563	
v/s Ratio Prot							c0.03	c0.34		0.01	0.19	
v/s Ratio Perm		0.50			c0.50		0.14			0.06		
v/c Ratio		1.43			1.38dl		0.34	0.78		0.16	0.51	
Uniform Delay, d1		39.0			39.0		16.5	28.8		21.9	28.6	
Progression Factor		1.00			0.58		1.00	1.00		1.00	1.00	
Incremental Delay, d2		203.6			205.9		0.5	5.9		0.3	0.7	
Delay (s)		242.6			228.7		17.0	34.7		22.2	29.3	
Level of Service		F			F		B	C		C	C	
Approach Delay (s)		242.6			228.7			31.0			28.5	
Approach LOS		F			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	159.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	128	8	157	105	6	8	2	135	10	1	4
Future Volume (vph)	1	128	8	157	105	6	8	2	135	10	1	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	14	12	12	13	12	12	10	12
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
Ped Bike Factor												
Frt		0.994			0.997			0.881			0.964	
Flt Protected		0.999			0.972			0.995			0.971	
Satd. Flow (prot)	0	1738	0	0	1721	0	0	1503	0	0	1494	0
Flt Permitted		0.999			0.972			0.995			0.971	
Satd. Flow (perm)	0	1738	0	0	1721	0	0	1503	0	0	1494	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		521			453			566			491	
Travel Time (s)		11.8			10.3			12.9			11.2	
Confl. Peds. (#/hr)	1		3	3		1						
Peak Hour Factor	0.25	0.71	0.88	0.70	0.66	0.63	0.44	0.50	0.80	0.56	0.25	0.50
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	14%	0%	2%	0%	0%	0%
Adj. Flow (vph)	4	180	9	224	159	10	18	4	169	18	4	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	393	0	0	191	0	0	30	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	1.14	1.10	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	128	8	157	105	6	8	2	135	10	1	4
Future Vol, veh/h	1	128	8	157	105	6	8	2	135	10	1	4
Conflicting Peds, #/hr	1	0	3	3	0	1	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	25	71	88	70	66	63	44	50	80	56	25	50
Heavy Vehicles, %	0	1	0	4	1	0	14	0	2	0	0	0
Mvmt Flow	4	180	9	224	159	10	18	4	169	18	4	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	170	0	0	192	0	0	814	814	188	892	813	165
Stage 1	-	-	-	-	-	-	196	196	-	613	613	-
Stage 2	-	-	-	-	-	-	618	618	-	279	200	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.24	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.24	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.24	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.626	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1420	-	-	1370	-	-	283	315	854	265	315	885
Stage 1	-	-	-	-	-	-	779	742	-	483	486	-
Stage 2	-	-	-	-	-	-	457	484	-	732	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1419	-	-	1366	-	-	237	256	851	180	256	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	237	256	-	180	256	-
Stage 1	-	-	-	-	-	-	774	738	-	481	398	-
Stage 2	-	-	-	-	-	-	367	396	-	582	735	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	4.7	12.7	22
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	657	1419	-	-	1366	-	-	241
HCM Lane V/C Ratio	0.291	0.003	-	-	0.164	-	-	0.124
HCM Control Delay (s)	12.7	7.5	0	-	8.2	0	-	22
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.6	-	-	0.4

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	176	148	130	65	68	53
Future Volume (vph)	176	148	130	68	79	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.962		0.946	
Flt Protected		0.979			0.971	
Satd. Flow (prot)	0	1667	1516	0	1630	0
Flt Permitted		0.979			0.971	
Satd. Flow (perm)	0	1667	1516	0	1630	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		525	1036		802	
Travel Time (s)		11.9	23.5		18.2	
Confl. Peds. (#/hr)	4			4		1
Peak Hour Factor	0.90	0.56	0.59	0.78	0.74	0.75
Heavy Vehicles (%)	1%	0%	1%	2%	2%	4%
Adj. Flow (vph)	196	264	220	87	107	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	460	307	0	178	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.25	1.25	1.05	1.05
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.8%		ICU Level of Service A	
Analysis Period (min) 15			

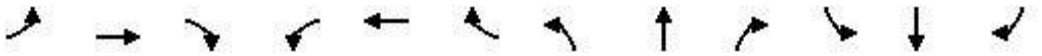
Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	176	148	130	65	68	53
Future Vol, veh/h	176	148	130	68	79	53
Conflicting Peds, #/hr	4	0	0	4	0	1
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	90	56	59	78	74	75
Heavy Vehicles, %	1	0	1	2	2	4
Mvmt Flow	196	264	220	87	107	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	311	0	-	0	924	269
Stage 1	-	-	-	-	268	-
Stage 2	-	-	-	-	656	-
Critical Hdwy	4.11	-	-	-	6.42	6.24
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.209	-	-	-	3.518	3.336
Pot Cap-1 Maneuver	1255	-	-	-	299	765
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	516	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1249	-	-	-	242	761
Mov Cap-2 Maneuver	-	-	-	-	242	-
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	514	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	27.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1249	-	-	-	332
HCM Lane V/C Ratio	0.157	-	-	-	0.534
HCM Control Delay (s)	8.4	0	-	-	27.6
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.6	-	-	-	3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	350	24	99	228	32	9	67	86	9	72	18
Future Volume (vph)	28	350	24	107	228	32	9	68	113	9	72	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	12	12	14	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.990			0.985			0.919			0.973	
Flt Protected		0.995			0.985			0.998			0.996	
Satd. Flow (prot)	0	1486	0	0	1729	0	0	1581	0	0	1614	0
Flt Permitted		0.995			0.985			0.998			0.996	
Satd. Flow (perm)	0	1486	0	0	1729	0	0	1581	0	0	1614	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		459			455			883			496	
Travel Time (s)		10.4			10.3			20.1			11.3	
Confl. Peds. (#/hr)	14		7	7		14	2		3	3		2
Peak Hour Factor	0.63	0.90	0.69	0.70	0.81	0.60	0.67	0.66	0.65	0.67	0.63	0.57
Heavy Vehicles (%)	0%	2%	5%	2%	3%	0%	0%	2%	3%	25%	2%	13%
Adj. Flow (vph)	44	389	35	153	281	53	13	103	174	13	114	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	468	0	0	487	0	0	290	0	0	159	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	1.14	1.30	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.0%		ICU Level of Service C	
Analysis Period (min) 15			

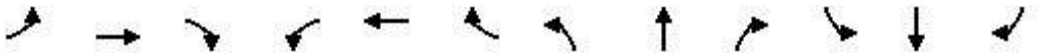
Intersection	
Int Delay, s/veh	57

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	350	24	99	228	32	9	67	86	9	72	18
Future Vol, veh/h	28	350	24	107	228	32	9	68	113	9	72	18
Conflicting Peds, #/hr	14	0	7	7	0	14	2	0	3	3	0	2
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	63	90	69	70	81	60	67	66	65	67	63	57
Heavy Vehicles, %	0	2	5	2	3	0	0	2	3	25	2	13
Mvmt Flow	44	389	35	153	281	53	13	103	174	13	114	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	348	0	0	431	0	0	1191	1156	417	1264	1147	324
Stage 1	-	-	-	-	-	-	502	502	-	628	628	-
Stage 2	-	-	-	-	-	-	689	654	-	636	519	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.52	6.23	7.35	6.52	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.35	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.35	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4.018	3.327	3.725	4.018	3.417
Pot Cap-1 Maneuver	1222	-	-	1129	-	-	166	197	634	131	199	692
Stage 1	-	-	-	-	-	-	555	542	-	434	476	-
Stage 2	-	-	-	-	-	-	439	463	-	430	533	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1204	-	-	1121	-	-	53	153	627	37	154	681
Mov Cap-2 Maneuver	-	-	-	-	-	-	53	153	-	37	154	-
Stage 1	-	-	-	-	-	-	524	512	-	407	390	-
Stage 2	-	-	-	-	-	-	246	379	-	236	504	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	2.7	167.1	187.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	241	1204	-	-	1121	-	-	138
HCM Lane V/C Ratio	1.205	0.037	-	-	0.136	-	-	1.154
HCM Control Delay (s)	167.1	8.1	0	-	8.7	0	-	187.3
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	14	0.1	-	-	0.5	-	-	9.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	134	28	23	187	32	39	89	21	25	51	10
Future Volume (vph)	18	154	28	23	199	32	40	89	21	25	51	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	15	12	12	13	12
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
Ped Bike Factor												
Frt		0.977			0.979			0.982			0.981	
Flt Protected		0.995			0.994			0.987			0.983	
Satd. Flow (prot)	0	1651	0	0	1517	0	0	1775	0	0	1639	0
Flt Permitted		0.995			0.994			0.987			0.983	
Satd. Flow (perm)	0	1651	0	0	1517	0	0	1775	0	0	1639	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			695			637			578	
Travel Time (s)		9.3			15.8			14.5			13.1	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.67	0.82	0.63	0.66	0.88	0.66	0.67	0.65	0.68	0.58	0.77	0.56
Heavy Vehicles (%)	0%	0%	4%	5%	1%	7%	0%	2%	11%	4%	2%	11%
Adj. Flow (vph)	27	188	44	35	226	48	60	137	31	43	66	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	259	0	0	309	0	0	228	0	0	127	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	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.01	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	9.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	134	28	23	187	32	39	89	21	25	51	10
Future Vol, veh/h	18	154	28	23	199	32	40	89	21	25	51	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	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	67	82	63	66	88	66	67	65	68	58	77	56
Heavy Vehicles, %	0	0	4	5	1	7	0	2	11	4	2	11
Mvmt Flow	27	188	44	35	226	48	60	137	31	43	66	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	274	0	0	232	0	0	626	608	212	670	606	250
Stage 1	-	-	-	-	-	-	264	264	-	320	320	-
Stage 2	-	-	-	-	-	-	362	344	-	350	286	-
Critical Hdwy	4.1	-	-	4.15	-	-	7.1	6.52	6.31	7.14	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.14	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.14	5.52	-
Follow-up Hdwy	2.2	-	-	2.245	-	-	3.5	4.018	3.399	3.536	4.018	3.399
Pot Cap-1 Maneuver	1301	-	-	1318	-	-	400	410	806	368	411	767
Stage 1	-	-	-	-	-	-	746	690	-	687	652	-
Stage 2	-	-	-	-	-	-	661	637	-	662	675	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1301	-	-	1318	-	-	326	387	805	246	388	767
Mov Cap-2 Maneuver	-	-	-	-	-	-	326	387	-	246	388	-
Stage 1	-	-	-	-	-	-	728	673	-	671	631	-
Stage 2	-	-	-	-	-	-	559	617	-	494	659	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.9	25.8	21.4
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	395	1301	-	-	1318	-	-	345
HCM Lane V/C Ratio	0.576	0.021	-	-	0.026	-	-	0.369
HCM Control Delay (s)	25.8	7.8	0	-	7.8	0	-	21.4
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	3.5	0.1	-	-	0.1	-	-	1.7

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	64	59	70	504	330	133
Future Volume (vph)	64	59	70	504	330	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.930				0.960	
Flt Protected	0.976			0.992		
Satd. Flow (prot)	1536	0	0	1642	1609	0
Flt Permitted	0.976			0.992		
Satd. Flow (perm)	1536	0	0	1642	1609	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	756			591	599	
Travel Time (s)	17.2			13.4	13.6	
Confl. Peds. (#/hr)	3		2			2
Confl. Bikes (#/hr)						1
Peak Hour Factor	0.85	0.74	0.63	0.83	0.63	0.60
Heavy Vehicles (%)	0%	2%	5%	3%	2%	2%
Adj. Flow (vph)	75	80	111	607	524	222
Shared Lane Traffic (%)						
Lane Group Flow (vph)	155	0	0	718	746	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 80.1%		ICU Level of Service D	
Analysis Period (min) 15			

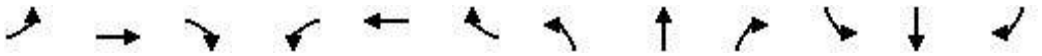
Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	64	59	70	504	330	133
Future Vol, veh/h	64	59	70	504	330	133
Conflicting Peds, #/hr	3	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	74	63	83	63	60
Heavy Vehicles, %	0	2	5	3	2	2
Mvmt Flow	75	80	111	607	524	222

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1469	637	748	0	-	0
Stage 1	637	-	-	-	-	-
Stage 2	832	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.245	-	-	-
Pot Cap-1 Maneuver	142	477	847	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	113	476	845	-	-	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	425	-	-	-	-	-
Stage 2	430	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	80	1.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	845	-	186	-	-
HCM Lane V/C Ratio	0.131	-	0.833	-	-
HCM Control Delay (s)	9.9	0	80	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.5	-	5.9	-	-



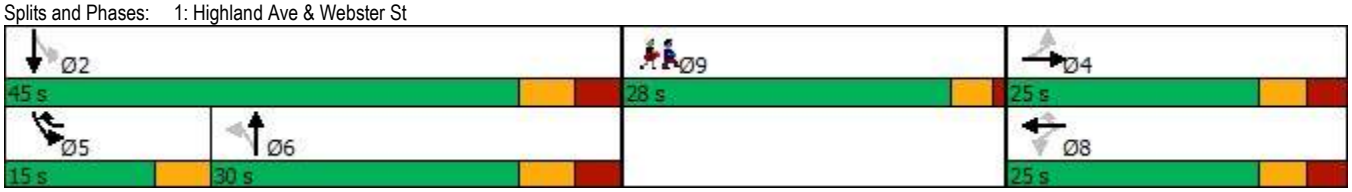
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	261	40	25	173	237	32	427	42	282	622	70
Future Volume (vph)	72	261	40	25	173	237	32	518	42	282	771	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	10	10	12	10	10	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Frt		0.983				0.850		0.989			0.987	
Flt Protected		0.990			0.994		0.950			0.950		
Satd. Flow (prot)	0	3244	0	0	1739	1507	1636	1752	0	1685	1727	0
Flt Permitted		0.738			0.876		0.169			0.145		
Satd. Flow (perm)	0	2414	0	0	1532	1462	290	1752	0	257	1727	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								4				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			193			991			1083	
Travel Time (s)		8.6			4.4			22.5			24.6	
Confl. Peds. (#/hr)	6		3	3		6	8		2	2		8
Confl. Bikes (#/hr)			3						2			1
Peak Hour Factor	0.93	0.95	0.91	0.88	0.84	0.66	0.80	0.78	0.80	0.52	0.88	0.85
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	3%	0%	0%	0%	1%	2%
Adj. Flow (vph)	77	275	44	28	206	359	40	664	53	542	876	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	396	0	0	234	359	40	717	0	542	958	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.09	1.09	1.09	1.09	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phase	4	4		8	8	5	6	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	10.0	10.0		6.0	10.0	
Minimum Split (s)	12.5	12.5		12.5	12.5	10.0	17.5	17.5		10.0	17.5	
Total Split (s)	25.0	25.0		25.0	25.0	15.0	30.0	30.0		15.0	45.0	
Total Split (%)	25.5%	25.5%		25.5%	25.5%	15.3%	30.6%	30.6%		15.3%	45.9%	
Maximum Green (s)	18.5	18.5		18.5	18.5	11.0	22.5	22.5		11.0	37.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	29%
Maximum Green (s)	24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	0.0	3.5	3.5		0.0	3.5	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		-2.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0	7.5	7.5		2.0	7.5	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		17.0			17.0	31.0	23.4	23.4		44.7	39.0	
Actuated g/C Ratio		0.20			0.20	0.36	0.27	0.27		0.53	0.46	
v/c Ratio		0.82			0.77	0.67	0.51	1.48		1.50	1.21	
Control Delay		50.6			53.1	30.6	58.6	254.8		261.3	133.4	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		50.6			53.1	30.6	58.6	254.8		261.3	133.4	
LOS		D			D	C	E	F		F	F	
Approach Delay		50.6			39.5			244.4			179.6	
Approach LOS		D			D			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 98			
Actuated Cycle Length: 85.1			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.50			
Intersection Signal Delay: 153.4		Intersection LOS: F	
Intersection Capacity Utilization 89.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Highland Ave & Webster St



Lane Group	Ø9
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	44
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

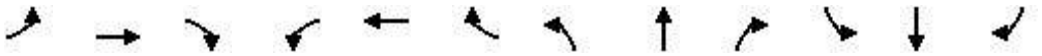
Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	396	234	359	40	717	542	958
v/c Ratio	0.82	0.77	0.67	0.51	1.48	1.50	1.21
Control Delay	50.6	53.1	30.6	58.6	254.8	261.3	133.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.6	53.1	30.6	58.6	254.8	261.3	133.4
Queue Length 50th (ft)	127	141	183	22	~678	~464	~820
Queue Length 95th (ft)	#211	#236	185	#64	#746	#277	#1025
Internal Link Dist (ft)	299	113			911		1003
Turn Bay Length (ft)				60			
Base Capacity (vph)	545	346	538	79	484	361	790
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.68	0.67	0.51	1.48	1.50	1.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

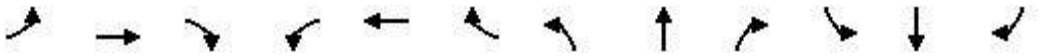
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	261	40	25	173	237	32	427	42	282	622	70
Future Volume (vph)	72	261	40	25	173	237	32	518	42	282	771	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	12	10	10	10	10	12	10	10	12
Total Lost time (s)		6.5			6.5	4.0	7.5	7.5		2.0	7.5	
Lane Util. Factor		0.95			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3240			1738	1481	1632	1752		1685	1727	
Flt Permitted		0.74			0.88	1.00	0.17	1.00		0.14	1.00	
Satd. Flow (perm)		2415			1533	1481	291	1752		257	1727	
Peak-hour factor, PHF	0.93	0.95	0.91	0.88	0.84	0.66	0.80	0.78	0.80	0.52	0.88	0.85
Adj. Flow (vph)	77	275	44	28	206	359	40	664	52	542	876	82
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	396	0	0	234	359	40	714	0	542	958	0
Confl. Peds. (#/hr)	6		3	3		6	8		2	2		8
Confl. Bikes (#/hr)			3						2			1
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	3%	0%	0%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		17.0			17.0	28.4	23.6	23.6		39.0	39.0	
Effective Green, g (s)		17.0			17.0	28.4	23.6	23.6		41.0	39.0	
Actuated g/C Ratio		0.20			0.20	0.33	0.27	0.27		0.47	0.45	
Clearance Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		474			301	486	79	478		343	778	
v/s Ratio Prot						0.10		c0.41		c0.24	0.55	
v/s Ratio Perm		c0.16			0.15	0.15	0.14			0.50		
v/c Ratio		0.84			0.78	0.74	0.51	1.49		1.58	1.23	
Uniform Delay, d1		33.4			33.0	25.8	26.5	31.4		23.6	23.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.6			10.9	5.0	1.9	233.1		274.7	115.2	
Delay (s)		45.0			43.9	30.8	28.4	264.6		298.3	139.0	
Level of Service		D			D	C	C	F		F	F	
Approach Delay (s)		45.0			35.9			252.1			196.5	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	161.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	86.5	Sum of lost time (s)	22.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	89	83	2	24	1	128	422	12	13	611	66
Future Volume (vph)	46	89	93	2	24	1	139	506	12	13	748	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	11	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.950			0.989			0.997			0.984	
Flt Protected		0.990			0.996			0.987			0.999	
Satd. Flow (prot)	0	1628	0	0	1628	0	0	1710	0	0	1712	0
Flt Permitted		0.990			0.996			0.987			0.999	
Satd. Flow (perm)	0	1628	0	0	1628	0	0	1710	0	0	1712	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		695			444			621			443	
Travel Time (s)		15.8			10.1			14.1			10.1	
Confl. Peds. (#/hr)	8					8	11		9	9		11
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.71	0.66	0.80	0.50	0.61	0.25	0.62	0.81	0.69	0.50	0.98	0.74
Heavy Vehicles (%)	3%	0%	4%	0%	0%	0%	1%	2%	0%	0%	1%	5%
Adj. Flow (vph)	65	135	116	4	39	4	224	625	17	26	763	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	316	0	0	47	0	0	866	0	0	894	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	1.14	1.10	1.14	1.14	1.19	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	89	83	2	24	1	128	422	12	13	611	66
Future Vol, veh/h	46	89	93	2	24	1	139	506	12	13	748	78
Conflicting Peds, #/hr	8	0	0	0	0	8	11	0	9	9	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	66	80	50	61	25	62	81	69	50	98	74
Heavy Vehicles, %	3	0	4	0	0	0	1	2	0	0	1	5
Mvmt Flow	65	135	116	4	39	4	224	625	17	26	763	105

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1990	1978	827	2084	2022	651	879	0	0	651	0	0
Stage 1	879	879	-	1091	1091	-	-	-	-	-	-	-
Stage 2	1111	1099	-	993	931	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.5	6.24	7.1	6.5	6.2	4.11	-	-	4.1	-	-
Critical Hdwy Stg 1	6.13	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4	3.336	3.5	4	3.3	2.209	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 45	~ 63	368	39	59	472	773	-	-	945	-	-
Stage 1	341	368	-	263	293	-	-	-	-	-	-	-
Stage 2	253	291	-	298	348	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 32	364	-	~ 30	464	764	-	-	938	-	-
Mov Cap-2 Maneuver	-	~ 32	-	-	~ 30	-	-	-	-	-	-	-
Stage 1	183	344	-	142	158	-	-	-	-	-	-	-
Stage 2	101	157	-	117	325	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			3	0.3
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	764	-	-	-	-	938	-	-
HCM Lane V/C Ratio	0.293	-	-	-	-	0.028	-	-
HCM Control Delay (s)	11.7	0	-	-	-	8.9	0	-
HCM Lane LOS	B	A	-	-	-	A	A	-
HCM 95th %tile Q(veh)	1.2	-	-	-	-	0.1	-	-

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

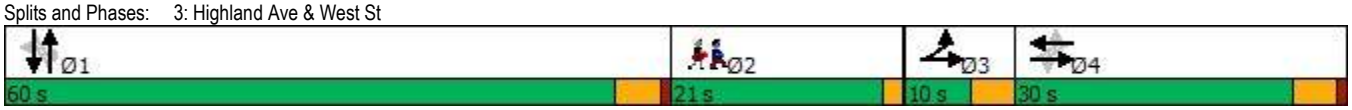
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Future Volume (vph)	141	213	45	62	173	38	25	496	47	48	536	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	9	10	12	12	13	12	12	13	12
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.98	0.99			0.99			0.99	
Frt		0.972			0.970			0.984			0.959	
Flt Protected	0.950			0.950				0.998			0.997	
Satd. Flow (prot)	1433	1473	0	1462	1536	0	0	1712	0	0	1643	0
Flt Permitted	0.336			0.566				0.931			0.927	
Satd. Flow (perm)	503	1473	0	856	1536	0	0	1597	0	0	1527	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		455			303			836			621	
Travel Time (s)		10.3			6.9			19.0			14.1	
Confl. Peds. (#/hr)	7		11	11		7	14		21	21		14
Confl. Bikes (#/hr)						1			1			1
Peak Hour Factor	0.69	0.92	0.83	0.66	0.84	0.73	0.82	0.96	0.64	0.81	0.88	0.89
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	0%	1%	0%	2%	2%	1%
Adj. Flow (vph)	204	232	54	94	206	52	30	517	73	59	609	290
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	286	0	94	258	0	0	620	0	0	958	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)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.14	1.30	1.25	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Detector Phase	3	3 4		4	4		1	1		1	1	
Switch Phase												
Minimum Initial (s)	6.0			6.0	6.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.0			11.0	11.0		15.0	15.0		15.0	15.0	
Total Split (s)	10.0			30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	8.3%			24.8%	24.8%		49.6%	49.6%		49.6%	49.6%	
Maximum Green (s)	6.0			25.0	25.0		55.0	55.0		55.0	55.0	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	17%
Maximum Green (s)	19.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0			4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0			1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.0			5.0	5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			4.0	4.0		2.0	2.0		2.0	2.0	
Recall Mode	None			None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	29.4	33.5		22.3	22.3			55.9			55.9	
Actuated g/C Ratio	0.27	0.30		0.20	0.20			0.51			0.51	
v/c Ratio	1.10	0.64		0.54	0.83			0.76			1.23	
Control Delay	131.4	42.2		54.5	66.1			32.7			144.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	131.4	42.2		54.5	66.1			32.7			144.2	
LOS	F	D		D	E			C			F	
Approach Delay		79.3			63.0			32.7			144.2	
Approach LOS		E			E			C			F	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 121			
Actuated Cycle Length: 110			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.23			
Intersection Signal Delay: 90.7		Intersection LOS: F	
Intersection Capacity Utilization 91.1%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Highland Ave & West St



Lane Group	Ø2
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	24
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

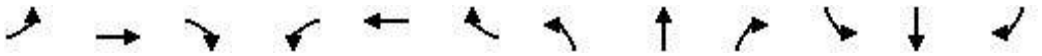
Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	204	286	94	258	620	958
v/c Ratio	1.10	0.64	0.54	0.83	0.76	1.23
Control Delay	131.4	42.2	54.5	66.1	32.7	144.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.4	42.2	54.5	66.1	32.7	144.2
Queue Length 50th (ft)	~153	195	66	194	422	~993
Queue Length 95th (ft)	#196	295	86	#292	#644	#1205
Internal Link Dist (ft)		375		223	756	541
Turn Bay Length (ft)			150			
Base Capacity (vph)	186	490	197	354	811	776
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.58	0.48	0.73	0.76	1.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

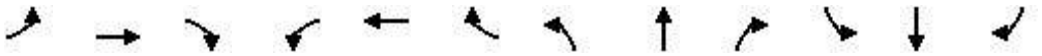
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Future Volume (vph)	141	213	45	62	173	38	25	496	47	48	536	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	12	9	10	12	12	13	12	12	13	12
Total Lost time (s)	4.0	4.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		0.98	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.97			0.98			0.96	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1430	1473		1436	1536			1712			1643	
Flt Permitted	0.34	1.00		0.57	1.00			0.93			0.93	
Satd. Flow (perm)	506	1473		856	1536			1597			1527	
Peak-hour factor, PHF	0.69	0.92	0.83	0.66	0.84	0.73	0.82	0.96	0.64	0.81	0.88	0.89
Adj. Flow (vph)	204	232	54	94	206	52	30	517	73	59	609	290
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	204	286	0	94	258	0	0	620	0	0	958	0
Confl. Peds. (#/hr)	7		11	11		7	14		21	21		14
Confl. Bikes (#/hr)						1			1			1
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	0%	1%	0%	2%	2%	1%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	3 4			4			1			1	
Permitted Phases	4			4			1			1		
Actuated Green, G (s)	28.4	32.4		22.3	22.3			55.9			55.9	
Effective Green, g (s)	28.4	32.4		22.3	22.3			55.9			55.9	
Actuated g/C Ratio	0.26	0.29		0.20	0.20			0.50			0.50	
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	
Vehicle Extension (s)	2.0			4.0	4.0			2.0			2.0	
Lane Grp Cap (vph)	180	431		172	309			806			771	
v/s Ratio Prot	c0.06	0.19			0.17							
v/s Ratio Perm	c0.23			0.11				0.39			c0.63	
v/c Ratio	1.13	0.66		0.55	0.83			0.77			1.24	
Uniform Delay, d1	40.7	34.4		39.7	42.4			22.2			27.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	107.5	3.0		4.4	18.1			4.0			120.0	
Delay (s)	148.2	37.3		44.1	60.5			26.2			147.4	
Level of Service	F	D		D	E			C			F	
Approach Delay (s)		83.5			56.1			26.2			147.4	
Approach LOS		F			E			C			F	

Intersection Summary			
HCM 2000 Control Delay	90.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	110.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Future Volume (vph)	45	0	192	93	49	40	100	556	0	0	626	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	9	11	9	12	11	13	12	12	16	12
Storage Length (ft)	0		25	50		0	60		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97		0.99	0.98		1.00				1.00	
Frt		0.888			0.924						0.993	
Flt Protected		0.991		0.950			0.950					
Satd. Flow (prot)	0	1313	0	1570	1399	0	1570	1750	0	0	1902	0
Flt Permitted		0.914		0.418			0.168					
Satd. Flow (perm)	0	1208	0	685	1399	0	276	1750	0	0	1902	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		258			55							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1036			474			1055			1271	
Travel Time (s)		23.5			10.8			24.0			28.9	
Confl. Peds. (#/hr)	6		9	9		6	19		20	20		19
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.83	0.92	0.74	0.93	0.90	0.73	0.79	0.91	0.92	0.92	0.87	0.84
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	54	0	259	100	54	55	127	611	0	0	720	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	313	0	100	109	0	127	611	0	0	757	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)		11			11			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.30	1.19	1.30	1.14	1.19	1.10	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2			2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	20	100		20	100		20	100			100	
Trailing Detector (ft)	0	0		0	0		0	0			0	
Detector 1 Position(ft)	0	0		0	0		0	0			0	
Detector 1 Size(ft)	20	6		20	6		20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0			12.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0			40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%			44.4%	
Maximum Green (s)	23.0	23.0		23.0	23.0		33.0	33.0			33.0	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		Max	Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.4		14.4	14.4		34.6	34.6			34.6	
Actuated g/C Ratio		0.21		0.21	0.21		0.49	0.49			0.49	
v/c Ratio		0.69		0.71	0.33		0.93	0.71			0.81	
Control Delay		15.4		55.4	17.3		91.8	25.1			29.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		15.4		55.4	17.3		91.8	25.1			29.0	
LOS		B		E	B		F	C			C	
Approach Delay		15.4			35.5			36.6			29.0	
Approach LOS		B			D			D			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 70			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 30.3		Intersection LOS: C	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Highland Ave & Rosemary St

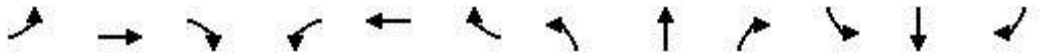
Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	27
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	313	100	109	127	611	757
v/c Ratio	0.69	0.71	0.33	0.93	0.71	0.81
Control Delay	15.4	55.4	17.3	91.8	25.1	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	55.4	17.3	91.8	25.1	29.0
Queue Length 50th (ft)	16	33	16	35	140	188
Queue Length 95th (ft)	110	#115	67	#170	#550	#667
Internal Link Dist (ft)	956		394		975	1191
Turn Bay Length (ft)		50		60		
Base Capacity (vph)	585	236	518	136	865	940
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.42	0.21	0.93	0.71	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Future Volume (vph)	45	0	192	93	49	40	100	556	0	0	626	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	9	11	9	12	11	13	12	12	16	12
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		0.97		1.00	0.98		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		0.99	1.00		1.00	1.00			1.00	
Frt		0.89		1.00	0.92		1.00	1.00			0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1306		1555	1398		1563	1750			1903	
Flt Permitted		0.91		0.42	1.00		0.17	1.00			1.00	
Satd. Flow (perm)		1204		684	1398		277	1750			1903	
Peak-hour factor, PHF	0.83	0.92	0.74	0.93	0.90	0.73	0.79	0.91	0.92	0.92	0.87	0.84
Adj. Flow (vph)	54	0	259	100	54	55	127	611	0	0	720	37
RTOR Reduction (vph)	0	205	0	0	44	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	108	0	100	65	0	127	611	0	0	757	0
Confl. Peds. (#/hr)	6		9	9		6	19		20	20		19
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		14.4		14.4	14.4		34.6	34.6			34.6	
Effective Green, g (s)		14.4		14.4	14.4		34.6	34.6			34.6	
Actuated g/C Ratio		0.20		0.20	0.20		0.49	0.49			0.49	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		245		139	284		135	856			931	
v/s Ratio Prot					0.05			0.35			0.40	
v/s Ratio Perm		0.09		c0.15			c0.46					
v/c Ratio		0.44		0.72	0.23		0.94	0.71			0.81	
Uniform Delay, d1		24.6		26.3	23.5		17.1	14.2			15.3	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.3		16.3	0.4		63.0	5.0			7.7	
Delay (s)		25.9		42.6	23.9		80.1	19.2			23.0	
Level of Service		C		D	C		F	B			C	
Approach Delay (s)		25.9			32.8			29.7			23.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

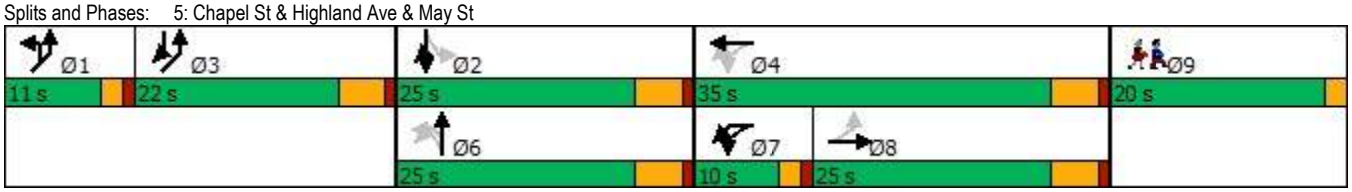
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Future Volume (vph)	61	104	28	23	10	42	129	24	4	19	161	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12	10	12	12	12	16	12
Storage Length (ft)	0		0			0		0		0		0
Storage Lanes	0		0			0		0		0		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99					0.99				0.99	
Frt		0.962					0.985				0.981	
Flt Protected		0.987					0.984				0.995	
Satd. Flow (prot)	0	1630	0	0	0	0	1542	0	0	0	1865	0
Flt Permitted		0.802					0.742				0.536	
Satd. Flow (perm)	0	1322	0	0	0	0	1160	0	0	0	1003	0
Right Turn on Red				No				Yes				No
Satd. Flow (RTOR)							5					
Link Speed (mph)		30					30				30	
Link Distance (ft)		453					923				945	
Travel Time (s)		10.3					21.0				21.5	
Confl. Peds. (#/hr)	4		5	3	3	5		4	3	12		13
Confl. Bikes (#/hr)			1	1				1				2
Peak Hour Factor	0.81	0.81	0.63	0.66	0.56	0.63	0.84	0.79	1.00	0.85	0.76	0.64
Heavy Vehicles (%)	2%	1%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	75	128	44	35	18	67	154	30	4	22	212	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	282	0	0	0	0	269	0	0	0	277	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Left	Left	Right
Median Width(ft)		0					0				0	
Link Offset(ft)		0					0				0	
Crosswalk Width(ft)		16					16				16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2		1	1	2	
Detector Template	Left	Thru			Left	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100		20	20	100	
Trailing Detector (ft)	0	0			0	0	0		0	0	0	
Detector 1 Position(ft)	0	0			0	0	0		0	0	0	
Detector 1 Size(ft)	20	6			20	20	6		20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Detector Phase	8	8			7	7	4		6	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0			2.0	2.0	6.0		6.0	6.0	6.0	
Minimum Split (s)	11.0	11.0			6.0	6.0	11.0		11.0	11.0	11.0	
Total Split (s)	25.0	25.0			10.0	10.0	35.0		25.0	25.0	25.0	
Total Split (%)	22.1%	22.1%			8.8%	8.8%	31.0%		22.1%	22.1%	22.1%	
Maximum Green (s)	20.0	20.0			7.0	7.0	30.0		20.0	20.0	20.0	

Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Lane Configurations										
Traffic Volume (vph)	41	215	355	162	18	182	19	10		
Future Volume (vph)	41	221	473	162	18	263	19	10		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	10	11	12	10	11	11	11		
Storage Length (ft)	0		120			0	60			
Storage Lanes	0		1			2	1			
Taper Length (ft)	25					25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00			0.97	0.99				
Frt			0.850			0.982				
Flt Protected		0.990			0.950	0.958				
Satd. Flow (prot)	0	1571	1391	0	1516	1521	0	0		
Flt Permitted		0.672			0.950	0.958				
Satd. Flow (perm)	0	1063	1391	0	1466	1517	0	0		
Right Turn on Red				No				Yes		
Satd. Flow (RTOR)						116				
Link Speed (mph)		30				30				
Link Distance (ft)		644				580				
Travel Time (s)		14.6				13.2				
Confl. Peds. (#/hr)	13		3	12	12	4	13	5		
Confl. Bikes (#/hr)			1	1						
Peak Hour Factor	0.62	0.81	0.96	0.86	0.50	0.83	0.85	0.45		
Heavy Vehicles (%)	3%	0%	1%	1%	0%	1%	0%	11%		
Adj. Flow (vph)	66	273	493	188	36	317	22	22		
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	339	681	0	36	361	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Right	Left	Left	Right	Right		
Median Width(ft)		0				21				
Link Offset(ft)		0				0				
Crosswalk Width(ft)		16				16				
Two way Left Turn Lane										
Headway Factor	1.14	1.25	1.19	1.14	1.25	1.19	1.19	1.19		
Turning Speed (mph)	15		9	9	15	15	9	9		
Number of Detectors	1	2	1		1	1				
Detector Template	Left	Thru	Right		Left	Left				
Leading Detector (ft)	20	100	20		20	20				
Trailing Detector (ft)	0	0	0		0	0				
Detector 1 Position(ft)	0	0	0		0	0				
Detector 1 Size(ft)	20	6	20		20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)		94								
Detector 2 Size(ft)		6								
Detector 2 Type		Cl+Ex								
Detector 2 Channel										
Detector 2 Extend (s)		0.0								
Turn Type	Perm	NA	custom		Prot	Prot				
Protected Phases		2	2 3		1	1 3			3	9
Permitted Phases	2									
Detector Phase	2	2	2 3		1	1 3				
Switch Phase										
Minimum Initial (s)	6.0	6.0			1.0				4.0	5.0
Minimum Split (s)	11.0	11.0			6.0				9.0	20.0
Total Split (s)	25.0	25.0			11.0				22.0	20.0
Total Split (%)	22.1%	22.1%			9.7%				19%	18%
Maximum Green (s)	20.0	20.0			8.0				17.0	18.0

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Yellow Time (s)	4.0	4.0			2.0	2.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0				0.0	
Total Lost Time (s)		5.0					5.0				5.0	
Lead/Lag	Lag	Lag			Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None			None	None	None		Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		29.3					29.3				20.2	
Actuated g/C Ratio		0.29					0.29				0.20	
v/c Ratio		0.73					0.78				1.37	
Control Delay		46.2					51.4				228.8	
Queue Delay		0.0					0.0				0.0	
Total Delay		46.2					51.4				228.8	
LOS		D					D				F	
Approach Delay		46.2					51.4				228.8	
Approach LOS		D					D				F	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 113			
Actuated Cycle Length: 100.1			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.58			
Intersection Signal Delay: 128.6		Intersection LOS: F	
Intersection Capacity Utilization 79.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Chapel St & Highland Ave & May St



Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Yellow Time (s)	4.0	4.0			2.0				4.0	2.0
All-Red Time (s)	1.0	1.0			1.0				1.0	0.0
Lost Time Adjust (s)		0.0			0.0					
Total Lost Time (s)		5.0			3.0					
Lead/Lag					Lead				Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0
Recall Mode	Min	Min			None				None	None
Walk Time (s)										7.0
Flash Dont Walk (s)										11.0
Pedestrian Calls (#/hr)										18
Act Effct Green (s)		20.2	42.4		8.1	30.3				
Actuated g/C Ratio		0.20	0.42		0.08	0.30				
v/c Ratio		1.58	1.15		0.30	0.67				
Control Delay		313.3	117.3		53.9	29.0				
Queue Delay		0.0	0.0		0.0	0.0				
Total Delay		313.3	117.3		53.9	29.0				
LOS		F	F		D	C				
Approach Delay		182.4				31.3				
Approach LOS		F				C				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR	NEL2	NEL
Lane Group Flow (vph)	282	269	277	339	681	36	361
v/c Ratio	0.73	0.78	1.37	1.58	1.15	0.30	0.67
Control Delay	46.2	51.4	228.8	313.3	117.3	53.9	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	51.4	228.8	313.3	117.3	53.9	29.0
Queue Length 50th (ft)	142	136	~209	~278	~454	20	121
Queue Length 95th (ft)	#264	#298	#362	#483	#867	33	243
Internal Link Dist (ft)	373	843	865	564			500
Turn Bay Length (ft)					120		
Base Capacity (vph)	387	354	202	214	590	122	541
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.76	1.37	1.58	1.15	0.30	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

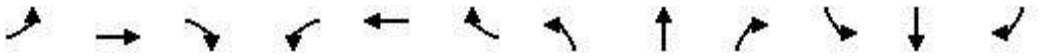
Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Future Volume (vph)	61	104	28	23	10	42	129	24	4	19	161	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12	10	12	12	12	16	12
Total Lost time (s)		5.0					5.0				5.0	
Lane Util. Factor		1.00					1.00				1.00	
Frpb, ped/bikes		0.99					1.00				0.99	
Flpb, ped/bikes		1.00					1.00				1.00	
Frt		0.96					0.98				0.98	
Flt Protected		0.99					0.98				1.00	
Satd. Flow (prot)		1633					1539				1864	
Flt Permitted		0.80					0.74				0.54	
Satd. Flow (perm)		1327					1160				1003	
Peak-hour factor, PHF	0.81	0.81	0.63	0.66	0.56	0.63	0.84	0.79	1.00	0.85	0.76	0.64
Adj. Flow (vph)	75	128	44	35	18	67	154	30	4	22	212	39
RTOR Reduction (vph)	0	0	0	0	0	0	4	0	0	0	0	0
Lane Group Flow (vph)	0	282	0	0	0	0	265	0	0	0	277	0
Confl. Peds. (#/hr)	4		5	3	3	5		4	3	12		13
Confl. Bikes (#/hr)			1	1				1				2
Heavy Vehicles (%)	2%	1%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Actuated Green, G (s)		29.4					29.4				20.2	
Effective Green, g (s)		29.4					29.4				20.2	
Actuated g/C Ratio		0.29					0.29				0.20	
Clearance Time (s)		5.0					5.0				5.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		385					336				200	
v/s Ratio Prot												
v/s Ratio Perm		0.21					c0.23				0.28	
v/c Ratio		0.73					0.79				1.39	
Uniform Delay, d1		32.4					33.1				40.5	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		7.0					11.9				201.1	
Delay (s)		39.4					45.0				241.7	
Level of Service		D					D				F	
Approach Delay (s)		39.4					45.0				241.7	
Approach LOS		D					D				F	

Intersection Summary			
HCM 2000 Control Delay	134.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	101.3	Sum of lost time (s)	23.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	41	215	355	162	18	182	19	10
Future Volume (vph)	41	221	473	162	18	263	19	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	10	11	11	11
Total Lost time (s)		5.0	5.0		3.0	3.0		
Lane Util. Factor		1.00	1.00		1.00	1.00		
Frpb, ped/bikes		1.00	1.00		1.00	0.99		
Flpb, ped/bikes		1.00	1.00		1.00	1.00		
Frt		1.00	0.85		1.00	0.98		
Flt Protected		0.99	1.00		0.95	0.96		
Satd. Flow (prot)		1567	1391		1516	1521		
Flt Permitted		0.67	1.00		0.95	0.96		
Satd. Flow (perm)		1063	1391		1516	1521		
Peak-hour factor, PHF	0.62	0.81	0.96	0.86	0.50	0.83	0.85	0.45
Adj. Flow (vph)	66	273	493	188	36	317	22	22
RTOR Reduction (vph)	0	0	0	0	0	84	0	0
Lane Group Flow (vph)	0	339	681	0	36	277	0	0
Confl. Peds. (#/hr)	13		3	12	12	4	13	5
Confl. Bikes (#/hr)			1	1				
Heavy Vehicles (%)	3%	0%	1%	1%	0%	1%	0%	11%
Turn Type	Perm	NA	custom		Prot	Prot		
Protected Phases		2	2 3		1	1 3		
Permitted Phases	2							
Actuated Green, G (s)		20.2	42.4		8.1	28.3		
Effective Green, g (s)		20.2	42.4		8.1	28.3		
Actuated g/C Ratio		0.20	0.42		0.08	0.28		
Clearance Time (s)		5.0			3.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		211	582		121	424		
v/s Ratio Prot			c0.49		0.02	c0.18		
v/s Ratio Perm		c0.32						
v/c Ratio		1.61	1.17		0.30	0.65		
Uniform Delay, d1		40.5	29.4		43.9	32.2		
Progression Factor		1.00	1.00		1.00	1.00		
Incremental Delay, d2		294.0	93.9		1.4	3.6		
Delay (s)		334.5	123.3		45.3	35.8		
Level of Service		F	F		D	D		
Approach Delay (s)		193.5				36.7		
Approach LOS		F				D		

Intersection Summary



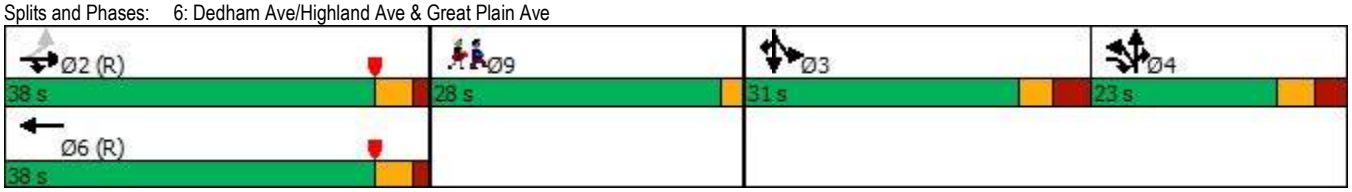
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Future Volume (vph)	34	264	300	0	320	74	208	112	72	80	192	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	10	10	10	10	10	10	10	10	12
Storage Length (ft)	0		0	0		0	0		35	0		90
Storage Lanes	0		1	0		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		0.99				0.99	
Frt			0.850		0.972				0.850			0.850
Flt Protected		0.993					0.950				0.984	
Satd. Flow (prot)	0	1569	1391	0	2886	0	1486	1596	1357	0	1560	1454
Flt Permitted		0.757					0.950				0.984	
Satd. Flow (perm)	0	1192	1391	0	2886	0	1468	1596	1357	0	1546	1454
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									95			95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		238			434			312			945	
Travel Time (s)		5.4			9.9			7.1			21.5	
Confl. Peds. (#/hr)	27		39	39		27	9		14	14		9
Confl. Bikes (#/hr)			3			2			1			
Peak Hour Factor	0.63	0.82	0.93	0.25	0.85	0.87	0.86	0.77	0.80	0.74	0.84	0.84
Heavy Vehicles (%)	7%	0%	1%	0%	1%	0%	2%	0%	0%	0%	1%	0%
Adj. Flow (vph)	54	322	323	0	376	85	242	145	90	108	229	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	376	323	0	461	0	242	145	90	0	337	76
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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1		2		1	2	1	1	2	1
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20		100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20		6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Detector Phase	2	2	2 4		6		4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0			10.0		11.5	11.5	11.5	11.5	11.5	11.5
Total Split (s)	38.0	38.0			38.0		23.0	23.0	23.0	31.0	31.0	31.0
Total Split (%)	31.7%	31.7%			31.7%		19.2%	19.2%	19.2%	25.8%	25.8%	25.8%
Maximum Green (s)	33.0	33.0			33.0		16.5	16.5	16.5	24.5	24.5	24.5

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	26.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5			1.5		3.0	3.0	3.0	3.5	3.5	3.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Lead/Lag							Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Min	C-Min			C-Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		33.0	59.4		33.0		19.9	19.9	19.9		27.5	27.5
Actuated g/C Ratio		0.28	0.50		0.28		0.17	0.17	0.17		0.23	0.23
v/c Ratio		1.15	0.47		0.58		0.98	0.55	0.30		0.94	0.19
Control Delay		117.1	16.5		41.0		105.4	56.8	11.2		81.8	5.8
Queue Delay		1.2	2.9		55.5		2.9	0.0	0.0		0.0	0.0
Total Delay		118.3	19.4		96.6		108.3	56.8	11.2		81.8	5.9
LOS		F	B		F		F	E	B		F	A
Approach Delay		72.6			96.6			74.3			67.9	
Approach LOS		E			F			E			E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.15			
Intersection Signal Delay: 77.4		Intersection LOS: E	
Intersection Capacity Utilization 77.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Dedham Ave/Highland Ave & Great Plain Ave



Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	44
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

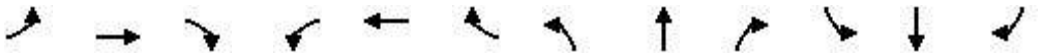
Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	376	323	461	242	145	90	337	76
v/c Ratio	1.15	0.47	0.58	0.98	0.55	0.30	0.94	0.19
Control Delay	117.1	16.5	41.0	105.4	56.8	11.2	81.8	5.8
Queue Delay	1.2	2.9	55.5	2.9	0.0	0.0	0.0	0.0
Total Delay	118.3	19.4	96.6	108.3	56.8	11.2	81.8	5.9
Queue Length 50th (ft)	~329	80	162	~225	108	0	~270	0
Queue Length 95th (ft)	m#450	m135	204	#366	151	32	#413	22
Internal Link Dist (ft)	158		354		232		865	
Turn Bay Length (ft)						35		90
Base Capacity (vph)	327	688	793	246	264	303	358	406
Starvation Cap Reductn	32	256	0	0	0	0	0	0
Spillback Cap Reductn	0	0	380	3	0	0	0	14
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.27	0.75	1.12	1.00	0.55	0.30	0.94	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Future Volume (vph)	34	264	300	0	320	74	208	112	72	80	192	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	11	10	10	10	10	10	10	10	10	12
Total Lost time (s)		5.0	5.0		5.0		6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00		1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)		1564	1391		2886		1486	1596	1357		1560	1454
Flt Permitted		0.76	1.00		1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (perm)		1192	1391		2886		1486	1596	1357		1560	1454
Peak-hour factor, PHF	0.63	0.82	0.93	0.25	0.85	0.87	0.86	0.77	0.80	0.74	0.84	0.84
Adj. Flow (vph)	54	322	323	0	376	85	242	145	90	108	229	76
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	75	0	0	59
Lane Group Flow (vph)	0	376	323	0	461	0	242	145	15	0	337	17
Confl. Peds. (#/hr)	27		39	39		27	9		14	14		9
Confl. Bikes (#/hr)			3			2			1			
Heavy Vehicles (%)	7%	0%	1%	0%	1%	0%	2%	0%	0%	0%	1%	0%
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Actuated Green, G (s)		32.6	59.0		32.6		19.9	19.9	19.9		27.5	27.5
Effective Green, g (s)		32.6	52.5		32.6		19.9	19.9	19.9		27.5	27.5
Actuated g/C Ratio		0.27	0.44		0.27		0.17	0.17	0.17		0.23	0.23
Clearance Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		2.0			2.0		2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		323	608		784		246	264	225		357	333
v/s Ratio Prot			0.23		0.16		c0.16	0.09	0.01		c0.22	0.01
v/s Ratio Perm		c0.32										
v/c Ratio		1.16	0.53		0.59		0.98	0.55	0.07		0.94	0.05
Uniform Delay, d1		43.7	24.7		37.9		49.9	45.9	42.2		45.5	36.1
Progression Factor		0.62	0.69		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		94.3	0.3		3.2		52.3	1.3	0.0		32.9	0.0
Delay (s)		121.6	17.4		41.1		102.2	47.2	42.3		78.4	36.1
Level of Service		F	B		D		F	D	D		E	D
Approach Delay (s)		73.4			41.1			74.2			70.6	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	65.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

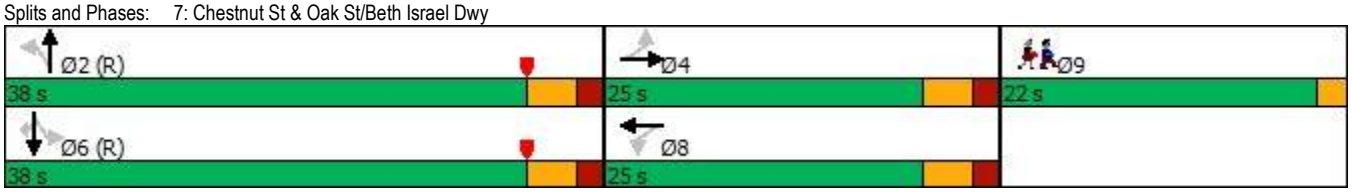
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Future Volume (vph)	57	1	128	6	2	9	102	458	12	4	641	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	8	8	11	11	11	9	9	12	12	9	9
Storage Length (ft)	0		0	0		0	80		0	0		150
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.907			0.929			0.996				0.850
Flt Protected		0.985			0.982		0.950					
Satd. Flow (prot)	0	1298	0	0	1478	0	1433	1503	0	0	1509	1283
Flt Permitted		0.899			0.899		0.217				0.998	
Satd. Flow (perm)	0	1185	0	0	1353	0	327	1503	0	0	1506	1283
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								2				59
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			314			227			439	
Travel Time (s)		13.8			7.1			5.2			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	1	139	7	2	10	111	498	13	4	697	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	202	0	0	19	0	111	511	0	0	701	85
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			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.19	1.19	1.19	1.30	1.30	1.14	1.14	1.30	1.30
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	25.0	25.0		25.0	25.0		38.0	38.0		38.0	38.0	38.0
Total Split (%)	29.4%	29.4%		29.4%	29.4%		44.7%	44.7%		44.7%	44.7%	44.7%
Maximum Green (s)	20.0	20.0		20.0	20.0		33.0	33.0		33.0	33.0	33.0
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0			5.0	5.0

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	22.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		20.0			20.0		46.2	46.2			46.2	46.2
Actuated g/C Ratio		0.24			0.24		0.54	0.54			0.54	0.54
v/c Ratio		0.73			0.06		0.63	0.63			0.86	0.12
Control Delay		47.1			26.0		40.3	21.9			34.5	15.7
Queue Delay		0.0			0.0		0.0	0.0			0.6	0.0
Total Delay		47.1			26.0		40.3	21.9			35.1	15.7
LOS		D			C		D	C			D	B
Approach Delay		47.1			26.0			25.2			33.0	
Approach LOS		D			C			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 31.7		Intersection LOS: C	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Chestnut St & Oak St/Beth Israel Dwy

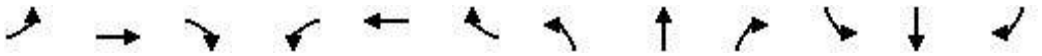


Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lane Group	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	202	19	111	511	701	85
v/c Ratio	0.73	0.06	0.63	0.63	0.86	0.12
Control Delay	47.1	26.0	40.3	21.9	34.5	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.6	0.0
Total Delay	47.1	26.0	40.3	21.9	35.1	15.7
Queue Length 50th (ft)	100	8	28	129	112	1
Queue Length 95th (ft)	#202	25	#156	#436	m#619	m42
Internal Link Dist (ft)	526	234		147	359	
Turn Bay Length (ft)			80			150
Base Capacity (vph)	278	318	177	817	818	724
Starvation Cap Reductn	0	0	0	0	16	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.06	0.63	0.63	0.87	0.12

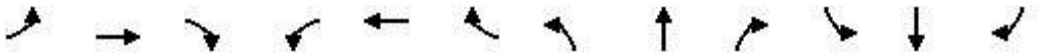
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Future Volume (vph)	57	1	128	6	2	9	102	458	12	4	641	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	11	11	11	9	9	12	12	9	9
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	1.00
Frt		0.91			0.93		1.00	1.00			1.00	0.85
Flt Protected		0.98			0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1298			1478		1433	1503			1508	1282
Flt Permitted		0.90			0.90		0.22	1.00			1.00	1.00
Satd. Flow (perm)		1185			1353		327	1503			1506	1282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	1	139	7	2	10	111	498	13	4	697	85
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	28
Lane Group Flow (vph)	0	202	0	0	19	0	111	510	0	0	701	57
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		20.0			20.0		45.0	45.0			45.0	45.0
Effective Green, g (s)		20.0			20.0		45.0	45.0			45.0	45.0
Actuated g/C Ratio		0.24			0.24		0.53	0.53			0.53	0.53
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		278			318		173	795			797	678
v/s Ratio Prot								0.34				
v/s Ratio Perm		c0.17			0.01		0.34				c0.47	0.04
v/c Ratio		0.73			0.06		0.64	0.64			0.88	0.08
Uniform Delay, d1		30.0			25.2		14.3	14.3			17.6	9.9
Progression Factor		1.00			1.00		1.00	1.00			1.31	2.29
Incremental Delay, d2		15.3			0.4		16.9	4.0			9.4	0.2
Delay (s)		45.3			25.6		31.1	18.2			32.5	22.7
Level of Service		D			C		C	B			C	C
Approach Delay (s)		45.3			25.6			20.5			31.4	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



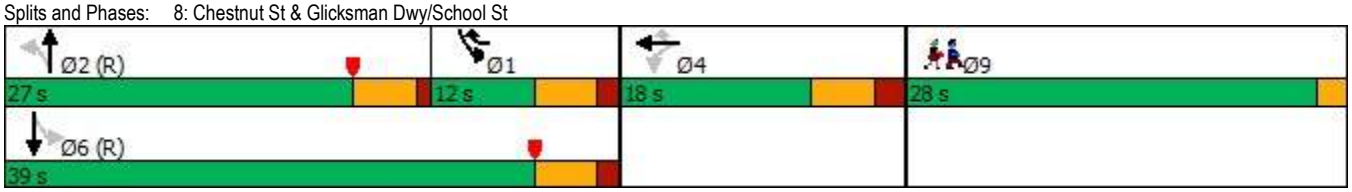
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Future Volume (vph)	0	0	0	179	6	70	6	437	215	63	584	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	9	13	9	12	12	9	12	12
Storage Length (ft)	0		0	0		150	40		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			70			70			100		
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						0.850		0.950			0.999	
Flt Protected					0.954		0.950			0.950		
Satd. Flow (prot)	0	0	0	0	1439	1473	1433	1593	0	1433	1675	0
Flt Permitted					0.954		0.269			0.173		
Satd. Flow (perm)	0	0	0	0	1439	1473	406	1593	0	261	1675	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						76		28				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		162			420			439			782	
Travel Time (s)		3.7			9.5			10.0			17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	195	7	76	7	475	234	68	635	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	202	76	7	709	0	68	638	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.30	1.30	1.10	1.30	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2		1	2	
Detector Template				Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)				20	100	20	20	100		20	100	
Trailing Detector (ft)				0	0	0	0	0		0	0	
Detector 1 Position(ft)				0	0	0	0	0		0	0	
Detector 1 Size(ft)				20	6	20	20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Detector Phase				4	4	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)				6.0	6.0	6.0	2.0	2.0		6.0	10.0	
Minimum Split (s)				12.0	12.0	11.5	7.0	7.0		11.5	15.5	
Total Split (s)				18.0	18.0	12.0	27.0	27.0		12.0	39.0	
Total Split (%)				21.2%	21.2%	14.1%	31.8%	31.8%		14.1%	45.9%	
Maximum Green (s)				12.0	12.0	6.5	22.0	22.0		6.5	33.5	
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)				2.0	2.0	1.5	1.0	1.0		1.5	1.5	
Lost Time Adjust (s)					0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	33%
Maximum Green (s)	26.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag						Lag	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode				None	None	None	C-Min	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					12.0	22.1	41.4	41.4		51.5	50.3	
Actuated g/C Ratio					0.14	0.26	0.49	0.49		0.61	0.59	
v/c Ratio					1.00	0.17	0.04	0.90		0.28	0.64	
Control Delay					101.8	7.0	12.2	35.5		22.6	21.1	
Queue Delay					38.8	0.0	0.0	0.0		0.0	0.2	
Total Delay					140.6	7.0	12.2	35.5		22.6	21.3	
LOS					F	A	B	D		C	C	
Approach Delay					104.0			35.3			21.4	
Approach LOS					F			D			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 9 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 40.8		Intersection LOS: D	
Intersection Capacity Utilization 64.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Chestnut St & Glicksman Dwy/School St



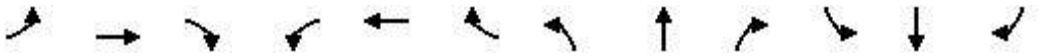
Lane Group	Ø9
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	202	76	7	709	68	638
v/c Ratio	1.00	0.17	0.04	0.90	0.28	0.64
Control Delay	101.8	7.0	12.2	35.5	22.6	21.1
Queue Delay	38.8	0.0	0.0	0.0	0.0	0.2
Total Delay	140.6	7.0	12.2	35.5	22.6	21.3
Queue Length 50th (ft)	109	0	1	270	9	126
Queue Length 95th (ft)	#245	30	m3	#740	49	#548
Internal Link Dist (ft)	340			359		702
Turn Bay Length (ft)		150	40		115	
Base Capacity (vph)	203	407	198	790	248	991
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	67	0	0	0	0	48
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.49	0.19	0.04	0.90	0.27	0.68

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Future Volume (vph)	0	0	0	179	6	70	6	437	215	63	584	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	9	9	13	9	12	12	9	12	12
Total Lost time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frt					1.00	0.85	1.00	0.95		1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1439	1472	1433	1593		1433	1675	
Flt Permitted					0.95	1.00	0.27	1.00		0.17	1.00	
Satd. Flow (perm)					1439	1472	406	1593		261	1675	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	195	7	76	7	475	234	68	635	3
RTOR Reduction (vph)	0	0	0	0	0	61	0	15	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	202	15	7	694	0	68	638	0
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Actuated Green, G (s)					12.0	17.0	39.1	39.1		49.1	49.1	
Effective Green, g (s)					12.0	17.0	39.1	39.1		49.1	49.1	
Actuated g/C Ratio					0.14	0.20	0.46	0.46		0.58	0.58	
Clearance Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Vehicle Extension (s)					3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)					203	389	186	732		219	967	
v/s Ratio Prot						0.00		c0.44		0.02	c0.38	
v/s Ratio Perm					0.14	0.01	0.02			0.16		
v/c Ratio					1.00	0.04	0.04	0.95		0.31	0.66	
Uniform Delay, d1					36.5	27.4	12.6	22.0		24.5	12.2	
Progression Factor					1.00	1.00	0.53	0.61		1.00	1.00	
Incremental Delay, d2					61.4	0.0	0.3	20.8		0.8	3.5	
Delay (s)					97.9	27.5	7.0	34.2		25.3	15.8	
Level of Service					F	C	A	C		C	B	
Approach Delay (s)		0.0			78.6			33.9			16.7	
Approach LOS		A			E			C			B	

Intersection Summary				
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.81			
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	18.5	
Intersection Capacity Utilization	64.9%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	89	594	589	27	14	217
Future Volume (vph)	89	619	604	27	14	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.989		0.878	
Flt Protected		0.992			0.995	
Satd. Flow (prot)	0	2978	2972	0	1433	0
Flt Permitted		0.992			0.995	
Satd. Flow (perm)	0	2978	2972	0	1433	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		180	394		416	
Travel Time (s)		4.1	9.0		9.5	
Confl. Peds. (#/hr)	23			23	1	23
Peak Hour Factor	0.79	0.98	0.92	0.52	0.54	0.90
Heavy Vehicles (%)	1%	1%	1%	0%	8%	0%
Adj. Flow (vph)	113	632	657	52	26	241
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	745	709	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.25	1.25	1.25	1.19	1.19
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			

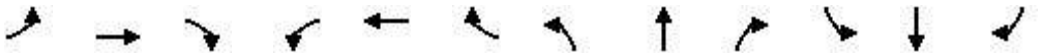
Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	594	589	27	14	217
Future Vol, veh/h	89	619	604	27	14	217
Conflicting Peds, #/hr	23	0	0	23	1	23
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	79	98	92	52	54	90
Heavy Vehicles, %	1	1	1	0	8	0
Mvmt Flow	113	632	657	52	26	241

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	732	0	-	0	1249	401
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	543	-
Critical Hdwy	4.12	-	-	-	6.96	6.9
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	2.21	-	-	-	3.58	3.3
Pot Cap-1 Maneuver	875	-	-	-	157	604
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	530	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	857	-	-	-	120	581
Mov Cap-2 Maneuver	-	-	-	-	120	-
Stage 1	-	-	-	-	340	-
Stage 2	-	-	-	-	519	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	27
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	857	-	-	-	423
HCM Lane V/C Ratio	0.131	-	-	-	0.631
HCM Control Delay (s)	9.8	0.7	-	-	27
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.5	-	-	-	4.2



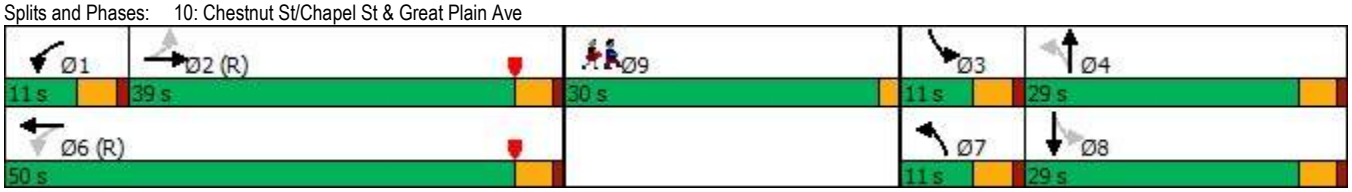
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	501	68	104	442	29	95	178	62	24	305	78
Future Volume (vph)	48	502	83	122	442	29	104	250	73	24	418	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	175		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.99		0.99	0.99		0.99	0.99	
Frt		0.979			0.991			0.967			0.972	
Flt Protected		0.996			0.990		0.950			0.950		
Satd. Flow (prot)	0	2883	0	0	2933	0	1501	1575	0	1516	1576	0
Flt Permitted		0.737			0.585		0.113			0.316		
Satd. Flow (perm)	0	2132	0	0	1726	0	177	1575	0	501	1576	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			238			782			424	
Travel Time (s)		9.0			5.4			17.8			9.6	
Confl. Peds. (#/hr)	18		48	48		18	29		13	13		29
Confl. Bikes (#/hr)												4
Peak Hour Factor	0.80	0.96	0.86	0.84	0.88	0.72	0.80	0.84	0.88	0.69	0.87	0.74
Heavy Vehicles (%)	0%	1%	2%	1%	1%	4%	1%	1%	0%	0%	1%	0%
Adj. Flow (vph)	60	523	97	145	502	40	130	298	83	35	480	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	680	0	0	687	0	130	381	0	35	592	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.19	1.19	1.25	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	39.0	39.0		9.5	50.0		11.0	29.0		11.0	29.0	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	29.0		11.0	29.0	
Total Split (%)	32.5%	32.5%		9.2%	41.7%		9.2%	24.2%		9.2%	24.2%	
Maximum Green (s)	34.5	34.5		6.5	45.5		6.5	24.5		6.5	24.5	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	30.0
Total Split (%)	25%
Maximum Green (s)	28.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		45.5			45.5		41.9	36.2		36.5	29.1	
Actuated g/C Ratio		0.38			0.38		0.35	0.30		0.30	0.24	
v/c Ratio		0.84			1.05		0.74	0.80		0.16	1.55	
Control Delay		45.0			65.2		57.0	56.6		30.5	293.6	
Queue Delay		9.0			19.5		0.0	5.3		0.1	0.0	
Total Delay		54.0			84.7		57.0	61.9		30.6	293.6	
LOS		D			F		E	E		C	F	
Approach Delay		54.0			84.7			60.6			278.9	
Approach LOS		D			F			E			F	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 11 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.55			
Intersection Signal Delay: 120.1		Intersection LOS: F	
Intersection Capacity Utilization 82.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 10: Chestnut St/Chapel St & Great Plain Ave



Lane Group	Ø9
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	54
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

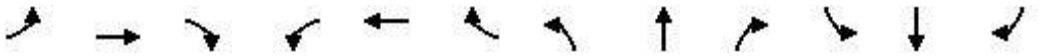
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	680	687	130	381	35	592
v/c Ratio	0.84	1.05	0.74	0.80	0.16	1.55
Control Delay	45.0	65.2	57.0	56.6	30.5	293.6
Queue Delay	9.0	19.5	0.0	5.3	0.1	0.0
Total Delay	54.0	84.7	57.0	61.9	30.6	293.6
Queue Length 50th (ft)	250	~314	75	~333	19	~695
Queue Length 95th (ft)	#356	m#391	#146	#495	33	#879
Internal Link Dist (ft)	314	158		702		344
Turn Bay Length (ft)			175		100	
Base Capacity (vph)	808	654	175	474	218	381
Starvation Cap Reductn	0	78	0	0	0	0
Spillback Cap Reductn	105	0	0	52	16	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.97	1.19	0.74	0.90	0.17	1.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

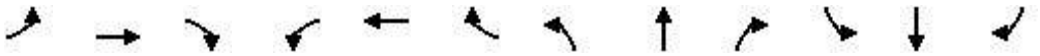
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	501	68	104	442	29	95	178	62	24	305	78
Future Volume (vph)	48	502	83	122	442	29	104	250	73	24	418	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	11	11	10	11	11
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.97		1.00	0.97	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2886			2919		1501	1578		1514	1579	
Flt Permitted		0.74			0.58		0.11	1.00		0.32	1.00	
Satd. Flow (perm)		2136			1725		178	1578		503	1579	
Peak-hour factor, PHF	0.80	0.96	0.86	0.84	0.88	0.72	0.80	0.84	0.88	0.69	0.87	0.74
Adj. Flow (vph)	60	523	97	145	502	40	130	298	83	35	480	112
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	680	0	0	687	0	130	381	0	35	592	0
Confl. Peds. (#/hr)	18		48	48		18	29		13	13		29
Confl. Bikes (#/hr)												4
Heavy Vehicles (%)	0%	1%	2%	1%	1%	4%	1%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		43.3			43.3		45.7	36.2		35.9	30.9	
Effective Green, g (s)		43.3			43.3		45.7	36.2		35.9	30.9	
Actuated g/C Ratio		0.36			0.36		0.38	0.30		0.30	0.26	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		770			622		181	476		192	406	
v/s Ratio Prot							c0.06	0.24		0.01	c0.38	
v/s Ratio Perm		0.32			c0.40		0.21			0.05		
v/c Ratio		0.88			1.10		0.72	0.80		0.18	1.46	
Uniform Delay, d1		36.0			38.4		29.7	38.6		30.9	44.6	
Progression Factor		1.00			0.49		1.00	1.00		1.00	1.00	
Incremental Delay, d2		14.0			63.5		12.8	9.3		0.5	219.4	
Delay (s)		49.9			82.2		42.4	47.9		31.3	264.0	
Level of Service		D			F		D	D		C	F	
Approach Delay (s)		49.9			82.2			46.5			251.0	
Approach LOS		D			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	108.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	109	9	209	120	7	14	4	105	7	0	2
Future Volume (vph)	3	109	9	209	120	7	14	4	105	7	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	14	12	12	13	12	12	10	12
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
Ped Bike Factor												
Frt		0.987			0.997			0.898			0.958	
Flt Protected		0.997			0.969			0.992			0.967	
Satd. Flow (prot)	0	1724	0	0	1751	0	0	1533	0	0	1479	0
Flt Permitted		0.997			0.969			0.992			0.967	
Satd. Flow (perm)	0	1724	0	0	1751	0	0	1533	0	0	1479	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		521			453			566			491	
Travel Time (s)		11.8			10.3			12.9			11.2	
Confl. Peds. (#/hr)	6		4	4		6	5		3	3		5
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.38	0.95	0.67	0.80	0.85	0.75	0.54	0.33	0.88	0.38	0.92	0.25
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	25%	1%	0%	0%	0%
Adj. Flow (vph)	8	115	13	261	141	9	26	12	119	18	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	136	0	0	411	0	0	157	0	0	26	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	1.14	1.10	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	109	9	209	120	7	14	4	105	7	0	2
Future Vol, veh/h	3	109	9	209	120	7	14	4	105	7	0	2
Conflicting Peds, #/hr	6	0	4	4	0	6	5	0	3	3	0	5
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	38	95	67	80	85	75	54	33	88	38	92	25
Heavy Vehicles, %	0	1	0	1	0	0	0	25	1	0	0	0
Mvmt Flow	8	115	13	261	141	9	26	12	119	18	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	156	0	0	132	0	0	819	820	129	880	822	157
Stage 1	-	-	-	-	-	-	142	142	-	674	674	-
Stage 2	-	-	-	-	-	-	677	678	-	206	148	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.1	6.75	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.75	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.75	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.5	4.225	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1436	-	-	1459	-	-	297	285	924	270	311	894
Stage 1	-	-	-	-	-	-	866	737	-	448	457	-
Stage 2	-	-	-	-	-	-	446	418	-	801	779	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1429	-	-	1453	-	-	247	226	917	189	246	885
Mov Cap-2 Maneuver	-	-	-	-	-	-	247	226	-	189	246	-
Stage 1	-	-	-	-	-	-	857	730	-	443	366	-
Stage 2	-	-	-	-	-	-	354	334	-	679	771	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	5.1	14.3	21.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	545	1429	-	-	1453	-	-	248
HCM Lane V/C Ratio	0.289	0.006	-	-	0.18	-	-	0.107
HCM Control Delay (s)	14.3	7.5	0	-	8	0	-	21.2
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.7	-	-	0.4

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	74	93	94	60	88	189
Future Volume (vph)	74	93	94	71	94	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.933		0.918	
Flt Protected		0.981			0.981	
Satd. Flow (prot)	0	1678	1418	0	1633	0
Flt Permitted		0.981			0.981	
Satd. Flow (perm)	0	1678	1418	0	1633	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		525	1036		802	
Travel Time (s)		11.9	23.5		18.2	
Confl. Peds. (#/hr)	12			12	2	1
Peak Hour Factor	0.84	0.66	0.79	0.61	0.65	0.84
Heavy Vehicles (%)	0%	0%	4%	6%	0%	1%
Adj. Flow (vph)	88	141	119	116	145	225
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	229	235	0	370	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.25	1.25	1.05	1.05
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.5%		ICU Level of Service A	
Analysis Period (min) 15			

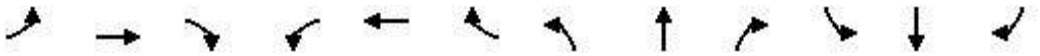
Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	93	94	60	88	189
Future Vol, veh/h	74	93	94	71	94	189
Conflicting Peds, #/hr	12	0	0	12	2	1
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	84	66	79	61	65	84
Heavy Vehicles, %	0	0	4	6	0	1
Mvmt Flow	88	141	119	116	145	225

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	247	0	-	0	508	190
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	319	-
Critical Hdwy	4.1	-	-	-	6.4	6.21
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.309
Pot Cap-1 Maneuver	1331	-	-	-	528	854
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1313	-	-	-	477	842
Mov Cap-2 Maneuver	-	-	-	-	477	-
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	731	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	17.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1313	-	-	-	648
HCM Lane V/C Ratio	0.067	-	-	-	0.57
HCM Control Delay (s)	7.9	0	-	-	17.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	3.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	267	20	137	312	13	13	63	86	13	92	34
Future Volume (vph)	104	267	20	163	312	13	13	64	102	13	93	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	12	12	14	12	12	13	12	12	13	12
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
Ped Bike Factor												
Frt		0.992			0.995			0.930			0.963	
Flt Protected		0.975			0.985			0.995			0.994	
Satd. Flow (prot)	0	1482	0	0	1788	0	0	1614	0	0	1691	0
Flt Permitted		0.975			0.985			0.995			0.994	
Satd. Flow (perm)	0	1482	0	0	1788	0	0	1614	0	0	1691	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		459			455			883			496	
Travel Time (s)		10.4			10.3			20.1			11.3	
Confl. Peds. (#/hr)	11		8	8		11	3		4	4		3
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.26	0.77	0.45	0.97	0.85	0.60	0.60	0.75	0.89	0.60	0.87	0.71
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%
Adj. Flow (vph)	400	347	44	168	367	22	22	85	115	22	107	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	791	0	0	557	0	0	222	0	0	177	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	1.14	1.30	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.2%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	104	267	20	137	312	13	13	63	86	13	92	34
Future Vol, veh/h	104	267	20	163	312	13	13	64	102	13	93	34
Conflicting Peds, #/hr	11	0	8	8	0	11	3	0	4	4	0	3
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	26	77	45	97	85	60	60	75	89	60	87	71
Heavy Vehicles, %	0	1	0	0	0	0	0	2	1	0	0	0
Mvmt Flow	400	347	44	168	367	22	22	85	115	22	107	48

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	400	0	0	399	0	0	1972	1913	381	1998	1924	392
Stage 1	-	-	-	-	-	-	1177	1177	-	725	725	-
Stage 2	-	-	-	-	-	-	795	736	-	1273	1199	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.52	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4.018	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1170	-	-	1171	-	-	47	~ 68	668	45	~ 68	661
Stage 1	-	-	-	-	-	-	235	265	-	420	433	-
Stage 2	-	-	-	-	-	-	384	425	-	207	261	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1157	-	-	1161	-	-	-	~ 30	660	-	~ 30	652
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 30	-	-	~ 30	-
Stage 1	-	-	-	-	-	-	129	146	-	231	349	-
Stage 2	-	-	-	-	-	-	201	343	-	39	144	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.9	2.6		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1157	-	-	1161	-	-	-
HCM Lane V/C Ratio	-	0.346	-	-	0.145	-	-	-
HCM Control Delay (s)	-	9.7	0	-	8.6	0	-	-
HCM Lane LOS	-	A	A	-	A	A	-	-
HCM 95th %tile Q(veh)	-	1.6	-	-	0.5	-	-	-

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	168	65	30	150	39	34	71	23	19	43	12
Future Volume (vph)	13	185	66	30	173	39	35	71	23	19	43	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	15	12	12	13	12
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
Ped Bike Factor												
Frt		0.964			0.980			0.981			0.978	
Flt Protected		0.997			0.993			0.987			0.987	
Satd. Flow (prot)	0	1633	0	0	1526	0	0	1807	0	0	1632	0
Flt Permitted		0.997			0.993			0.987			0.987	
Satd. Flow (perm)	0	1633	0	0	1526	0	0	1807	0	0	1632	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			695			637			578	
Travel Time (s)		9.3			15.8			14.5			13.1	
Confl. Peds. (#/hr)	1		6	6		1			3	3		
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.60	0.79	0.70	0.68	0.85	0.88	0.71	0.64	0.88	0.71	0.70	0.69
Heavy Vehicles (%)	0%	1%	0%	4%	1%	3%	3%	0%	0%	12%	0%	9%
Adj. Flow (vph)	22	234	94	44	204	44	49	111	26	27	61	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	350	0	0	292	0	0	186	0	0	105	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	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.01	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	168	65	30	150	39	34	71	23	19	43	12
Future Vol, veh/h	13	185	66	30	173	39	35	71	23	19	43	12
Conflicting Peds, #/hr	1	0	6	6	0	1	0	0	3	3	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	60	79	70	68	85	88	71	64	88	71	70	69
Heavy Vehicles, %	0	1	0	4	1	3	3	0	0	12	0	9
Mvmt Flow	22	234	94	44	204	44	49	111	26	27	61	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	249	0	0	334	0	0	684	668	290	712	693	227
Stage 1	-	-	-	-	-	-	331	331	-	315	315	-
Stage 2	-	-	-	-	-	-	353	337	-	397	378	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.13	6.5	6.2	7.22	6.5	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	6.22	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	6.22	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.527	4	3.3	3.608	4	3.381
Pot Cap-1 Maneuver	1328	-	-	1214	-	-	361	382	754	335	369	795
Stage 1	-	-	-	-	-	-	680	649	-	675	659	-
Stage 2	-	-	-	-	-	-	662	645	-	609	619	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1327	-	-	1205	-	-	288	355	747	233	343	794
Mov Cap-2 Maneuver	-	-	-	-	-	-	288	355	-	233	343	-
Stage 1	-	-	-	-	-	-	661	631	-	660	630	-
Stage 2	-	-	-	-	-	-	559	617	-	473	602	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.2	25.4	20.7
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	359	1327	-	-	1205	-	-	334
HCM Lane V/C Ratio	0.519	0.016	-	-	0.037	-	-	0.316
HCM Control Delay (s)	25.4	7.8	0	-	8.1	0	-	20.7
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	2.9	0.1	-	-	0.1	-	-	1.3

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	103	73	38	340	604	180
Future Volume (vph)	103	73	38	340	605	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.943				0.969	
Flt Protected	0.972			0.994		
Satd. Flow (prot)	1548	0	0	1700	1644	0
Flt Permitted	0.972			0.994		
Satd. Flow (perm)	1548	0	0	1700	1644	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	756			591	599	
Travel Time (s)	17.2			13.4	13.6	
Confl. Peds. (#/hr)	6		5			5
Peak Hour Factor	0.86	0.83	0.77	0.87	0.87	0.87
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%
Adj. Flow (vph)	120	88	49	391	695	207
Shared Lane Traffic (%)						
Lane Group Flow (vph)	208	0	0	440	902	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 73.1%		ICU Level of Service D	
Analysis Period (min) 15			

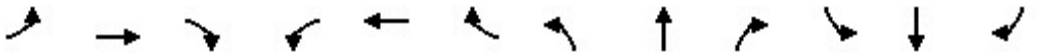
Intersection	
Int Delay, s/veh	13.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	103	73	38	340	604	180
Future Vol, veh/h	103	73	38	340	605	180
Conflicting Peds, #/hr	6	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	83	77	87	87	87
Heavy Vehicles, %	0	3	0	0	1	0
Mvmt Flow	120	88	49	391	695	207

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1299	804	907	0	-	0
Stage 1	804	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.2	-	-	-
Pot Cap-1 Maneuver	180	381	759	-	-	-
Stage 1	444	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	163	379	755	-	-	-
Mov Cap-2 Maneuver	163	-	-	-	-	-
Stage 1	405	-	-	-	-	-
Stage 2	614	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	99.8	1.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	755	-	215	-	-
HCM Lane V/C Ratio	0.065	-	0.966	-	-
HCM Control Delay (s)	10.1	0	99.8	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.2	-	8.4	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Future Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	10	10	12	10	10	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00			1.00	0.98	1.00				1.00	
Frt		0.981				0.850		0.991			0.988	
Flt Protected		0.984			0.996		0.950			0.950		
Satd. Flow (prot)	0	3087	0	0	1676	1507	1636	1737	0	3268	1730	0
Flt Permitted		0.630			0.948		0.395			0.118		
Satd. Flow (perm)	0	1976	0	0	1595	1474	679	1737	0	406	1730	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								3				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			193			991			1083	
Travel Time (s)		8.6			4.4			22.5			24.6	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.80	0.93	0.66	0.91	0.73	0.53	0.67	0.66	0.52	0.47	0.81	0.91
Heavy Vehicles (%)	4%	4%	12%	10%	5%	0%	3%	1%	4%	0%	1%	2%
Adj. Flow (vph)	114	191	44	19	248	474	67	659	40	332	623	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	349	0	0	267	474	67	699	0	332	675	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			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.09	1.09	1.09	1.09	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phase	4	4		8	8	5	6	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	10.0	10.0		6.0	10.0	
Minimum Split (s)	12.5	12.5		12.5	12.5	10.0	17.5	17.5		10.0	17.5	
Total Split (s)	26.0	26.0		26.0	26.0	16.0	50.0	50.0		16.0	66.0	
Total Split (%)	21.7%	21.7%		21.7%	21.7%	13.3%	41.7%	41.7%		13.3%	55.0%	
Maximum Green (s)	19.5	19.5		19.5	19.5	12.0	42.5	42.5		12.0	58.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	0.0	3.5	3.5		0.0	3.5	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		19.7			19.7	34.4	43.0	43.0		62.7	59.2	
Actuated g/C Ratio		0.20			0.20	0.35	0.44	0.44		0.64	0.61	
v/c Ratio		0.91dl			0.83	0.91	0.22	0.91		0.54	0.64	
Control Delay		62.3			60.8	51.6	22.6	44.6		13.1	18.3	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		62.3			60.8	51.6	22.6	44.6		13.1	18.3	
LOS		E			E	D	C	D		B	B	
Approach Delay		62.3			55.0			42.7			16.6	
Approach LOS		E			D			D			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 97.6			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 39.1		Intersection LOS: D	
Intersection Capacity Utilization 80.1%		ICU Level of Service D	
Analysis Period (min) 15			
dl Defacto Left Lane. Recode with 1 though lane as a left lane.			

Splits and Phases: 1: Highland Ave & Webster St

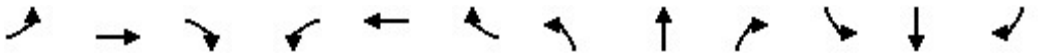
Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	349	267	474	67	699	332	675
v/c Ratio	0.91dl	0.83	0.91	0.22	0.91	0.54	0.64
Control Delay	62.3	60.8	51.6	22.6	44.6	13.1	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	60.8	51.6	22.6	44.6	13.1	18.3
Queue Length 50th (ft)	103	148	231	23	352	31	212
Queue Length 95th (ft)	#258	#278	245	54	#475	46	494
Internal Link Dist (ft)	299	113			911		1003
Turn Bay Length (ft)				60			
Base Capacity (vph)	399	322	523	298	767	616	1049
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.83	0.91	0.22	0.91	0.54	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Future Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	12	10	10	10	10	12	10	10	12
Total Lost time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Lane Util. Factor		0.95			1.00	1.00	1.00	1.00		0.97	1.00	
Frpb, ped/bikes		1.00			1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.98			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3086			1677	1487	1634	1738		3268	1731	
Flt Permitted		0.63			0.95	1.00	0.40	1.00		0.12	1.00	
Satd. Flow (perm)		1976			1596	1487	680	1738		407	1731	
Peak-hour factor, PHF	0.80	0.93	0.66	0.91	0.73	0.53	0.67	0.66	0.52	0.47	0.81	0.91
Adj. Flow (vph)	114	191	44	19	248	474	67	659	40	332	623	52
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	349	0	0	267	474	67	697	0	332	675	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	4%	12%	10%	5%	0%	3%	1%	4%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		19.7			19.7	31.8	43.1	43.1		59.2	59.2	
Effective Green, g (s)		19.7			19.7	31.8	43.1	43.1		59.2	59.2	
Actuated g/C Ratio		0.20			0.20	0.32	0.43	0.43		0.59	0.59	
Clearance Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		386			311	469	290	743		582	1016	
v/s Ratio Prot						c0.12		c0.40		0.07	0.39	
v/s Ratio Perm		0.18			0.17	0.20	0.10			0.27		
v/c Ratio		0.91dl			0.86	1.01	0.23	0.94		0.57	0.66	
Uniform Delay, d1		39.6			39.2	34.5	18.3	27.6		16.7	14.1	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		23.4			19.6	44.2	0.1	19.1		0.8	1.3	
Delay (s)		63.0			58.8	78.7	18.5	46.7		17.6	15.4	
Level of Service		E			E	E	B	D		B	B	
Approach Delay (s)		63.0			71.6			44.2			16.1	
Approach LOS		E			E			D			B	

Intersection Summary			
HCM 2000 Control Delay	43.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.8	Sum of lost time (s)	22.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	73	72	4	54	18	117	426	14	10	477	65
Future Volume (vph)	35	73	72	4	54	18	117	426	14	10	477	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	11	12	12	13	12	12	13	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						1.00				
Frt		0.950			0.950			0.992			0.983	
Flt Protected		0.989			0.997		0.950				0.999	
Satd. Flow (prot)	0	1592	0	0	1531	0	1562	1665	0	0	1672	0
Flt Permitted		0.918			0.979		0.331				0.987	
Satd. Flow (perm)	0	1477	0	0	1504	0	544	1665	0	0	1652	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			29			4			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		695			444			621			443	
Travel Time (s)		15.8			10.1			14.1			10.1	
Confl. Peds. (#/hr)	1								1			
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.60	0.65	0.73	0.50	0.80	0.40	0.69	0.80	0.46	0.75	0.90	0.81
Heavy Vehicles (%)	0%	5%	6%	0%	4%	0%	4%	5%	8%	0%	4%	3%
Adj. Flow (vph)	58	112	99	8	68	45	170	533	30	13	530	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	269	0	0	121	0	170	563	0	0	623	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.19	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			1			1	
Permitted Phases	4			4			1			1		
Detector Phase	4	4		4	4		1	1		1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	9.5		9.5	9.5		9.5	9.5		9.5	9.5	
Total Split (s)	20.0	20.0		20.0	20.0		47.0	47.0		47.0	47.0	
Total Split (%)	22.2%	22.2%		22.2%	22.2%		52.2%	52.2%		52.2%	52.2%	
Maximum Green (s)	15.5	15.5		15.5	15.5		42.5	42.5		42.5	42.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5			4.5	
Lead/Lag							Lead	Lead		Lead	Lead	
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	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		16.2			16.2		33.8	33.8			33.8	
Actuated g/C Ratio		0.22			0.22		0.47	0.47			0.47	
v/c Ratio		0.76			0.34		0.67	0.72			0.80	
Control Delay		44.5			26.2		31.9	22.4			26.2	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		44.5			26.2		31.9	22.4			26.2	
LOS		D			C		C	C			C	
Approach Delay		44.5			26.3			24.6			26.2	
Approach LOS		D			C			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 72.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 28.3		Intersection LOS: C	
Intersection Capacity Utilization 88.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Highland Ave & Hunnewell St

Lane Group	Ø2
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	21.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	Min
Walk Time (s)	7.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	269	121	170	563	623
v/c Ratio	0.76	0.34	0.67	0.72	0.80
Control Delay	44.5	26.2	31.9	22.4	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	26.2	31.9	22.4	26.2
Queue Length 50th (ft)	93	32	45	153	177
Queue Length 95th (ft)	#162	85	99	304	#446
Internal Link Dist (ft)	615	364		541	363
Turn Bay Length (ft)			60		
Base Capacity (vph)	353	360	334	1026	1020
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.76	0.34	0.51	0.55	0.61

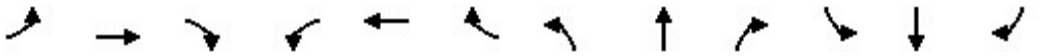
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	73	72	4	54	18	117	426	14	10	477	65
Future Volume (vph)	35	73	72	4	54	18	117	426	14	10	477	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	11	12	12	13	12	12	13	12
Total Lost time (s)		4.5			4.5		4.5	4.5			4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Frt		0.95			0.95		1.00	0.99			0.98	
Flt Protected		0.99			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1592			1530		1562	1665			1671	
Flt Permitted		0.92			0.98		0.33	1.00			0.99	
Satd. Flow (perm)		1478			1503		544	1665			1651	
Peak-hour factor, PHF	0.60	0.65	0.73	0.50	0.80	0.40	0.69	0.80	0.46	0.75	0.90	0.81
Adj. Flow (vph)	58	112	99	8	68	45	170	532	30	13	530	80
RTOR Reduction (vph)	0	22	0	0	22	0	0	2	0	0	6	0
Lane Group Flow (vph)	0	247	0	0	99	0	170	561	0	0	617	0
Confl. Peds. (#/hr)	1								1			
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	5%	6%	0%	4%	0%	4%	5%	8%	0%	4%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			1			1	
Permitted Phases	4			4			1			1		
Actuated Green, G (s)		16.2			16.2		33.8	33.8			33.8	
Effective Green, g (s)		16.2			16.2		33.8	33.8			33.8	
Actuated g/C Ratio		0.23			0.23		0.47	0.47			0.47	
Clearance Time (s)		4.5			4.5		4.5	4.5			4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		333			339		256	784			778	
v/s Ratio Prot								0.34				
v/s Ratio Perm		c0.17			0.07		0.31				c0.37	
v/c Ratio		0.74			0.29		0.66	0.72			0.79	
Uniform Delay, d1		25.8			23.0		14.6	15.1			16.0	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		8.7			0.5		6.3	3.1			5.6	
Delay (s)		34.5			23.5		20.9	18.2			21.6	
Level of Service		C			C		C	B			C	
Approach Delay (s)		34.5			23.5			18.9			21.6	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	11.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



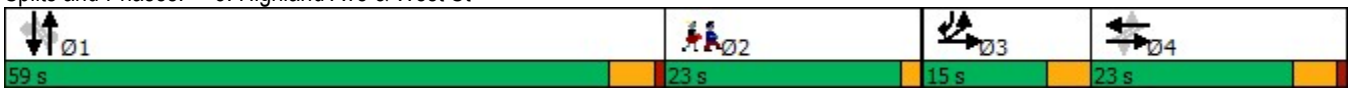
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Future Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	9	10	12	12	13	12	12	13	12
Storage Length (ft)	0		0	150		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.99	0.99			0.99			1.00	0.98
Frt		0.974			0.968			0.991				0.850
Flt Protected	0.950			0.950				0.997			0.997	
Satd. Flow (prot)	1462	1479	0	1037	1467	0	0	1659	0	0	1683	1384
Flt Permitted	0.405			0.578				0.965			0.947	
Satd. Flow (perm)	622	1479	0	623	1467	0	0	1606	0	0	1597	1350
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		455			303			836			621	
Travel Time (s)		10.3			6.9			19.0			14.1	
Confl. Peds. (#/hr)	2		6	6		2	5		46	46		5
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.89	0.90	0.61	0.53	0.78	0.82	0.64	0.74	0.72	0.63	0.87	0.69
Heavy Vehicles (%)	0%	1%	0%	41%	6%	0%	6%	5%	0%	0%	5%	5%
Adj. Flow (vph)	198	248	51	36	181	50	31	524	42	27	380	271
Shared Lane Traffic (%)												
Lane Group Flow (vph)	198	299	0	36	231	0	0	597	0	0	407	271
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)		9			9			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.14	1.30	1.25	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	3 4			4			1			1	3
Permitted Phases	4			4			1			1		1
Detector Phase	3	3 4		4	4		1	1		1	1	3
Switch Phase												
Minimum Initial (s)	6.0			6.0	6.0		10.0	10.0		10.0	10.0	6.0
Minimum Split (s)	10.0			11.0	11.0		15.0	15.0		15.0	15.0	10.0
Total Split (s)	15.0			23.0	23.0		59.0	59.0		59.0	59.0	15.0
Total Split (%)	12.5%			19.2%	19.2%		49.2%	49.2%		49.2%	49.2%	12.5%
Maximum Green (s)	11.0			18.0	18.0		54.0	54.0		54.0	54.0	11.0
Yellow Time (s)	4.0			4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0			1.0	1.0		1.0	1.0		1.0	1.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0			5.0	5.0			5.0			5.0	4.0
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			4.0	4.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	32.0	36.2		19.2	19.2			41.1			41.1	53.9
Actuated g/C Ratio	0.33	0.37		0.20	0.20			0.42			0.42	0.55
v/c Ratio	0.65	0.54		0.30	0.80			0.88			0.61	0.36
Control Delay	42.8	35.5		50.4	64.7			42.6			26.7	8.6
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	42.8	35.5		50.4	64.7			42.6			26.7	8.6
LOS	D	D		D	E			D			C	A
Approach Delay		38.4			62.8			42.6			19.5	
Approach LOS		D			E			D			B	

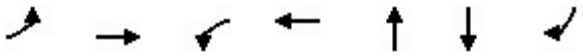
Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 97.5			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 36.5		Intersection LOS: D	
Intersection Capacity Utilization 76.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Highland Ave & West St



Lane Group	Ø2
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	23.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	29
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	198	299	36	231	597	407	271
v/c Ratio	0.65	0.54	0.30	0.80	0.88	0.61	0.36
Control Delay	42.8	35.5	50.4	64.7	42.6	26.7	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.8	35.5	50.4	64.7	42.6	26.7	8.6
Queue Length 50th (ft)	115	188	23	168	383	220	49
Queue Length 95th (ft)	#191	307	34	#279	392	304	54
Internal Link Dist (ft)		375		223	756	541	
Turn Bay Length (ft)			150				50
Base Capacity (vph)	305	549	122	288	948	942	750
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.54	0.30	0.80	0.63	0.43	0.36

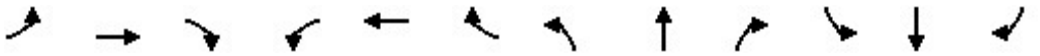
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Future Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	12	9	10	12	12	13	12	12	13	12
Total Lost time (s)	4.0	4.0		5.0	5.0			5.0			5.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.99			1.00	0.98
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.97			0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1461	1480		1026	1467			1658			1681	1358
Flt Permitted	0.41	1.00		0.58	1.00			0.96			0.95	1.00
Satd. Flow (perm)	623	1480		624	1467			1604			1596	1358
Peak-hour factor, PHF	0.89	0.90	0.61	0.53	0.78	0.82	0.64	0.74	0.72	0.63	0.87	0.69
Adj. Flow (vph)	198	248	51	36	181	50	31	524	42	27	380	271
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	198	299	0	36	231	0	0	597	0	0	407	271
Confl. Peds. (#/hr)	2		6	6		2	5		46	46		5
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	1%	0%	41%	6%	0%	6%	5%	0%	0%	5%	5%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	3 4			4			1			1	3
Permitted Phases	4			4			1			1		1
Actuated Green, G (s)	30.9	34.9		19.2	19.2			41.1			41.1	52.8
Effective Green, g (s)	30.9	34.9		19.2	19.2			41.1			41.1	52.8
Actuated g/C Ratio	0.32	0.36		0.20	0.20			0.42			0.42	0.54
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	4.0
Vehicle Extension (s)	2.0			4.0	4.0			2.0			2.0	2.0
Lane Grp Cap (vph)	297	529		122	288			675			672	734
v/s Ratio Prot	c0.08	0.20			c0.16							0.04
v/s Ratio Perm	0.13			0.06				c0.37			0.25	0.16
v/c Ratio	0.67	0.57		0.30	0.80			0.88			0.61	0.37
Uniform Delay, d1	26.6	25.2		33.4	37.4			26.1			22.0	12.8
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	4.3	0.8		1.8	15.5			12.8			1.1	0.1
Delay (s)	31.0	26.1		35.3	52.9			38.9			23.0	13.0
Level of Service	C	C		D	D			D			C	B
Approach Delay (s)		28.0			50.5			38.9			19.0	
Approach LOS		C			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	97.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



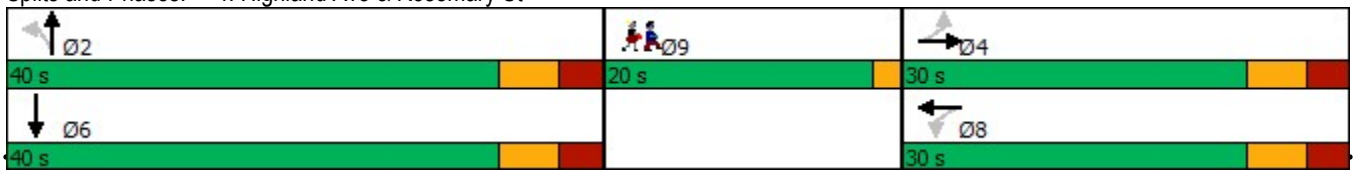
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Future Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	9	11	9	12	11	13	12	12	16	12
Storage Length (ft)	0		25	50		0	60		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.90		0.95	0.99		0.99				1.00	
Frt		0.880			0.965						0.989	
Flt Protected		0.995		0.950			0.950					
Satd. Flow (prot)	0	1207	0	1570	1440	0	1540	1683	0	0	1831	0
Flt Permitted		0.943		0.408			0.371					
Satd. Flow (perm)	0	1142	0	642	1440	0	597	1683	0	0	1831	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		257			17							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1036			474			1055			1271	
Travel Time (s)		23.5			10.8			24.0			28.9	
Confl. Peds. (#/hr)	8		46	46		8	12		17	17		12
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.68	0.92	0.68	0.60	0.59	0.64	0.75	0.83	0.92	0.92	0.79	0.72
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%	2%	5%	0%	0%	4%	8%
Adj. Flow (vph)	31	0	257	90	100	31	149	530	0	0	453	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	288	0	90	131	0	149	530	0	0	495	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)		11			11			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.30	1.19	1.30	1.14	1.19	1.10	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2			2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	20	100		20	100		20	100			100	
Trailing Detector (ft)	0	0		0	0		0	0			0	
Detector 1 Position(ft)	0	0		0	0		0	0			0	
Detector 1 Size(ft)	20	6		20	6		20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0			12.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0			40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%			44.4%	
Maximum Green (s)	23.0	23.0		23.0	23.0		33.0	33.0			33.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		Max	Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.2		14.2	14.2		34.7	34.7			34.7	
Actuated g/C Ratio		0.19		0.19	0.19		0.47	0.47			0.47	
v/c Ratio		0.67		0.73	0.45		0.53	0.67			0.58	
Control Delay		14.5		62.9	29.5		30.1	25.9			22.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		14.5		62.9	29.5		30.1	25.9			22.3	
LOS		B		E	C		C	C			C	
Approach Delay		14.5			43.1			26.8			22.3	
Approach LOS		B			D			C			C	

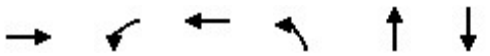
Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 73.9			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 25.5		Intersection LOS: C	
Intersection Capacity Utilization 70.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Highland Ave & Rosemary St



Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	41
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary



Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	288	90	131	149	530	495
v/c Ratio	0.67	0.73	0.45	0.53	0.67	0.58
Control Delay	14.5	62.9	29.5	30.1	25.9	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	62.9	29.5	30.1	25.9	22.3
Queue Length 50th (ft)	14	44	52	60	234	205
Queue Length 95th (ft)	92	58	61	112	#395	296
Internal Link Dist (ft)	956		394		975	1191
Turn Bay Length (ft)		50		60		
Base Capacity (vph)	546	209	482	279	789	858
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.43	0.27	0.53	0.67	0.58

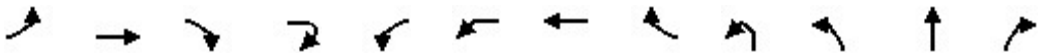
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Future Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	9	11	9	12	11	13	12	12	16	12
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		0.88		1.00	0.99		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		0.94	1.00		0.99	1.00			1.00	
Frt		0.88		1.00	0.96		1.00	1.00			0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1168		1481	1437		1531	1683			1831	
Flt Permitted		0.94		0.41	1.00		0.37	1.00			1.00	
Satd. Flow (perm)		1107		637	1437		598	1683			1831	
Peak-hour factor, PHF	0.68	0.92	0.68	0.60	0.59	0.64	0.75	0.83	0.92	0.92	0.79	0.72
Adj. Flow (vph)	31	0	257	90	100	31	149	530	0	0	453	42
RTOR Reduction (vph)	0	208	0	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	80	0	90	117	0	149	530	0	0	495	0
Confl. Peds. (#/hr)	8		46	46		8	12		17	17		12
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%	2%	5%	0%	0%	4%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		14.2		14.2	14.2		34.7	34.7			34.7	
Effective Green, g (s)		14.2		14.2	14.2		34.7	34.7			34.7	
Actuated g/C Ratio		0.19		0.19	0.19		0.47	0.47			0.47	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		211		121	275		279	787			856	
v/s Ratio Prot					0.08			c0.31			0.27	
v/s Ratio Perm		0.07		c0.14			0.25					
v/c Ratio		0.38		0.74	0.43		0.53	0.67			0.58	
Uniform Delay, d1		26.2		28.3	26.4		14.0	15.3			14.4	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.1		21.7	1.1		7.2	4.6			2.8	
Delay (s)		27.3		50.0	27.5		21.2	19.9			17.3	
Level of Service		C		D	C		C	B			B	
Approach Delay (s)		27.3			36.6			20.2			17.3	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	74.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



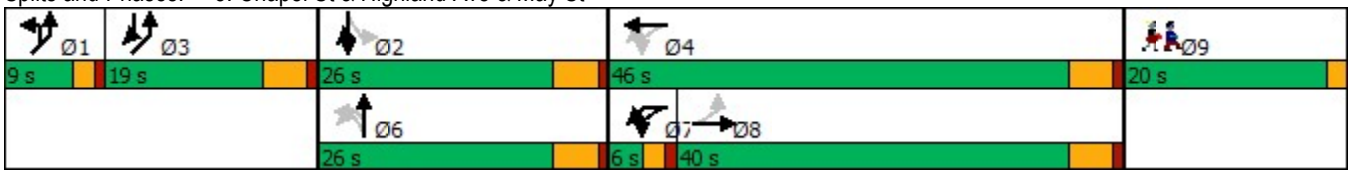
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Future Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12	10	12	12	12	16	12
Storage Length (ft)	0		0			0		0		0		0
Storage Lanes	0		0			0		0		0		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					0.99				1.00	
Frt		0.978					0.974				0.984	
Flt Protected		0.985					0.987				0.997	
Satd. Flow (prot)	0	1666	0	0	0	0	1493	0	0	0	1823	0
Flt Permitted		0.687					0.749				0.969	
Satd. Flow (perm)	0	1161	0	0	0	0	1133	0	0	0	1771	0
Right Turn on Red				No				Yes				No
Satd. Flow (RTOR)							11					
Link Speed (mph)		30					30				30	
Link Distance (ft)		453					923				945	
Travel Time (s)		10.3					21.0				21.5	
Confl. Peds. (#/hr)	7							7		3		2
Peak Hour Factor	0.72	0.62	0.92	0.50	0.64	0.55	0.65	0.60	0.50	0.56	0.64	0.50
Heavy Vehicles (%)	0%	3%	0%	8%	0%	0%	4%	0%	0%	0%	4%	6%
Adj. Flow (vph)	119	218	39	26	48	71	254	88	4	18	269	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	402	0	0	0	0	461	0	0	0	331	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Left	Left	Right
Median Width(ft)		0					0				0	
Link Offset(ft)		0					0				0	
Crosswalk Width(ft)		16					16				16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2		1	1	2	
Detector Template	Left	Thru			Left	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100		20	20	100	
Trailing Detector (ft)	0	0			0	0	0		0	0	0	
Detector 1 Position(ft)	0	0			0	0	0		0	0	0	
Detector 1 Size(ft)	20	6			20	20	6		20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	
Detector 2 Channel												

Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Lane Configurations										
Traffic Volume (vph)	15	129	189	89	11	268	39	9		
Future Volume (vph)	15	129	189	89	11	268	39	9		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	10	11	12	10	11	11	11		
Storage Length (ft)	0		120			0	60			
Storage Lanes	0		1			2	0			
Taper Length (ft)	25					25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00				0.99				
Frt			0.850			0.970				
Flt Protected		0.994			0.950	0.962				
Satd. Flow (prot)	0	1533	1352	0	1516	1447	0	0		
Flt Permitted		0.829			0.950	0.962				
Satd. Flow (perm)	0	1279	1352	0	1516	1433	0	0		
Right Turn on Red				No				Yes		
Satd. Flow (RTOR)						109				
Link Speed (mph)		30				30				
Link Distance (ft)		644				580				
Travel Time (s)		14.6				13.2				
Confl. Peds. (#/hr)	2			3		7	2			
Peak Hour Factor	0.70	0.79	0.91	0.81	0.63	0.91	0.63	0.67		
Heavy Vehicles (%)	7%	3%	6%	0%	0%	7%	3%	0%		
Adj. Flow (vph)	21	163	208	110	17	295	62	13		
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	184	318	0	17	370	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Right	Left	Left	Right	Right		
Median Width(ft)		0				21				
Link Offset(ft)		0				0				
Crosswalk Width(ft)		16				16				
Two way Left Turn Lane										
Headway Factor	1.14	1.25	1.19	1.14	1.25	1.19	1.19	1.19		
Turning Speed (mph)	15		9	9	15	15	9	9		
Number of Detectors	1	2	1		1	1				
Detector Template	Left	Thru	Right		Left	Left				
Leading Detector (ft)	20	100	20		20	20				
Trailing Detector (ft)	0	0	0		0	0				
Detector 1 Position(ft)	0	0	0		0	0				
Detector 1 Size(ft)	20	6	20		20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)		94								
Detector 2 Size(ft)		6								
Detector 2 Type		Cl+Ex								
Detector 2 Channel										

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Detector Phase	8	8			7	7	4		6	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0			2.0	2.0	6.0		6.0	6.0	6.0	
Minimum Split (s)	11.0	11.0			6.0	6.0	11.0		11.0	11.0	11.0	
Total Split (s)	40.0	40.0			6.0	6.0	46.0		26.0	26.0	26.0	
Total Split (%)	33.3%	33.3%			5.0%	5.0%	38.3%		21.7%	21.7%	21.7%	
Maximum Green (s)	35.0	35.0			3.0	3.0	41.0		21.0	21.0	21.0	
Yellow Time (s)	4.0	4.0			2.0	2.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0				0.0	
Total Lost Time (s)		5.0					5.0				5.0	
Lead/Lag	Lag	Lag			Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None			None	None	None		Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		41.2					41.2				21.1	
Actuated g/C Ratio		0.40					0.40				0.20	
v/c Ratio		0.87					1.01				0.92	
Control Delay		51.3					77.5				73.8	
Queue Delay		0.0					0.0				0.0	
Total Delay		51.3					77.5				73.8	
LOS		D					E				E	
Approach Delay		51.3					77.5				73.8	
Approach LOS		D					E				E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 104			
Natural Cycle: 130			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 57.6		Intersection LOS: E	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Chapel St & Highland Ave & May St



Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Detector 2 Extend (s)		0.0								
Turn Type	Perm	NA	custom		Prot	Prot				
Protected Phases		2	2 3		1	1 3			3	9
Permitted Phases	2									
Detector Phase	2	2	2 3		1	1 3				
Switch Phase										
Minimum Initial (s)	6.0	6.0			1.0				4.0	5.0
Minimum Split (s)	11.0	11.0			6.0				9.0	20.0
Total Split (s)	26.0	26.0			9.0				19.0	20.0
Total Split (%)	21.7%	21.7%			7.5%				16%	17%
Maximum Green (s)	21.0	21.0			6.0				14.0	18.0
Yellow Time (s)	4.0	4.0			2.0				4.0	2.0
All-Red Time (s)	1.0	1.0			1.0				1.0	0.0
Lost Time Adjust (s)		0.0			0.0					
Total Lost Time (s)		5.0			3.0					
Lead/Lag					Lead				Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0
Recall Mode	Min	Min			None				None	None
Walk Time (s)										7.0
Flash Dont Walk (s)										11.0
Pedestrian Calls (#/hr)										12
Act Effct Green (s)		21.1	40.2		6.0	25.1				
Actuated g/C Ratio		0.20	0.39		0.06	0.24				
v/c Ratio		0.71	0.61		0.20	0.86				
Control Delay		56.2	33.1		55.0	47.2				
Queue Delay		0.0	0.0		0.0	0.0				
Total Delay		56.2	33.1		55.0	47.2				
LOS		E	C		D	D				
Approach Delay		41.5				47.5				
Approach LOS		D				D				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR	NEL2	NEL
Lane Group Flow (vph)	402	461	331	184	318	17	370
v/c Ratio	0.87	1.01	0.92	0.71	0.61	0.20	0.86
Control Delay	51.3	77.5	73.8	56.2	33.1	55.0	47.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	77.5	73.8	56.2	33.1	55.0	47.2
Queue Length 50th (ft)	227	279	206	109	156	11	162
Queue Length 95th (ft)	266	#362	#261	#210	325	26	#407
Internal Link Dist (ft)	373	843	865	564			500
Turn Bay Length (ft)					120		
Base Capacity (vph)	460	456	359	259	522	87	432
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	1.01	0.92	0.71	0.61	0.20	0.86

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Future Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12	10	12	12	12	16	12
Total Lost time (s)		5.0					5.0				5.0	
Lane Util. Factor		1.00					1.00				1.00	
Frpb, ped/bikes		1.00					0.99				1.00	
Flpb, ped/bikes		1.00					1.00				1.00	
Frt		0.98					0.97				0.98	
Flt Protected		0.99					0.99				1.00	
Satd. Flow (prot)		1666					1494				1821	
Flt Permitted		0.69					0.75				0.97	
Satd. Flow (perm)		1160					1133				1772	
Peak-hour factor, PHF	0.72	0.62	0.92	0.50	0.64	0.55	0.65	0.60	0.50	0.56	0.64	0.50
Adj. Flow (vph)	119	218	39	26	48	71	254	88	4	18	269	40
RTOR Reduction (vph)	0	0	0	0	0	0	7	0	0	0	0	0
Lane Group Flow (vph)	0	402	0	0	0	0	454	0	0	0	331	0
Confl. Peds. (#/hr)	7							7		3		2
Heavy Vehicles (%)	0%	3%	0%	8%	0%	0%	4%	0%	0%	0%	4%	6%
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Actuated Green, G (s)		41.2					41.2				21.1	
Effective Green, g (s)		41.2					41.2				21.1	
Actuated g/C Ratio		0.39					0.39				0.20	
Clearance Time (s)		5.0					5.0				5.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		453					442				354	
v/s Ratio Prot												
v/s Ratio Perm		0.35					c0.40				c0.19	
v/c Ratio		0.89					1.03				0.94	
Uniform Delay, d1		30.0					32.1				41.5	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		18.5					50.1				31.4	
Delay (s)		48.5					82.3				72.9	
Level of Service		D					F				E	
Approach Delay (s)		48.5					82.3				72.9	
Approach LOS		D					F				E	

Intersection Summary			
HCM 2000 Control Delay	60.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	105.5	Sum of lost time (s)	23.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	15	129	189	89	11	268	39	9
Future Volume (vph)	15	129	189	89	11	268	39	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	10	11	11	11
Total Lost time (s)		5.0	5.0		3.0	3.0		
Lane Util. Factor		1.00	1.00		1.00	1.00		
Frpb, ped/bikes		1.00	1.00		1.00	1.00		
Flpb, ped/bikes		1.00	1.00		1.00	1.00		
Frt		1.00	0.85		1.00	0.97		
Flt Protected		0.99	1.00		0.95	0.96		
Satd. Flow (prot)		1534	1352		1516	1446		
Flt Permitted		0.83	1.00		0.95	0.96		
Satd. Flow (perm)		1279	1352		1516	1446		
Peak-hour factor, PHF	0.70	0.79	0.91	0.81	0.63	0.91	0.63	0.67
Adj. Flow (vph)	21	163	208	110	17	295	62	13
RTOR Reduction (vph)	0	0	0	0	0	85	0	0
Lane Group Flow (vph)	0	184	318	0	17	285	0	0
Confl. Peds. (#/hr)	2			3		7	2	
Heavy Vehicles (%)	7%	3%	6%	0%	0%	7%	3%	0%
Turn Type	Perm	NA	custom		Prot	Prot		
Protected Phases		2	2 3		1	1 3		
Permitted Phases	2							
Actuated Green, G (s)		21.1	40.2		6.0	23.1		
Effective Green, g (s)		21.1	40.2		6.0	23.1		
Actuated g/C Ratio		0.20	0.38		0.06	0.22		
Clearance Time (s)		5.0			3.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		255	515		86	316		
v/s Ratio Prot			0.24		0.01	c0.20		
v/s Ratio Perm		0.14						
v/c Ratio		0.72	0.62		0.20	0.90		
Uniform Delay, d1		39.5	26.4		47.5	40.1		
Progression Factor		1.00	1.00		1.00	1.00		
Incremental Delay, d2		9.6	2.2		1.1	27.2		
Delay (s)		49.1	28.6		48.6	67.2		
Level of Service		D	C		D	E		
Approach Delay (s)		36.1				66.4		
Approach LOS		D				E		

Intersection Summary

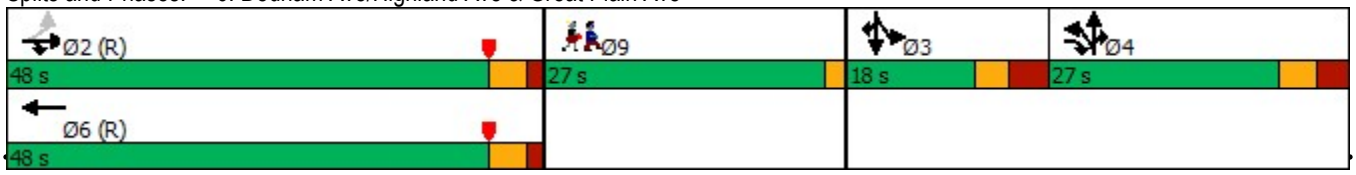
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Future Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	10	10	10	10	10	10	10	10	12
Storage Length (ft)	0		0	0		0	0		35	0		90
Storage Lanes	0		1	0		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt			0.850		0.966				0.850			0.850
Flt Protected		0.992					0.950				0.986	
Satd. Flow (prot)	0	1557	1338	0	2783	0	1458	1565	1292	0	1498	1358
Flt Permitted		0.772					0.950				0.986	
Satd. Flow (perm)	0	1210	1338	0	2783	0	1456	1565	1292	0	1495	1358
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									95			95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		238			434			312			945	
Travel Time (s)		5.4			9.9			7.1			21.5	
Confl. Peds. (#/hr)	11		4	4		11	1		2	2		1
Peak Hour Factor	0.68	0.62	0.77	0.92	0.92	0.71	0.87	0.81	0.69	0.65	0.73	0.52
Heavy Vehicles (%)	0%	2%	5%	0%	4%	6%	4%	2%	5%	0%	7%	7%
Adj. Flow (vph)	81	437	351	0	358	103	302	199	35	46	118	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	518	351	0	461	0	302	199	35	0	164	60
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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1		2		1	2	1	1	2	1
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20		100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20		6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Detector Phase	2	2	2 4		6		4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0			10.0		11.5	11.5	11.5	11.5	11.5	11.5
Total Split (s)	48.0	48.0			48.0		27.0	27.0	27.0	18.0	18.0	18.0
Total Split (%)	40.0%	40.0%			40.0%		22.5%	22.5%	22.5%	15.0%	15.0%	15.0%
Maximum Green (s)	43.0	43.0			43.0		20.5	20.5	20.5	11.5	11.5	11.5
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5			1.5		3.0	3.0	3.0	3.5	3.5	3.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Lead/Lag							Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Min	C-Min			C-Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		43.0	79.5		43.0		30.0	30.0	30.0		18.2	18.2
Actuated g/C Ratio		0.36	0.66		0.36		0.25	0.25	0.25		0.15	0.15
v/c Ratio		1.20	0.40		0.46		0.83	0.51	0.09		0.73	0.21
Control Delay		133.8	7.6		31.5		63.7	46.5	0.5		68.9	4.8
Queue Delay		0.7	1.9		0.1		45.0	0.0	0.0		0.0	0.0
Total Delay		134.4	9.6		31.6		108.7	46.5	0.5		68.9	4.8
LOS		F	A		C		F	D	A		E	A
Approach Delay		84.0			31.6			78.5			51.8	
Approach LOS		F			C			E			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 67.6		Intersection LOS: E	
Intersection Capacity Utilization 74.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Dedham Ave/Highland Ave & Great Plain Ave



Lane Group	Ø9
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

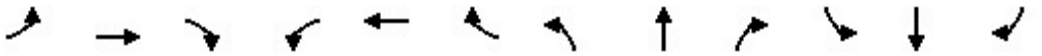
Intersection Summary

Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	518	351	461	302	199	35	164	60
v/c Ratio	1.20	0.40	0.46	0.83	0.51	0.09	0.73	0.21
Control Delay	133.8	7.6	31.5	63.7	46.5	0.5	68.9	4.8
Queue Delay	0.7	1.9	0.1	45.0	0.0	0.0	0.0	0.0
Total Delay	134.4	9.6	31.6	108.7	46.5	0.5	68.9	4.8
Queue Length 50th (ft)	~490	34	143	203	121	0	118	0
Queue Length 95th (ft)	#365	103	193	#442	206	0	#213	0
Internal Link Dist (ft)	158		354		232		865	
Turn Bay Length (ft)						35		90
Base Capacity (vph)	433	886	997	364	391	394	226	286
Starvation Cap Reductn	29	378	0	0	0	0	0	0
Spillback Cap Reductn	0	0	64	83	0	0	0	10
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.28	0.69	0.49	1.07	0.51	0.09	0.73	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Future Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	11	10	10	10	10	10	10	10	10	12
Total Lost time (s)		5.0	5.0		5.0		6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00		1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)		1555	1338		2784		1458	1565	1292		1498	1358
Flt Permitted		0.77	1.00		1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)		1211	1338		2784		1458	1565	1292		1498	1358
Peak-hour factor, PHF	0.68	0.62	0.77	0.92	0.92	0.71	0.87	0.81	0.69	0.65	0.73	0.52
Adj. Flow (vph)	81	437	351	0	358	103	302	199	35	46	118	60
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	26	0	0	51
Lane Group Flow (vph)	0	518	351	0	461	0	302	199	9	0	164	9
Confl. Peds. (#/hr)	11		4	4		11	1		2	2		1
Heavy Vehicles (%)	0%	2%	5%	0%	4%	6%	4%	2%	5%	0%	7%	7%
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Actuated Green, G (s)		41.8	78.3		41.8		30.0	30.0	30.0		18.2	18.2
Effective Green, g (s)		41.8	71.8		41.8		30.0	30.0	30.0		18.2	18.2
Actuated g/C Ratio		0.35	0.60		0.35		0.25	0.25	0.25		0.15	0.15
Clearance Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		2.0			2.0		2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		421	800		969		364	391	323		227	205
v/s Ratio Prot			0.26		0.17		c0.21	0.13	0.01		c0.11	0.01
v/s Ratio Perm		c0.43										
v/c Ratio		1.23	0.44		0.48		0.83	0.51	0.03		0.72	0.04
Uniform Delay, d1		39.1	13.1		30.5		42.6	38.7	34.0		48.5	43.5
Progression Factor		0.75	0.60		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		119.2	0.1		1.7		13.8	0.4	0.0		9.2	0.0
Delay (s)		148.4	8.0		32.2		56.4	39.1	34.0		57.7	43.5
Level of Service		F	A		C		E	D	C		E	D
Approach Delay (s)		91.7			32.2			48.5			53.9	
Approach LOS		F			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	63.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

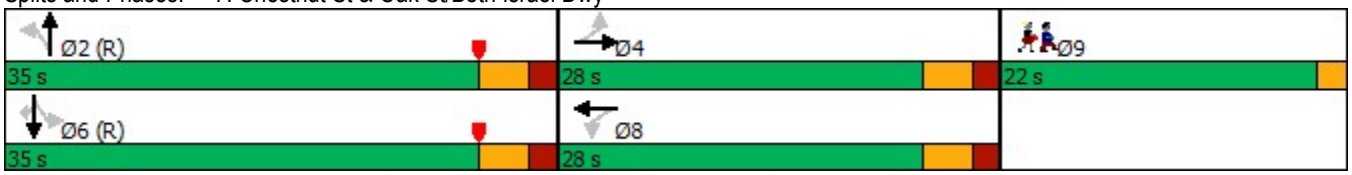
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Future Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	8	8	11	11	11	9	9	12	12	9	9
Storage Length (ft)	0		0	0		0	80		0	0		150
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.939			0.935			0.997				0.850
Flt Protected		0.976			0.986		0.950				0.996	
Satd. Flow (prot)	0	1332	0	0	1494	0	1433	1504	0	0	1503	1283
Flt Permitted		0.834			0.920		0.509				0.938	
Satd. Flow (perm)	0	1138	0	0	1394	0	768	1504	0	0	1415	1283
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								1				78
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			314			227			439	
Travel Time (s)		13.8			7.1			5.2			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	10	80	9	7	15	126	588	11	25	295	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	178	0	0	31	0	126	599	0	0	320	78
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			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.19	1.19	1.19	1.30	1.30	1.14	1.14	1.30	1.30
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	28.0	28.0		28.0	28.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	32.9%	32.9%		32.9%	32.9%		41.2%	41.2%		41.2%	41.2%	41.2%
Maximum Green (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	30.0
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		23.0			23.0		43.2	43.2			43.2	43.2
Actuated g/C Ratio		0.27			0.27		0.51	0.51			0.51	0.51
v/c Ratio		0.58			0.08		0.32	0.78			0.45	0.11
Control Delay		35.6			24.0		19.7	31.0			19.3	5.3
Queue Delay		0.0			0.0		0.0	0.0			0.0	0.0
Total Delay		35.6			24.0		19.7	31.0			19.3	5.3
LOS		D			C		B	C			B	A
Approach Delay		35.6			24.0			29.1			16.5	
Approach LOS		D			C			C			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 26.1		Intersection LOS: C	
Intersection Capacity Utilization 79.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Chestnut St & Oak St/Beth Israel Dwy



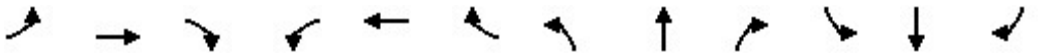
Lane Group	Ø9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	22.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	178	31	126	599	320	78
v/c Ratio	0.58	0.08	0.32	0.78	0.45	0.11
Control Delay	35.6	24.0	19.7	31.0	19.3	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	24.0	19.7	31.0	19.3	5.3
Queue Length 50th (ft)	82	12	28	186	78	0
Queue Length 95th (ft)	151	34	106	#580	233	28
Internal Link Dist (ft)	526	234		147	359	
Turn Bay Length (ft)			80			150
Base Capacity (vph)	307	377	390	764	719	690
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.08	0.32	0.78	0.45	0.11

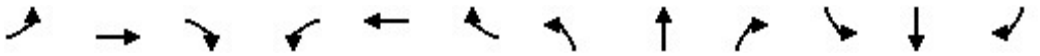
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Future Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	11	11	11	9	9	12	12	9	9
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	1.00
Frt		0.94			0.93		1.00	1.00			1.00	0.85
Flt Protected		0.98			0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1332			1493		1433	1505			1503	1282
Flt Permitted		0.83			0.92		0.51	1.00			0.94	1.00
Satd. Flow (perm)		1138			1394		767	1505			1415	1282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	10	80	9	7	15	126	588	11	25	295	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	39
Lane Group Flow (vph)	0	178	0	0	31	0	126	598	0	0	320	39
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		23.0			23.0		42.0	42.0			42.0	42.0
Effective Green, g (s)		23.0			23.0		42.0	42.0			42.0	42.0
Actuated g/C Ratio		0.27			0.27		0.49	0.49			0.49	0.49
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		307			377		378	743			699	633
v/s Ratio Prot								c0.40				
v/s Ratio Perm		c0.16			0.02		0.16				0.23	0.03
v/c Ratio		0.58			0.08		0.33	0.81			0.46	0.06
Uniform Delay, d1		26.8			23.1		13.0	18.1			14.1	11.2
Progression Factor		1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		7.8			0.4		2.4	9.1			2.2	0.2
Delay (s)		34.6			23.6		15.4	27.2			16.2	11.4
Level of Service		C			C		B	C			B	B
Approach Delay (s)		34.6			23.6			25.1			15.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



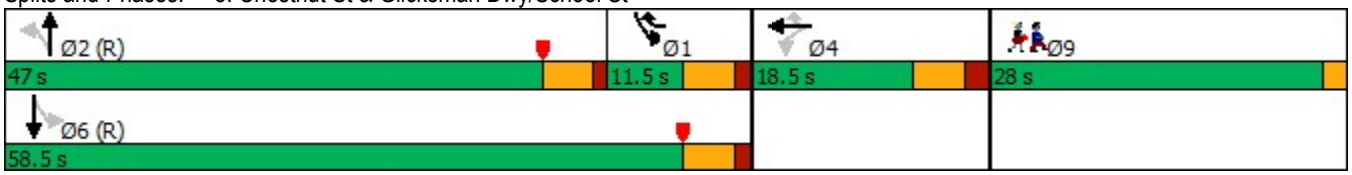
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Future Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	9	13	9	12	12	9	12	12
Storage Length (ft)	0		0	0		150	40		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			70			70			100		
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						0.850		0.950			0.997	
Flt Protected					0.953		0.950			0.950		
Satd. Flow (prot)	0	0	0	0	1438	1473	1433	1593	0	1433	1671	0
Flt Permitted					0.953		0.618			0.210		
Satd. Flow (perm)	0	0	0	0	1438	1473	932	1593	0	317	1671	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						58		29			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		162			420			439			782	
Travel Time (s)		3.7			9.5			10.0			17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	180	4	58	7	501	254	55	221	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	184	58	7	755	0	55	225	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.30	1.30	1.10	1.30	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2		1	2	
Detector Template				Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)				20	100	20	20	100		20	100	
Trailing Detector (ft)				0	0	0	0	0		0	0	
Detector 1 Position(ft)				0	0	0	0	0		0	0	
Detector 1 Size(ft)				20	6	20	20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				4		4	2			6		
Detector Phase				4	4	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)				6.0	6.0	6.0	2.0	2.0		6.0	10.0	
Minimum Split (s)				12.0	12.0	11.5	7.0	7.0		11.5	15.5	
Total Split (s)				18.5	18.5	11.5	47.0	47.0		11.5	58.5	
Total Split (%)				17.6%	17.6%	11.0%	44.8%	44.8%		11.0%	55.7%	
Maximum Green (s)				12.5	12.5	6.0	42.0	42.0		6.0	53.0	
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)				2.0	2.0	1.5	1.0	1.0		1.5	1.5	
Lost Time Adjust (s)					0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lead/Lag						Lag	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode				None	None	None	C-Min	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					12.5	22.2	61.1	61.1		71.0	69.8	
Actuated g/C Ratio					0.12	0.21	0.58	0.58		0.68	0.66	
v/c Ratio					1.08	0.16	0.01	0.80		0.20	0.20	
Control Delay					135.6	9.8	17.5	29.8		15.4	10.3	
Queue Delay					0.0	0.0	0.0	34.1		0.0	0.0	
Total Delay					135.6	9.8	17.5	64.0		15.4	10.3	
LOS					F	A	B	E		B	B	
Approach Delay					105.5			63.5			11.3	
Approach LOS					F			E			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 9 (9%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 60.0		Intersection LOS: E	
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Chestnut St & Glicksman Dwy/School St



Lane Group	Ø9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	27%
Maximum Green (s)	26.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

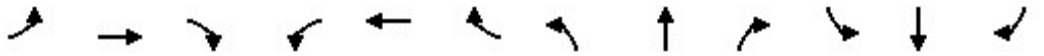
Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	184	58	7	755	55	225
v/c Ratio	1.08	0.16	0.01	0.80	0.20	0.20
Control Delay	135.6	9.8	17.5	29.8	15.4	10.3
Queue Delay	0.0	0.0	0.0	34.1	0.0	0.0
Total Delay	135.6	9.8	17.5	64.0	15.4	10.3
Queue Length 50th (ft)	~138	0	1	276	7	32
Queue Length 95th (ft)	#279	32	12	#824	39	132
Internal Link Dist (ft)	340			359		702
Turn Bay Length (ft)		150	40		115	
Base Capacity (vph)	171	357	542	938	278	1111
Starvation Cap Reductn	0	0	0	225	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.16	0.01	1.06	0.20	0.20

Intersection Summary

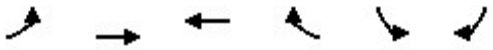
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Future Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	9	9	13	9	12	12	9	12	12
Total Lost time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frt					1.00	0.85	1.00	0.95		1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1438	1472	1433	1592		1433	1672	
Flt Permitted					0.95	1.00	0.62	1.00		0.21	1.00	
Satd. Flow (perm)					1438	1472	932	1592		317	1672	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	180	4	58	7	501	254	55	221	4
RTOR Reduction (vph)	0	0	0	0	0	48	0	13	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	184	10	7	742	0	55	225	0
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Actuated Green, G (s)					12.5	17.3	58.8	58.8		68.6	68.6	
Effective Green, g (s)					12.5	17.3	58.8	58.8		68.6	68.6	
Actuated g/C Ratio					0.12	0.16	0.56	0.56		0.65	0.65	
Clearance Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Vehicle Extension (s)					3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)					171	319	521	891		258	1092	
v/s Ratio Prot						0.00		c0.47		0.01	c0.13	
v/s Ratio Perm					0.13	0.01	0.01			0.13		
v/c Ratio					1.08	0.03	0.01	0.83		0.21	0.21	
Uniform Delay, d1					46.2	36.8	10.2	19.1		22.1	7.3	
Progression Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2					90.5	0.0	0.0	9.0		0.4	0.4	
Delay (s)					136.8	36.8	10.3	28.1		22.5	7.7	
Level of Service					F	D	B	C		C	A	
Approach Delay (s)		0.0			112.8			27.9			10.6	
Approach LOS		A			F			C			B	

Intersection Summary			
HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	154	651	599	30	4	142
Future Volume (vph)	154	651	599	30	4	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.993		0.871	
Flt Protected		0.990			0.998	
Satd. Flow (prot)	0	2932	2944	0	1371	0
Flt Permitted		0.990			0.998	
Satd. Flow (perm)	0	2932	2944	0	1371	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		180	394		416	
Travel Time (s)		4.1	9.0		9.5	
Confl. Peds. (#/hr)	23			23		
Peak Hour Factor	0.75	0.77	0.84	0.81	0.50	0.78
Heavy Vehicles (%)	4%	2%	2%	8%	0%	5%
Adj. Flow (vph)	205	845	713	37	8	182
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1050	750	0	190	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.25	1.25	1.25	1.19	1.19
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	154	651	599	30	4	142
Future Vol, veh/h	154	651	599	30	4	142
Conflicting Peds, #/hr	23	0	0	23	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	77	84	81	50	78
Heavy Vehicles, %	4	2	2	8	0	5
Mvmt Flow	205	845	713	37	8	182

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	773	0	-	0	1588	398
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	833	-
Critical Hdwy	4.18	-	-	-	6.8	7
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.24	-	-	-	3.5	3.35
Pot Cap-1 Maneuver	825	-	-	-	101	593
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	392	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	808	-	-	-	51	581
Mov Cap-2 Maneuver	-	-	-	-	51	-
Stage 1	-	-	-	-	220	-
Stage 2	-	-	-	-	384	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	21.6
HCM LOS			C

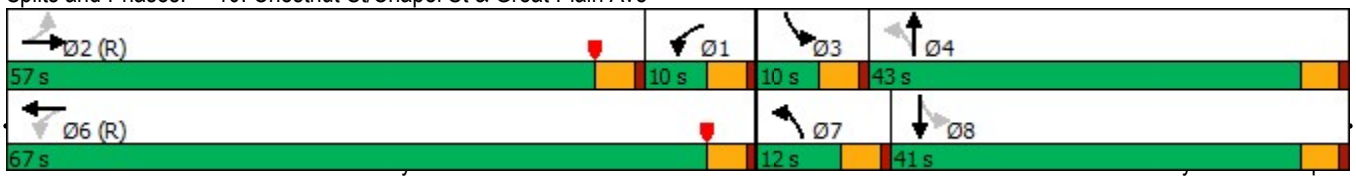
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	808	-	-	-	404
HCM Lane V/C Ratio	0.254	-	-	-	0.47
HCM Control Delay (s)	11	1.8	-	-	21.6
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	1	-	-	-	2.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Future Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	175		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.983			0.989			0.975			0.959	
Flt Protected		0.995			0.993		0.950			0.950		
Satd. Flow (prot)	0	2861	0	0	2876	0	1444	1527	0	1430	1484	0
Flt Permitted		0.738			0.640		0.383			0.323		
Satd. Flow (perm)	0	2122	0	0	1853	0	582	1527	0	486	1484	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			238			782			424	
Travel Time (s)		9.0			5.4			17.8			9.6	
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.66	0.76	0.76	0.75	0.83	0.75	0.81	0.88	0.89	0.50	0.91	0.57
Heavy Vehicles (%)	8%	2%	9%	3%	4%	0%	5%	6%	2%	6%	4%	13%
Adj. Flow (vph)	89	687	97	111	599	57	119	308	62	36	164	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	873	0	0	767	0	119	370	0	36	225	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.19	1.19	1.25	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	34.5	34.5		9.5	34.5		9.5	22.5		9.5	22.5	
Total Split (s)	57.0	57.0		10.0	67.0		12.0	43.0		10.0	41.0	
Total Split (%)	47.5%	47.5%		8.3%	55.8%		10.0%	35.8%		8.3%	34.2%	
Maximum Green (s)	52.5	52.5		5.5	62.5		7.5	38.5		5.5	36.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lead		Lag			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)	8.0	8.0			8.0							
Flash Dont Walk (s)	22.0	22.0			22.0							
Pedestrian Calls (#/hr)	5	5			5							
Act Effct Green (s)		69.6			69.6		40.4	35.1		33.7	27.6	
Actuated g/C Ratio		0.58			0.58		0.34	0.29		0.28	0.23	
v/c Ratio		0.71			0.71		0.45	0.83		0.20	0.66	
Control Delay		23.9			14.9		32.4	56.0		25.9	50.0	
Queue Delay		2.0			0.4		0.0	3.5		0.2	0.0	
Total Delay		25.9			15.3		32.4	59.6		26.1	50.0	
LOS		C			B		C	E		C	D	
Approach Delay		25.9			15.3			53.0			46.7	
Approach LOS		C			B			D			D	

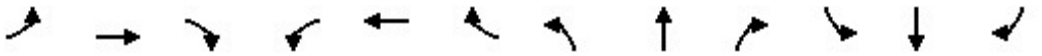
Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 30.3		Intersection LOS: C	
Intersection Capacity Utilization 83.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 10: Chestnut St/Chapel St & Great Plain Ave



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	873	767	119	370	36	225
v/c Ratio	0.71	0.71	0.45	0.83	0.20	0.66
Control Delay	23.9	14.9	32.4	56.0	25.9	50.0
Queue Delay	2.0	0.4	0.0	3.5	0.2	0.0
Total Delay	25.9	15.3	32.4	59.6	26.1	50.0
Queue Length 50th (ft)	268	166	61	269	17	155
Queue Length 95th (ft)	275	344	91	365	21	223
Internal Link Dist (ft)	314	158		702		344
Turn Bay Length (ft)			175		100	
Base Capacity (vph)	1230	1074	263	489	184	451
Starvation Cap Reductn	0	58	0	0	0	0
Spillback Cap Reductn	212	0	0	58	18	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.75	0.45	0.86	0.22	0.50

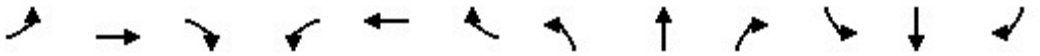
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Future Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	11	11	10	11	11
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.97		1.00	0.96	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2862			2875		1444	1527		1430	1485	
Flt Permitted		0.74			0.64		0.38	1.00		0.32	1.00	
Satd. Flow (perm)		2124			1853		582	1527		487	1485	
Peak-hour factor, PHF	0.66	0.76	0.76	0.75	0.83	0.75	0.81	0.88	0.89	0.50	0.91	0.57
Adj. Flow (vph)	89	687	97	111	599	57	119	308	62	36	164	61
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	873	0	0	767	0	119	370	0	36	225	0
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	8%	2%	9%	3%	4%	0%	5%	6%	2%	6%	4%	13%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		67.7			67.7		43.3	35.1		33.2	29.5	
Effective Green, g (s)		67.7			67.7		43.3	35.1		33.2	29.5	
Actuated g/C Ratio		0.56			0.56		0.36	0.29		0.28	0.25	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1198			1045		276	446		163	365	
v/s Ratio Prot							c0.03	c0.24		0.01	0.15	
v/s Ratio Perm		0.41			c0.41		0.12			0.05		
v/c Ratio		0.73			0.73		0.43	0.83		0.22	0.62	
Uniform Delay, d1		19.4			19.5		27.5	39.7		32.8	40.2	
Progression Factor		1.00			0.55		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.9			2.3		1.1	12.1		0.7	3.1	
Delay (s)		23.3			13.0		28.6	51.7		33.5	43.3	
Level of Service		C			B		C	D		C	D	
Approach Delay (s)		23.3			13.0			46.1			42.0	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	128	8	157	105	6	8	2	135	10	1	4
Future Volume (vph)	1	128	8	157	105	6	8	2	135	10	1	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	14	12	12	13	12	12	10	12
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
Ped Bike Factor												
Frt		0.994			0.997			0.881			0.964	
Flt Protected		0.999			0.972			0.995			0.971	
Satd. Flow (prot)	0	1738	0	0	1721	0	0	1503	0	0	1494	0
Flt Permitted		0.999			0.972			0.995			0.971	
Satd. Flow (perm)	0	1738	0	0	1721	0	0	1503	0	0	1494	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		521			453			566			491	
Travel Time (s)		11.8			10.3			12.9			11.2	
Confl. Peds. (#/hr)	1		3	3		1						
Peak Hour Factor	0.25	0.71	0.88	0.70	0.66	0.63	0.44	0.50	0.80	0.56	0.25	0.50
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	14%	0%	2%	0%	0%	0%
Adj. Flow (vph)	4	180	9	224	159	10	18	4	169	18	4	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	393	0	0	191	0	0	30	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	1.14	1.10	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

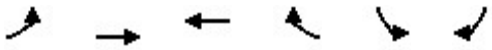
Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	128	8	157	105	6	8	2	135	10	1	4
Future Vol, veh/h	1	128	8	157	105	6	8	2	135	10	1	4
Conflicting Peds, #/hr	1	0	3	3	0	1	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	25	71	88	70	66	63	44	50	80	56	25	50
Heavy Vehicles, %	0	1	0	4	1	0	14	0	2	0	0	0
Mvmt Flow	4	180	9	224	159	10	18	4	169	18	4	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	170	0	0	192	0	0	814	814	188	892	813	165
Stage 1	-	-	-	-	-	-	196	196	-	613	613	-
Stage 2	-	-	-	-	-	-	618	618	-	279	200	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.24	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.24	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.24	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.626	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1420	-	-	1370	-	-	283	315	854	265	315	885
Stage 1	-	-	-	-	-	-	779	742	-	483	486	-
Stage 2	-	-	-	-	-	-	457	484	-	732	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1419	-	-	1366	-	-	237	256	851	180	256	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	237	256	-	180	256	-
Stage 1	-	-	-	-	-	-	774	738	-	481	398	-
Stage 2	-	-	-	-	-	-	367	396	-	582	735	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	4.7	12.7	22
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	657	1419	-	-	1366	-	-	241
HCM Lane V/C Ratio	0.291	0.003	-	-	0.164	-	-	0.124
HCM Control Delay (s)	12.7	7.5	0	-	8.2	0	-	22
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.6	-	-	0.4



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	176	148	130	65	68	53
Future Volume (vph)	176	148	130	65	68	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.963		0.941	
Flt Protected		0.979			0.973	
Satd. Flow (prot)	0	1667	1518	0	1623	0
Flt Permitted		0.979			0.973	
Satd. Flow (perm)	0	1667	1518	0	1623	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		525	1036		802	
Travel Time (s)		11.9	23.5		18.2	
Confl. Peds. (#/hr)	4			4		1
Peak Hour Factor	0.90	0.56	0.59	0.78	0.74	0.75
Heavy Vehicles (%)	1%	0%	1%	2%	2%	4%
Adj. Flow (vph)	196	264	220	83	92	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	460	303	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.25	1.25	1.05	1.05
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

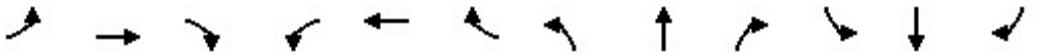
Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	176	148	130	65	68	53
Future Vol, veh/h	176	148	130	65	68	53
Conflicting Peds, #/hr	4	0	0	4	0	1
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	90	56	59	78	74	75
Heavy Vehicles, %	1	0	1	2	2	4
Mvmt Flow	196	264	220	83	92	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	307	0	-	0	922	267
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	656	-
Critical Hdwy	4.11	-	-	-	6.42	6.24
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.209	-	-	-	3.518	3.336
Pot Cap-1 Maneuver	1259	-	-	-	300	767
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	516	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1253	-	-	-	243	763
Mov Cap-2 Maneuver	-	-	-	-	243	-
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	514	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	24.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1253	-	-	-	345
HCM Lane V/C Ratio	0.156	-	-	-	0.471
HCM Control Delay (s)	8.4	0	-	-	24.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.6	-	-	-	2.4

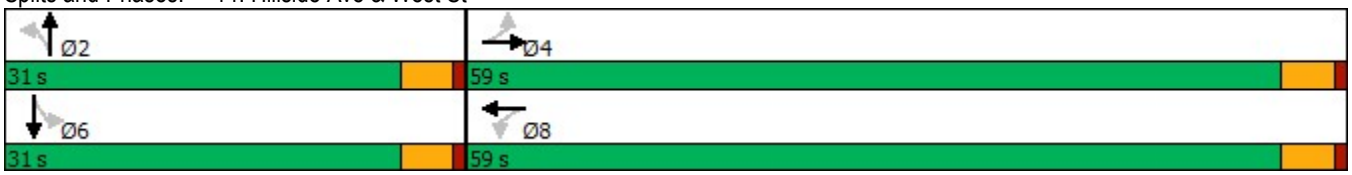


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	350	24	99	228	32	9	67	86	9	72	18
Future Volume (vph)	28	350	24	99	228	32	9	67	86	9	72	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	12	12	14	12	12	13	12	12	13	12
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
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.990			0.985			0.928			0.973	
Flt Protected		0.995			0.985			0.997			0.996	
Satd. Flow (prot)	0	1482	0	0	1718	0	0	1582	0	0	1606	0
Flt Permitted		0.933			0.784			0.980			0.963	
Satd. Flow (perm)	0	1387	0	0	1365	0	0	1555	0	0	1552	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			13			65			14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		459			455			883			496	
Travel Time (s)		10.4			10.3			20.1			11.3	
Confl. Peds. (#/hr)	14		7	7		14	2		3	3		2
Peak Hour Factor	0.63	0.90	0.69	0.70	0.81	0.60	0.67	0.66	0.65	0.67	0.63	0.57
Heavy Vehicles (%)	0%	2%	5%	2%	3%	0%	0%	2%	3%	25%	2%	13%
Adj. Flow (vph)	44	389	35	141	281	53	13	102	132	13	114	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	468	0	0	475	0	0	247	0	0	159	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	1.14	1.30	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	59.0	59.0		59.0	59.0		31.0	31.0		31.0	31.0	
Total Split (%)	65.6%	65.6%		65.6%	65.6%		34.4%	34.4%		34.4%	34.4%	
Maximum Green (s)	54.5	54.5		54.5	54.5		26.5	26.5		26.5	26.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	20	20		20	20		20	20		20	20	
Act Effct Green (s)		22.0			22.0			11.7			11.7	
Actuated g/C Ratio		0.50			0.50			0.27			0.27	
v/c Ratio		0.67			0.69			0.53			0.37	
Control Delay		13.4			13.9			16.6			17.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		13.4			13.9			16.6			17.2	
LOS		B			B			B			B	
Approach Delay		13.4			13.9			16.6			17.2	
Approach LOS		B			B			B			B	

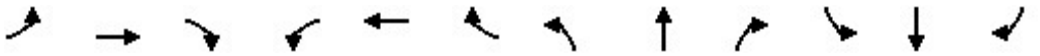
Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 43.7			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 14.6		Intersection LOS: B	
Intersection Capacity Utilization 69.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 14: Hillside Ave & West St



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	468	475	247	159
v/c Ratio	0.67	0.69	0.53	0.37
Control Delay	13.4	13.9	16.6	17.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.4	13.9	16.6	17.2
Queue Length 50th (ft)	66	67	34	27
Queue Length 95th (ft)	193	163	78	62
Internal Link Dist (ft)	379	375	803	416
Turn Bay Length (ft)				
Base Capacity (vph)	1328	1307	1070	1052
Starvation Cap Reductn	0	2	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.35	0.36	0.23	0.15

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	350	24	99	228	32	9	67	86	9	72	18
Future Volume (vph)	28	350	24	99	228	32	9	67	86	9	72	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	12	12	14	12	12	13	12	12	13	12
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.98			0.93			0.97	
Flt Protected		1.00			0.99			1.00			1.00	
Satd. Flow (prot)		1482			1720			1584			1606	
Flt Permitted		0.93			0.78			0.98			0.96	
Satd. Flow (perm)		1389			1369			1557			1553	
Peak-hour factor, PHF	0.63	0.90	0.69	0.70	0.81	0.60	0.67	0.66	0.65	0.67	0.63	0.57
Adj. Flow (vph)	44	389	35	141	281	53	13	102	132	13	114	32
RTOR Reduction (vph)	0	4	0	0	6	0	0	47	0	0	10	0
Lane Group Flow (vph)	0	464	0	0	469	0	0	200	0	0	149	0
Confl. Peds. (#/hr)	14		7	7		14	2		3	3		2
Heavy Vehicles (%)	0%	2%	5%	2%	3%	0%	0%	2%	3%	25%	2%	13%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		22.0			22.0			11.7			11.7	
Effective Green, g (s)		22.0			22.0			11.7			11.7	
Actuated g/C Ratio		0.52			0.52			0.27			0.27	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		715			705			426			425	
v/s Ratio Prot												
v/s Ratio Perm		0.33			c0.34			c0.13			0.10	
v/c Ratio		0.65			0.66			0.47			0.35	
Uniform Delay, d1		7.5			7.6			12.9			12.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.0			2.4			0.8			0.5	
Delay (s)		9.6			10.0			13.7			12.9	
Level of Service		A			B			B			B	
Approach Delay (s)		9.6			10.0			13.7			12.9	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	42.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	134	28	23	187	32	39	89	21	25	51	10
Future Volume (vph)	18	134	28	23	187	32	39	89	21	25	51	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	15	12	12	13	12
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
Ped Bike Factor												
Frt		0.975			0.978			0.981			0.981	
Flt Protected		0.994			0.994			0.987			0.983	
Satd. Flow (prot)	0	1645	0	0	1514	0	0	1773	0	0	1639	0
Flt Permitted		0.994			0.994			0.987			0.983	
Satd. Flow (perm)	0	1645	0	0	1514	0	0	1773	0	0	1639	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			695			637			578	
Travel Time (s)		9.3			15.8			14.5			13.1	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.67	0.82	0.63	0.66	0.88	0.66	0.67	0.65	0.68	0.58	0.77	0.56
Heavy Vehicles (%)	0%	0%	4%	5%	1%	7%	0%	2%	11%	4%	2%	11%
Adj. Flow (vph)	27	163	44	35	213	48	58	137	31	43	66	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	234	0	0	296	0	0	226	0	0	127	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	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.01	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	9.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	18	134	28	23	187	32	39	89	21	25	51	10
Future Vol, veh/h	18	134	28	23	187	32	39	89	21	25	51	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	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	67	82	63	66	88	66	67	65	68	58	77	56
Heavy Vehicles, %	0	0	4	5	1	7	0	2	11	4	2	11
Mvmt Flow	27	163	44	35	213	48	58	137	31	43	66	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	261	0	0	207	0	0	588	570	187	632	568	237
Stage 1	-	-	-	-	-	-	239	239	-	307	307	-
Stage 2	-	-	-	-	-	-	349	331	-	325	261	-
Critical Hdwy	4.1	-	-	4.15	-	-	7.1	6.52	6.31	7.14	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.14	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.14	5.52	-
Follow-up Hdwy	2.2	-	-	2.245	-	-	3.5	4.018	3.399	3.536	4.018	3.399
Pot Cap-1 Maneuver	1315	-	-	1346	-	-	423	431	832	390	432	780
Stage 1	-	-	-	-	-	-	769	708	-	699	661	-
Stage 2	-	-	-	-	-	-	671	645	-	683	692	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1315	-	-	1346	-	-	348	408	831	267	409	780
Mov Cap-2 Maneuver	-	-	-	-	-	-	348	408	-	267	409	-
Stage 1	-	-	-	-	-	-	751	692	-	683	641	-
Stage 2	-	-	-	-	-	-	570	625	-	515	676	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.9	23.2	19.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	419	1315	-	-	1346	-	-	367
HCM Lane V/C Ratio	0.539	0.02	-	-	0.026	-	-	0.347
HCM Control Delay (s)	23.2	7.8	0	-	7.7	0	-	19.9
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	3.1	0.1	-	-	0.1	-	-	1.5

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	64	59	70	504	330	133	
Future Volume (vph)	64	59	70	504	330	133	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.99			1.00	0.99		
Frt	0.930				0.960		
Flt Protected	0.976			0.992			
Satd. Flow (prot)	1536	0	0	1642	1599	0	
Flt Permitted	0.976			0.750			
Satd. Flow (perm)	1520	0	0	1241	1599	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	52				41		
Link Speed (mph)	30			30	30		
Link Distance (ft)	756			591	599		
Travel Time (s)	17.2			13.4	13.6		
Confl. Peds. (#/hr)	3		2			2	
Confl. Bikes (#/hr)						1	
Peak Hour Factor	0.85	0.74	0.63	0.83	0.63	0.60	
Heavy Vehicles (%)	0%	2%	5%	3%	2%	2%	
Adj. Flow (vph)	75	80	111	607	524	222	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	155	0	0	718	746	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	1		1	2	2		
Detector Template	Left		Left	Thru	Thru		
Leading Detector (ft)	20		20	100	100		
Trailing Detector (ft)	0		0	0	0		
Detector 1 Position(ft)	0		0	0	0		
Detector 1 Size(ft)	20		20	6	6		
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		
Detector 2 Position(ft)				94	94		
Detector 2 Size(ft)				6	6		
Detector 2 Type				Cl+Ex	Cl+Ex		
Detector 2 Channel							
Detector 2 Extend (s)				0.0	0.0		
Turn Type	Prot		Perm	NA	NA		
Protected Phases	4			2	6		3

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Permitted Phases			2				
Detector Phase	4		2	2	6		
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0		5.0
Minimum Split (s)	9.5		9.5	9.5	9.5		22.5
Total Split (s)	10.0		47.5	47.5	47.5		22.5
Total Split (%)	12.5%		59.4%	59.4%	59.4%		28%
Maximum Green (s)	5.5		43.0	43.0	43.0		18.0
Yellow Time (s)	3.5		3.5	3.5	3.5		3.5
All-Red Time (s)	1.0		1.0	1.0	1.0		1.0
Lost Time Adjust (s)	0.0			0.0	0.0		
Total Lost Time (s)	4.5			4.5	4.5		
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0
Recall Mode	None		Min	Min	Min		None
Walk Time (s)							7.0
Flash Dont Walk (s)							11.0
Pedestrian Calls (#/hr)							10
Act Effct Green (s)	5.6			50.6	50.6		
Actuated g/C Ratio	0.08			0.73	0.73		
v/c Ratio	0.91			0.79	0.63		
Control Delay	73.5			17.9	10.4		
Queue Delay	0.0			0.0	0.0		
Total Delay	73.5			17.9	10.4		
LOS	E			B	B		
Approach Delay	73.5			17.9	10.4		
Approach LOS	E			B	B		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 80			
Actuated Cycle Length: 69.1			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 19.8		Intersection LOS: B	
Intersection Capacity Utilization 81.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 16: Webster St & May St

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	155	718	746
v/c Ratio	0.91	0.79	0.63
Control Delay	73.5	17.9	10.4
Queue Delay	0.0	0.0	0.0
Total Delay	73.5	17.9	10.4
Queue Length 50th (ft)	40	102	75
Queue Length 95th (ft)	#156	#537	224
Internal Link Dist (ft)	676	511	519
Turn Bay Length (ft)			
Base Capacity (vph)	171	908	1181
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.91	0.79	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	64	59	70	504	330	133
Future Volume (vph)	64	59	70	504	330	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.99	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	0.93			1.00	0.96	
Flt Protected	0.98			0.99	1.00	
Satd. Flow (prot)	1537			1642	1599	
Flt Permitted	0.98			0.75	1.00	
Satd. Flow (perm)	1537			1242	1599	
Peak-hour factor, PHF	0.85	0.74	0.63	0.83	0.63	0.60
Adj. Flow (vph)	75	80	111	607	524	222
RTOR Reduction (vph)	48	0	0	0	13	0
Lane Group Flow (vph)	107	0	0	718	733	0
Confl. Peds. (#/hr)	3		2			2
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	0%	2%	5%	3%	2%	2%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	5.6			50.6	50.6	
Effective Green, g (s)	5.6			50.6	50.6	
Actuated g/C Ratio	0.08			0.70	0.70	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	118			863	1111	
v/s Ratio Prot	c0.07				0.46	
v/s Ratio Perm				c0.58		
v/c Ratio	0.91			0.83	0.66	
Uniform Delay, d1	33.3			8.0	6.3	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	54.3			6.9	1.5	
Delay (s)	87.7			14.9	7.7	
Level of Service	F			B	A	
Approach Delay (s)	87.7			14.9	7.7	
Approach LOS	F			B	A	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

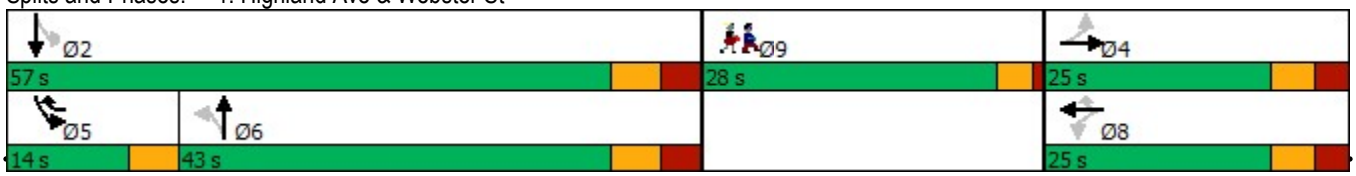
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	261	40	25	173	237	32	427	42	282	622	70
Future Volume (vph)	72	261	40	25	173	237	32	427	42	282	623	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	10	10	12	10	10	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Frt		0.983				0.850		0.987			0.984	
Flt Protected		0.990			0.994		0.950			0.950		
Satd. Flow (prot)	0	3244	0	0	1739	1507	1636	1748	0	3268	1721	0
Flt Permitted		0.708			0.823		0.192			0.150		
Satd. Flow (perm)	0	2315	0	0	1439	1460	330	1748	0	516	1721	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								5				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			193			991			1083	
Travel Time (s)		8.6			4.4			22.5			24.6	
Confl. Peds. (#/hr)	6		3	3		6	8		2	2		8
Confl. Bikes (#/hr)			3						2			1
Peak Hour Factor	0.93	0.95	0.91	0.88	0.84	0.66	0.80	0.78	0.80	0.52	0.88	0.85
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	3%	0%	0%	0%	1%	2%
Adj. Flow (vph)	77	275	44	28	206	359	40	547	53	542	708	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	396	0	0	234	359	40	600	0	542	790	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			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.09	1.09	1.09	1.09	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phase	4	4		8	8	5	6	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	10.0	10.0		6.0	10.0	
Minimum Split (s)	12.5	12.5		12.5	12.5	10.0	17.5	17.5		10.0	17.5	
Total Split (s)	25.0	25.0		25.0	25.0	14.0	43.0	43.0		14.0	57.0	
Total Split (%)	22.7%	22.7%		22.7%	22.7%	12.7%	39.1%	39.1%		12.7%	51.8%	
Maximum Green (s)	18.5	18.5		18.5	18.5	10.0	35.5	35.5		10.0	49.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	0.0	3.5	3.5		0.0	3.5	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		-2.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0	7.5	7.5		2.0	7.5	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		18.9			18.9	31.6	36.2	36.2		56.1	50.5	
Actuated g/C Ratio		0.19			0.19	0.32	0.37	0.37		0.57	0.51	
v/c Ratio		0.90			0.85	0.76	0.33	0.93		0.85	0.90	
Control Delay		65.7			69.7	42.8	37.5	56.0		31.7	40.3	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		65.7			69.7	42.8	37.5	56.0		31.7	40.3	
LOS		E			E	D	D	E		C	D	
Approach Delay		65.7			53.4			54.8			36.8	
Approach LOS		E			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 98.8			
Natural Cycle: 130			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 47.9		Intersection LOS: D	
Intersection Capacity Utilization 89.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Highland Ave & Webster St



Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	25%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	44
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	396	234	359	40	600	542	790
v/c Ratio	0.90	0.85	0.76	0.33	0.93	0.85	0.90
Control Delay	65.7	69.7	42.8	37.5	56.0	31.7	40.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.7	69.7	42.8	37.5	56.0	31.7	40.3
Queue Length 50th (ft)	~152	166	226	22	~464	118	~593
Queue Length 95th (ft)	#256	#290	222	50	#536	78	#797
Internal Link Dist (ft)	299	113			911		1003
Turn Bay Length (ft)				60			
Base Capacity (vph)	442	275	472	120	644	634	880
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.85	0.76	0.33	0.93	0.85	0.90

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	261	40	25	173	237	32	427	42	282	622	70
Future Volume (vph)	72	261	40	25	173	237	32	427	42	282	623	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	12	10	10	10	10	12	10	10	12
Total Lost time (s)		6.5			6.5	4.0	7.5	7.5		2.0	7.5	
Lane Util. Factor		0.95			1.00	1.00	1.00	1.00		0.97	1.00	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.99			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3240			1738	1478	1631	1748		3268	1722	
Flt Permitted		0.71			0.82	1.00	0.19	1.00		0.15	1.00	
Satd. Flow (perm)		2316			1440	1478	330	1748		516	1722	
Peak-hour factor, PHF	0.93	0.95	0.91	0.88	0.84	0.66	0.80	0.78	0.80	0.52	0.88	0.85
Adj. Flow (vph)	77	275	44	28	206	359	40	547	52	542	708	82
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	396	0	0	234	359	40	597	0	542	790	0
Confl. Peds. (#/hr)	6		3	3		6	8		2	2		8
Confl. Bikes (#/hr)			3						2			1
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	3%	0%	0%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		18.9			18.9	29.1	36.3	36.3		50.5	50.5	
Effective Green, g (s)		18.9			18.9	29.1	36.3	36.3		52.5	50.5	
Actuated g/C Ratio		0.19			0.19	0.29	0.36	0.36		0.52	0.50	
Clearance Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		436			271	428	119	632		604	867	
v/s Ratio Prot						0.09		0.34		0.11	c0.46	
v/s Ratio Perm		c0.17			0.16	0.16	0.12			0.36		
v/c Ratio		0.91			0.86	0.84	0.34	0.94		0.90	0.91	
Uniform Delay, d1		39.9			39.4	33.4	23.2	31.0		20.2	22.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		21.9			22.9	12.9	0.6	22.6		15.6	13.4	
Delay (s)		61.7			62.3	46.3	23.9	53.7		35.9	36.2	
Level of Service		E			E	D	C	D		D	D	
Approach Delay (s)		61.7			52.6			51.8			36.1	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.3	Sum of lost time (s)	22.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	89	83	2	24	1	128	422	12	13	611	66
Future Volume (vph)	39	89	83	2	24	1	128	422	12	13	612	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	11	12	12	13	12	12	13	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.952			0.989			0.995			0.984	
Flt Protected		0.991			0.996		0.950				0.998	
Satd. Flow (prot)	0	1635	0	0	1622	0	1608	1723	0	0	1704	0
Flt Permitted		0.930			0.974		0.306				0.974	
Satd. Flow (perm)	0	1528	0	0	1587	0	516	1723	0	0	1663	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			4			2			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		695			444			621			443	
Travel Time (s)		15.8			10.1			14.1			10.1	
Confl. Peds. (#/hr)	8					8	11		9	9		11
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.71	0.66	0.80	0.50	0.61	0.25	0.62	0.81	0.69	0.50	0.98	0.74
Heavy Vehicles (%)	3%	0%	4%	0%	0%	0%	1%	2%	0%	0%	1%	5%
Adj. Flow (vph)	55	135	104	4	39	4	206	521	17	26	624	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	294	0	0	47	0	206	538	0	0	739	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.19	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			1			1	
Permitted Phases	4			4			1			1		
Detector Phase	4	4		4	4		1	1		1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	9.5		9.5	9.5		9.5	9.5		9.5	9.5	
Total Split (s)	20.0	20.0		20.0	20.0		47.0	47.0		47.0	47.0	
Total Split (%)	22.2%	22.2%		22.2%	22.2%		52.2%	52.2%		52.2%	52.2%	
Maximum Green (s)	15.5	15.5		15.5	15.5		42.5	42.5		42.5	42.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5			4.5	
Lead/Lag							Lead	Lead		Lead	Lead	
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	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.7			15.7		41.9	41.9			41.9	
Actuated g/C Ratio		0.20			0.20		0.53	0.53			0.53	
v/c Ratio		0.92			0.15		0.76	0.59			0.84	
Control Delay		65.9			29.2		39.4	17.9			28.9	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		65.9			29.2		39.4	17.9			28.9	
LOS		E			C		D	B			C	
Approach Delay		65.9			29.2			23.9			28.9	
Approach LOS		E			C			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 79.7			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 32.8		Intersection LOS: C	
Intersection Capacity Utilization 97.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Highland Ave & Hunnewell St

Lane Group	Ø2
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	21.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	Min
Walk Time (s)	7.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	294	47	206	538	739
v/c Ratio	0.92	0.15	0.76	0.59	0.84
Control Delay	65.9	29.2	39.4	17.9	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	65.9	29.2	39.4	17.9	28.9
Queue Length 50th (ft)	121	16	62	141	237
Queue Length 95th (ft)	#190	34	111	286	#627
Internal Link Dist (ft)	615	364		541	363
Turn Bay Length (ft)			60		
Base Capacity (vph)	321	315	278	929	901
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.92	0.15	0.74	0.58	0.82

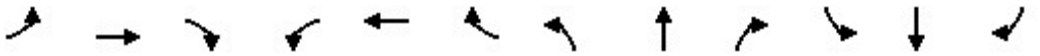
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	89	83	2	24	1	128	422	12	13	611	66
Future Volume (vph)	39	89	83	2	24	1	128	422	12	13	612	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	11	12	12	13	12	12	13	12
Total Lost time (s)		4.5			4.5		4.5	4.5			4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Frt		0.95			0.99		1.00	1.00			0.98	
Flt Protected		0.99			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1629			1622		1603	1724			1704	
Flt Permitted		0.93			0.97		0.31	1.00			0.97	
Satd. Flow (perm)		1529			1585		517	1724			1662	
Peak-hour factor, PHF	0.71	0.66	0.80	0.50	0.61	0.25	0.62	0.81	0.69	0.50	0.98	0.74
Adj. Flow (vph)	55	135	104	4	39	4	206	521	17	26	624	89
RTOR Reduction (vph)	0	21	0	0	3	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	273	0	0	44	0	206	537	0	0	734	0
Confl. Peds. (#/hr)	8					8	11		9	9		11
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	3%	0%	4%	0%	0%	0%	1%	2%	0%	0%	1%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			1			1	
Permitted Phases	4			4			1			1		
Actuated Green, G (s)		15.7			15.7		41.9	41.9			41.9	
Effective Green, g (s)		15.7			15.7		41.9	41.9			41.9	
Actuated g/C Ratio		0.20			0.20		0.53	0.53			0.53	
Clearance Time (s)		4.5			4.5		4.5	4.5			4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		301			312		271	906			873	
v/s Ratio Prot								0.31				
v/s Ratio Perm		c0.18			0.03		0.40				c0.44	
v/c Ratio		0.91			0.14		0.76	0.59			0.84	
Uniform Delay, d1		31.3			26.4		14.9	13.0			16.1	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		29.0			0.2		11.8	1.0			7.4	
Delay (s)		60.3			26.6		26.8	14.1			23.4	
Level of Service		E			C		C	B			C	
Approach Delay (s)		60.3			26.6			17.6			23.4	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	79.7	Sum of lost time (s)	11.0
Intersection Capacity Utilization	97.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



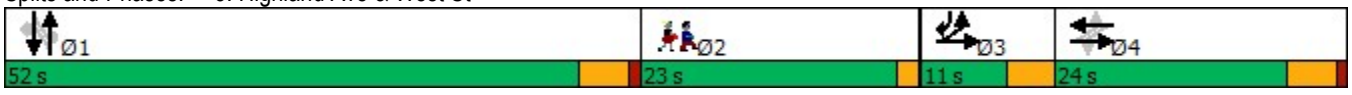
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Future Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	9	10	12	12	13	12	12	13	12
Storage Length (ft)	0		0	150		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.98	0.99			0.99			1.00	0.97
Frt		0.971			0.971			0.985				0.850
Flt Protected	0.950			0.950				0.997			0.995	
Satd. Flow (prot)	1433	1471	0	1462	1537	0	0	1712	0	0	1724	1439
Flt Permitted	0.436			0.586				0.884			0.889	
Satd. Flow (perm)	652	1471	0	882	1537	0	0	1518	0	0	1538	1389
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		455			303			836			621	
Travel Time (s)		10.3			6.9			19.0			14.1	
Confl. Peds. (#/hr)	7		11	11		7	14		21	21		14
Confl. Bikes (#/hr)						1			1			1
Peak Hour Factor	0.69	0.92	0.83	0.66	0.84	0.73	0.82	0.96	0.64	0.81	0.88	0.89
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	0%	1%	0%	2%	2%	1%
Adj. Flow (vph)	184	229	54	71	202	49	30	435	59	58	469	264
Shared Lane Traffic (%)												
Lane Group Flow (vph)	184	283	0	71	251	0	0	524	0	0	527	264
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)		9			9			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.14	1.30	1.25	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	3 4			4			1			1	3
Permitted Phases	4			4			1			1		1
Detector Phase	3	3 4		4	4		1	1		1	1	3
Switch Phase												
Minimum Initial (s)	6.0			6.0	6.0		10.0	10.0		10.0	10.0	6.0
Minimum Split (s)	10.0			11.0	11.0		15.0	15.0		15.0	15.0	10.0
Total Split (s)	11.0			24.0	24.0		52.0	52.0		52.0	52.0	11.0
Total Split (%)	10.0%			21.8%	21.8%		47.3%	47.3%		47.3%	47.3%	10.0%
Maximum Green (s)	7.0			19.0	19.0		47.0	47.0		47.0	47.0	7.0
Yellow Time (s)	4.0			4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0			1.0	1.0		1.0	1.0		1.0	1.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0			5.0	5.0			5.0			5.0	4.0
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			4.0	4.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	28.0	32.2		19.4	19.4			34.8			34.8	43.3
Actuated g/C Ratio	0.34	0.39		0.23	0.23			0.42			0.42	0.52
v/c Ratio	0.64	0.50		0.34	0.70			0.82			0.82	0.36
Control Delay	38.8	29.0		39.8	46.6			34.9			34.2	9.8
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	38.8	29.0		39.8	46.6			34.9			34.2	9.8
LOS	D	C		D	D			C			C	A
Approach Delay		32.9			45.1			34.9			26.1	
Approach LOS		C			D			C			C	

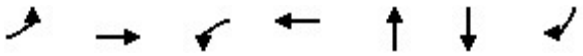
Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 83.1			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 32.7		Intersection LOS: C	
Intersection Capacity Utilization 82.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Highland Ave & West St



Lane Group	Ø2
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	23.0
Total Split (%)	21%
Maximum Green (s)	21.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	24
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

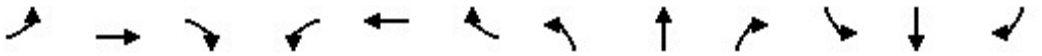
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	184	283	71	251	524	527	264
v/c Ratio	0.64	0.50	0.34	0.70	0.82	0.82	0.36
Control Delay	38.8	29.0	39.8	46.6	34.9	34.2	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	29.0	39.8	46.6	34.9	34.2	9.8
Queue Length 50th (ft)	53	89	26	101	189	189	49
Queue Length 95th (ft)	#127	270	65	#292	#463	437	90
Internal Link Dist (ft)		375		223	756	541	
Turn Bay Length (ft)			150				50
Base Capacity (vph)	289	584	214	374	914	926	729
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.48	0.33	0.67	0.57	0.57	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Future Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	12	9	10	12	12	13	12	12	13	12
Total Lost time (s)	4.0	4.0		5.0	5.0			5.0			5.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99			0.99			1.00	0.97
Flpb, ped/bikes	1.00	1.00		0.98	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.97			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	1.00
Satd. Flow (prot)	1429	1473		1439	1538			1711			1721	1399
Flt Permitted	0.44	1.00		0.59	1.00			0.88			0.89	1.00
Satd. Flow (perm)	656	1473		888	1538			1517			1538	1399
Peak-hour factor, PHF	0.69	0.92	0.83	0.66	0.84	0.73	0.82	0.96	0.64	0.81	0.88	0.89
Adj. Flow (vph)	184	229	54	71	202	49	30	435	59	58	469	264
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	184	283	0	71	251	0	0	524	0	0	527	264
Confl. Peds. (#/hr)	7		11	11		7	14		21	21		14
Confl. Bikes (#/hr)						1			1			1
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	0%	1%	0%	2%	2%	1%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	3 4			4			1			1	3
Permitted Phases	4			4			1			1		1
Actuated Green, G (s)	26.9	30.9		19.4	19.4			34.8			34.8	42.3
Effective Green, g (s)	26.9	30.9		19.4	19.4			34.8			34.8	42.3
Actuated g/C Ratio	0.32	0.37		0.23	0.23			0.42			0.42	0.51
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	4.0
Vehicle Extension (s)	2.0			4.0	4.0			2.0			2.0	2.0
Lane Grp Cap (vph)	280	545		206	357			632			640	708
v/s Ratio Prot	c0.06	0.19			c0.16							0.03
v/s Ratio Perm	0.15			0.08				c0.35			0.34	0.16
v/c Ratio	0.66	0.52		0.34	0.70			0.83			0.82	0.37
Uniform Delay, d1	22.7	20.5		26.7	29.4			21.7			21.6	12.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	4.2	0.3		1.4	6.6			8.4			8.1	0.1
Delay (s)	26.9	20.9		28.1	36.0			30.1			29.7	12.7
Level of Service	C	C		C	D			C			C	B
Approach Delay (s)		23.2			34.3			30.1			24.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

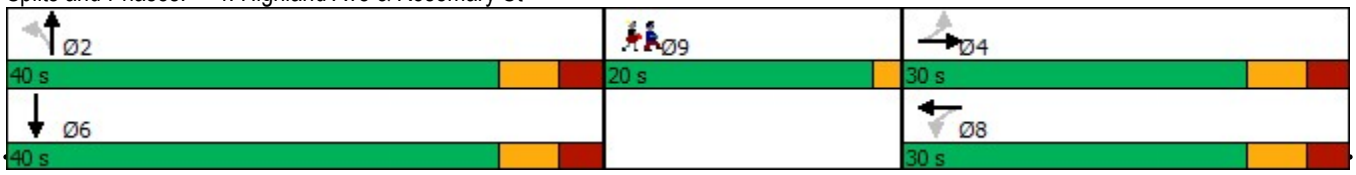
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Future Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	9	11	9	12	11	13	12	12	16	12
Storage Length (ft)	0		25	50		0	60		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97		0.99	0.98		0.99				1.00	
Frt		0.889			0.924						0.992	
Flt Protected		0.991		0.950			0.950					
Satd. Flow (prot)	0	1314	0	1570	1399	0	1570	1750	0	0	1899	0
Flt Permitted		0.912		0.430			0.300					
Satd. Flow (perm)	0	1207	0	704	1399	0	492	1750	0	0	1899	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		250			55							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1036			474			1055			1271	
Travel Time (s)		23.5			10.8			24.0			28.9	
Confl. Peds. (#/hr)	6		9	9		6	19		20	20		19
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.83	0.92	0.74	0.93	0.90	0.73	0.79	0.91	0.92	0.92	0.87	0.84
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	54	0	251	100	54	55	113	514	0	0	561	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	305	0	100	109	0	113	514	0	0	598	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)		11			11			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.30	1.19	1.30	1.14	1.19	1.10	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2			2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	20	100		20	100		20	100			100	
Trailing Detector (ft)	0	0		0	0		0	0			0	
Detector 1 Position(ft)	0	0		0	0		0	0			0	
Detector 1 Size(ft)	20	6		20	6		20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0			12.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0			40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%			44.4%	
Maximum Green (s)	23.0	23.0		23.0	23.0		33.0	33.0			33.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		Max	Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.3		14.3	14.3		34.6	34.6			34.6	
Actuated g/C Ratio		0.20		0.20	0.20		0.49	0.49			0.49	
v/c Ratio		0.69		0.70	0.33		0.47	0.59			0.64	
Control Delay		15.5		53.7	17.4		27.4	21.2			22.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		15.5		53.7	17.4		27.4	21.2			22.0	
LOS		B		D	B		C	C			C	
Approach Delay		15.5			34.7			22.3			22.0	
Approach LOS		B			C			C			C	

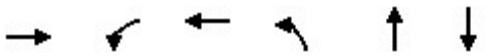
Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 69.9			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 22.5		Intersection LOS: C	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Highland Ave & Rosemary St



Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	27
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

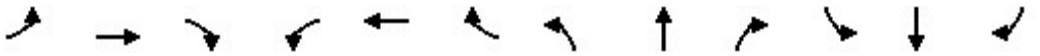
Intersection Summary



Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	305	100	109	113	514	598
v/c Ratio	0.69	0.70	0.33	0.47	0.59	0.64
Control Delay	15.5	53.7	17.4	27.4	21.2	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	53.7	17.4	27.4	21.2	22.0
Queue Length 50th (ft)	16	33	16	22	108	129
Queue Length 95th (ft)	109	#109	67	98	#423	#470
Internal Link Dist (ft)	956		394		975	1191
Turn Bay Length (ft)		50		60		
Base Capacity (vph)	580	243	519	243	867	941
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.41	0.21	0.47	0.59	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Future Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	9	11	9	12	11	13	12	12	16	12
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		0.97		1.00	0.98		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		0.99	1.00		0.99	1.00			1.00	
Frt		0.89		1.00	0.92		1.00	1.00			0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1306		1554	1398		1559	1750			1899	
Flt Permitted		0.91		0.43	1.00		0.30	1.00			1.00	
Satd. Flow (perm)		1202		703	1398		493	1750			1899	
Peak-hour factor, PHF	0.83	0.92	0.74	0.93	0.90	0.73	0.79	0.91	0.92	0.92	0.87	0.84
Adj. Flow (vph)	54	0	251	100	54	55	113	514	0	0	561	37
RTOR Reduction (vph)	0	199	0	0	44	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	106	0	100	65	0	113	514	0	0	598	0
Confl. Peds. (#/hr)	6		9	9		6	19		20	20		19
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		14.3		14.3	14.3		34.6	34.6			34.6	
Effective Green, g (s)		14.3		14.3	14.3		34.6	34.6			34.6	
Actuated g/C Ratio		0.20		0.20	0.20		0.49	0.49			0.49	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		243		142	283		241	857			930	
v/s Ratio Prot					0.05			0.29			c0.31	
v/s Ratio Perm		0.09		c0.14			0.23					
v/c Ratio		0.43		0.70	0.23		0.47	0.60			0.64	
Uniform Delay, d1		24.6		26.2	23.5		11.9	13.0			13.4	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.2		14.7	0.4		6.4	3.1			3.4	
Delay (s)		25.9		40.9	24.0		18.3	16.1			16.8	
Level of Service		C		D	C		B	B			B	
Approach Delay (s)		25.9			32.0			16.5			16.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

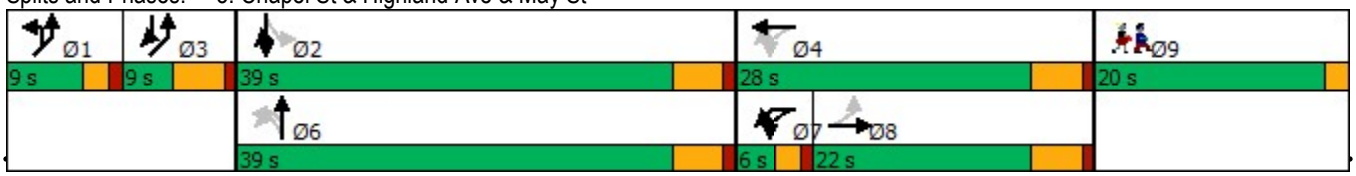
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Future Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12	10	12	12	12	16	12
Storage Length (ft)	0		0			0		0		0		0
Storage Lanes	0		0			0		0		0		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98					0.99				0.99	
Frt		0.962					0.985				0.980	
Flt Protected		0.987					0.984				0.995	
Satd. Flow (prot)	0	1629	0	0	0	0	1542	0	0	0	1867	0
Flt Permitted		0.774					0.704				0.946	
Satd. Flow (perm)	0	1275	0	0	0	0	1100	0	0	0	1773	0
Right Turn on Red				No				Yes				No
Satd. Flow (RTOR)							6					
Link Speed (mph)		30					30				30	
Link Distance (ft)		453					923				945	
Travel Time (s)		10.3					21.0				21.5	
Confl. Peds. (#/hr)	4		5	3	3	5		4	3	12		13
Confl. Bikes (#/hr)			1	1				1				2
Peak Hour Factor	0.81	0.81	0.63	0.66	0.56	0.63	0.84	0.79	1.00	0.85	0.76	0.64
Heavy Vehicles (%)	2%	1%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	75	128	44	35	18	67	154	30	4	22	197	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	282	0	0	0	0	269	0	0	0	262	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Left	Left	Right
Median Width(ft)		0					0				0	
Link Offset(ft)		0					0				0	
Crosswalk Width(ft)		16					16				16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2		1	1	2	
Detector Template	Left	Thru			Left	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100		20	20	100	
Trailing Detector (ft)	0	0			0	0	0		0	0	0	
Detector 1 Position(ft)	0	0			0	0	0		0	0	0	
Detector 1 Size(ft)	20	6			20	20	6		20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	

Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Lane Configurations										
Traffic Volume (vph)	41	215	355	162	18	182	19	10		
Future Volume (vph)	41	215	355	162	18	182	19	10		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	10	11	12	10	11	11	11		
Storage Length (ft)	0		120			0	60			
Storage Lanes	0		1			2	0			
Taper Length (ft)	25					25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00			0.95	0.98				
Frt			0.850			0.975				
Flt Protected		0.990			0.950	0.960				
Satd. Flow (prot)	0	1571	1391	0	1516	1497	0	0		
Flt Permitted		0.887			0.950	0.960				
Satd. Flow (perm)	0	1404	1391	0	1443	1488	0	0		
Right Turn on Red				No				Yes		
Satd. Flow (RTOR)						125				
Link Speed (mph)		30				30				
Link Distance (ft)		644				580				
Travel Time (s)		14.6				13.2				
Confl. Peds. (#/hr)	13		3	12	12	4	13	5		
Confl. Bikes (#/hr)			1	1						
Peak Hour Factor	0.62	0.81	0.96	0.86	0.50	0.83	0.85	0.45		
Heavy Vehicles (%)	3%	0%	1%	1%	0%	1%	0%	11%		
Adj. Flow (vph)	66	265	370	188	36	219	22	22		
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	331	558	0	36	263	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Right	Left	Left	Right	Right		
Median Width(ft)		0				21				
Link Offset(ft)		0				0				
Crosswalk Width(ft)		16				16				
Two way Left Turn Lane										
Headway Factor	1.14	1.25	1.19	1.14	1.25	1.19	1.19	1.19		
Turning Speed (mph)	15		9	9	15	15	9	9		
Number of Detectors	1	2	1		1	1				
Detector Template	Left	Thru	Right		Left	Left				
Leading Detector (ft)	20	100	20		20	20				
Trailing Detector (ft)	0	0	0		0	0				
Detector 1 Position(ft)	0	0	0		0	0				
Detector 1 Size(ft)	20	6	20		20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)		94								
Detector 2 Size(ft)		6								
Detector 2 Type		Cl+Ex								

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Detector Phase	8	8			7	7	4		6	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0			2.0	2.0	6.0		6.0	6.0	6.0	
Minimum Split (s)	11.0	11.0			6.0	6.0	11.0		11.0	11.0	11.0	
Total Split (s)	22.0	22.0			6.0	6.0	28.0		39.0	39.0	39.0	
Total Split (%)	21.0%	21.0%			5.7%	5.7%	26.7%		37.1%	37.1%	37.1%	
Maximum Green (s)	17.0	17.0			3.0	3.0	23.0		34.0	34.0	34.0	
Yellow Time (s)	4.0	4.0			2.0	2.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0				0.0	
Total Lost Time (s)		5.0					5.0				5.0	
Lead/Lag	Lag	Lag			Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None			None	None	None		Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		23.2					23.2				34.4	
Actuated g/C Ratio		0.25					0.25				0.37	
v/c Ratio		0.88					0.96				0.40	
Control Delay		65.5					82.8				26.0	
Queue Delay		0.0					0.0				0.0	
Total Delay		65.5					82.8				26.0	
LOS		E					F				C	
Approach Delay		65.5					82.8				26.0	
Approach LOS		E					F				C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 93			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 46.0		Intersection LOS: D	
Intersection Capacity Utilization 79.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Chapel St & Highland Ave & May St



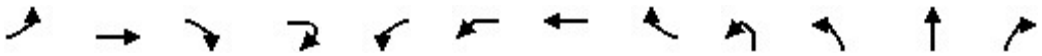
Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Detector 2 Channel										
Detector 2 Extend (s)		0.0								
Turn Type	Perm	NA	custom		Prot	Prot				
Protected Phases		2	2 3		1	1 3			3	9
Permitted Phases	2									
Detector Phase	2	2	2 3		1	1 3				
Switch Phase										
Minimum Initial (s)	6.0	6.0			1.0				4.0	5.0
Minimum Split (s)	11.0	11.0			6.0				9.0	20.0
Total Split (s)	39.0	39.0			9.0				9.0	20.0
Total Split (%)	37.1%	37.1%			8.6%				9%	19%
Maximum Green (s)	34.0	34.0			6.0				4.0	18.0
Yellow Time (s)	4.0	4.0			2.0				4.0	2.0
All-Red Time (s)	1.0	1.0			1.0				1.0	0.0
Lost Time Adjust (s)		0.0			0.0					
Total Lost Time (s)		5.0			3.0					
Lead/Lag					Lead				Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0
Recall Mode	Min	Min			None				None	None
Walk Time (s)										7.0
Flash Dont Walk (s)										11.0
Pedestrian Calls (#/hr)										18
Act Effct Green (s)		34.4	43.5		6.1	15.2				
Actuated g/C Ratio		0.37	0.47		0.07	0.16				
v/c Ratio		0.64	0.86		0.36	0.75				
Control Delay		33.2	39.6		55.8	35.7				
Queue Delay		0.0	0.0		0.0	0.0				
Total Delay		33.2	39.6		55.8	35.7				
LOS		C	D		E	D				
Approach Delay		37.3				38.2				
Approach LOS		D				D				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR	NEL2	NEL
Lane Group Flow (vph)	282	269	262	331	558	36	263
v/c Ratio	0.88	0.96	0.40	0.64	0.86	0.36	0.75
Control Delay	65.5	82.8	26.0	33.2	39.6	55.8	35.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	82.8	26.0	33.2	39.6	55.8	35.7
Queue Length 50th (ft)	141	135	96	136	233	19	68
Queue Length 95th (ft)	#309	#331	175	261	#593	31	#186
Internal Link Dist (ft)	373	843	865	564			500
Turn Bay Length (ft)					120		
Base Capacity (vph)	319	279	655	518	649	99	349
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.96	0.40	0.64	0.86	0.36	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Future Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12	10	12	12	12	16	12
Total Lost time (s)		5.0					5.0				5.0	
Lane Util. Factor		1.00					1.00				1.00	
Frpb, ped/bikes		0.99					1.00				0.99	
Flpb, ped/bikes		1.00					1.00				1.00	
Frt		0.96					0.98				0.98	
Flt Protected		0.99					0.98				1.00	
Satd. Flow (prot)		1631					1538				1865	
Flt Permitted		0.77					0.70				0.95	
Satd. Flow (perm)		1280					1101				1773	
Peak-hour factor, PHF	0.81	0.81	0.63	0.66	0.56	0.63	0.84	0.79	1.00	0.85	0.76	0.64
Adj. Flow (vph)	75	128	44	35	18	67	154	30	4	22	197	39
RTOR Reduction (vph)	0	0	0	0	0	0	5	0	0	0	0	0
Lane Group Flow (vph)	0	282	0	0	0	0	264	0	0	0	262	0
Confl. Peds. (#/hr)	4		5	3	3	5		4	3	12		13
Confl. Bikes (#/hr)			1	1				1				2
Heavy Vehicles (%)	2%	1%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Actuated Green, G (s)		23.2					23.2				34.4	
Effective Green, g (s)		23.2					23.2				34.4	
Actuated g/C Ratio		0.25					0.25				0.37	
Clearance Time (s)		5.0					5.0				5.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		315					271				648	
v/s Ratio Prot												
v/s Ratio Perm		0.22					c0.24				0.15	
v/c Ratio		0.90					0.98				0.40	
Uniform Delay, d1		34.3					35.2				22.2	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		26.0					47.6				0.4	
Delay (s)		60.2					82.7				22.6	
Level of Service		E					F				C	
Approach Delay (s)		60.2					82.7				22.6	
Approach LOS		E					F				C	

Intersection Summary			
HCM 2000 Control Delay	44.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	23.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	41	215	355	162	18	182	19	10
Future Volume (vph)	41	215	355	162	18	182	19	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	10	11	11	11
Total Lost time (s)		5.0	5.0		3.0	3.0		
Lane Util. Factor		1.00	1.00		1.00	1.00		
Frpb, ped/bikes		1.00	1.00		1.00	0.99		
Flpb, ped/bikes		1.00	1.00		1.00	1.00		
Frt		1.00	0.85		1.00	0.97		
Flt Protected		0.99	1.00		0.95	0.96		
Satd. Flow (prot)		1567	1391		1516	1499		
Flt Permitted		0.89	1.00		0.95	0.96		
Satd. Flow (perm)		1404	1391		1516	1499		
Peak-hour factor, PHF	0.62	0.81	0.96	0.86	0.50	0.83	0.85	0.45
Adj. Flow (vph)	66	265	370	188	36	219	22	22
RTOR Reduction (vph)	0	0	0	0	0	108	0	0
Lane Group Flow (vph)	0	331	558	0	36	155	0	0
Confl. Peds. (#/hr)	13		3	12	12	4	13	5
Confl. Bikes (#/hr)			1	1				
Heavy Vehicles (%)	3%	0%	1%	1%	0%	1%	0%	11%
Turn Type	Perm	NA	custom		Prot	Prot		
Protected Phases		2	2 3		1	1 3		
Permitted Phases	2							
Actuated Green, G (s)		34.4	43.4		6.1	13.1		
Effective Green, g (s)		34.4	43.4		6.1	13.1		
Actuated g/C Ratio		0.37	0.46		0.06	0.14		
Clearance Time (s)		5.0			3.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		513	641		98	208		
v/s Ratio Prot			c0.40		0.02	c0.10		
v/s Ratio Perm		0.24						
v/c Ratio		0.65	0.87		0.37	0.75		
Uniform Delay, d1		24.8	22.8		42.2	38.9		
Progression Factor		1.00	1.00		1.00	1.00		
Incremental Delay, d2		2.8	12.3		2.3	13.6		
Delay (s)		27.6	35.2		44.5	52.5		
Level of Service		C	D		D	D		
Approach Delay (s)		32.3				51.6		
Approach LOS		C				D		

Intersection Summary

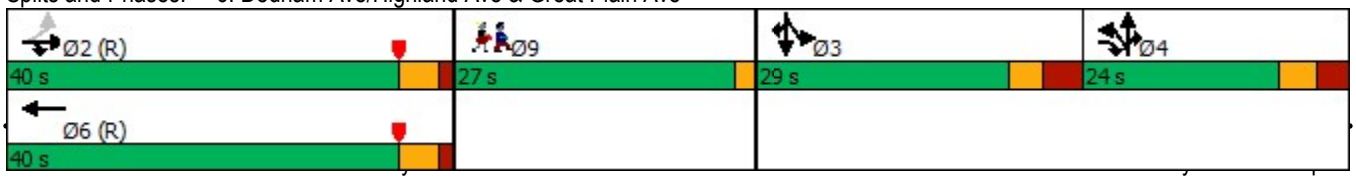
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Future Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	10	10	10	10	10	10	10	10	12
Storage Length (ft)	0		0	0		0	0		35	0		90
Storage Lanes	0		1	0		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		0.99				0.99	
Frt			0.850		0.972				0.850			0.850
Flt Protected		0.993					0.950				0.984	
Satd. Flow (prot)	0	1569	1391	0	2887	0	1486	1596	1357	0	1560	1454
Flt Permitted		0.793					0.950				0.984	
Satd. Flow (perm)	0	1249	1391	0	2887	0	1469	1596	1357	0	1544	1454
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									95			95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		238			434			312			945	
Travel Time (s)		5.4			9.9			7.1			21.5	
Confl. Peds. (#/hr)	27		39	39		27	9		14	14		9
Confl. Bikes (#/hr)			3			2			1			
Peak Hour Factor	0.63	0.82	0.93	0.25	0.85	0.87	0.86	0.77	0.80	0.74	0.84	0.84
Heavy Vehicles (%)	7%	0%	1%	0%	1%	0%	2%	0%	0%	0%	1%	0%
Adj. Flow (vph)	54	322	311	0	376	85	221	131	90	108	221	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	376	311	0	461	0	221	131	90	0	329	76
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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1		2		1	2	1	1	2	1
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20		100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20		6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Detector Phase	2	2	2 4		6		4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0			10.0		11.5	11.5	11.5	11.5	11.5	11.5
Total Split (s)	40.0	40.0			40.0		24.0	24.0	24.0	29.0	29.0	29.0
Total Split (%)	33.3%	33.3%			33.3%		20.0%	20.0%	20.0%	24.2%	24.2%	24.2%
Maximum Green (s)	35.0	35.0			35.0		17.5	17.5	17.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5			1.5		3.0	3.0	3.0	3.5	3.5	3.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Lead/Lag							Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Min	C-Min			C-Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		35.5	60.8		35.5		18.8	18.8	18.8		26.1	26.1
Actuated g/C Ratio		0.30	0.51		0.30		0.16	0.16	0.16		0.22	0.22
v/c Ratio		1.02	0.44		0.54		0.95	0.53	0.31		0.97	0.19
Control Delay		80.8	15.5		38.4		99.6	55.8	11.2		90.4	6.3
Queue Delay		14.7	1.7		3.7		0.0	0.0	0.0		0.0	0.0
Total Delay		95.4	17.2		42.0		99.6	55.8	11.2		90.4	6.3
LOS		F	B		D		F	E	B		F	A
Approach Delay		60.0			42.0			68.7			74.7	
Approach LOS		E			D			E			E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 60.8		Intersection LOS: E	
Intersection Capacity Utilization 77.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Dedham Ave/Highland Ave & Great Plain Ave



Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	44
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	376	311	461	221	131	90	329	76
v/c Ratio	1.02	0.44	0.54	0.95	0.53	0.31	0.97	0.19
Control Delay	80.8	15.5	38.4	99.6	55.8	11.2	90.4	6.3
Queue Delay	14.7	1.7	3.7	0.0	0.0	0.0	0.0	0.0
Total Delay	95.4	17.2	42.0	99.6	55.8	11.2	90.4	6.3
Queue Length 50th (ft)	~315	76	158	~182	96	0	~295	0
Queue Length 95th (ft)	#421	163	198	#317	136	31	#430	23
Internal Link Dist (ft)	158		354		232		865	
Turn Bay Length (ft)						35		90
Base Capacity (vph)	370	704	855	232	249	292	339	390
Starvation Cap Reductn	16	240	0	0	0	0	0	0
Spillback Cap Reductn	0	0	298	0	0	0	0	9
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.67	0.83	0.95	0.53	0.31	0.97	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Future Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	11	10	10	10	10	10	10	10	10	12
Total Lost time (s)		5.0	5.0		5.0		6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00		1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)		1564	1391		2888		1486	1596	1357		1560	1454
Flt Permitted		0.79	1.00		1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (perm)		1250	1391		2888		1486	1596	1357		1560	1454
Peak-hour factor, PHF	0.63	0.82	0.93	0.25	0.85	0.87	0.86	0.77	0.80	0.74	0.84	0.84
Adj. Flow (vph)	54	322	311	0	376	85	221	131	90	108	221	76
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	76	0	0	59
Lane Group Flow (vph)	0	376	311	0	461	0	221	131	14	0	329	17
Confl. Peds. (#/hr)	27		39	39		27	9		14	14		9
Confl. Bikes (#/hr)			3			2			1			
Heavy Vehicles (%)	7%	0%	1%	0%	1%	0%	2%	0%	0%	0%	1%	0%
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Actuated Green, G (s)		35.1	60.4		35.1		18.8	18.8	18.8		26.1	26.1
Effective Green, g (s)		35.1	53.9		35.1		18.8	18.8	18.8		26.1	26.1
Actuated g/C Ratio		0.29	0.45		0.29		0.16	0.16	0.16		0.22	0.22
Clearance Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		2.0			2.0		2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		365	624		844		232	250	212		339	316
v/s Ratio Prot			0.22		0.16		c0.15	0.08	0.01		c0.21	0.01
v/s Ratio Perm		c0.30										
v/c Ratio		1.03	0.50		0.55		0.95	0.52	0.07		0.97	0.05
Uniform Delay, d1		42.5	23.5		35.7		50.2	46.5	43.1		46.6	37.2
Progression Factor		0.70	0.69		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		52.5	0.2		2.5		45.4	0.9	0.0		40.7	0.0
Delay (s)		82.4	16.4		38.3		95.5	47.4	43.2		87.2	37.2
Level of Service		F	B		D		F	D	D		F	D
Approach Delay (s)		52.5			38.3			70.6			77.8	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	58.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

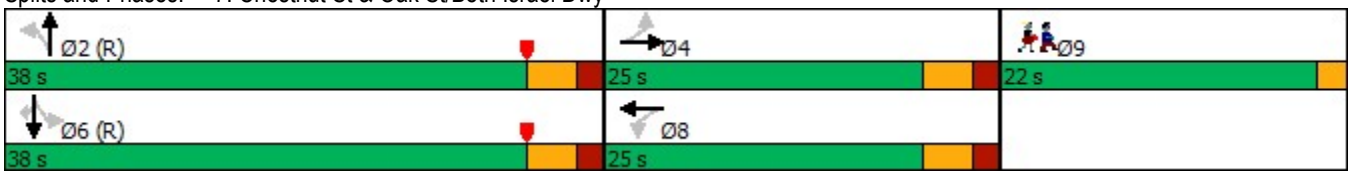
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Future Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	8	8	11	11	11	9	9	12	12	9	9
Storage Length (ft)	0		0	0		0	80		0	0		150
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.907			0.929			0.995				0.850
Flt Protected		0.985			0.982		0.950					
Satd. Flow (prot)	0	1298	0	0	1478	0	1433	1501	0	0	1509	1283
Flt Permitted		0.899			0.899		0.337				0.998	
Satd. Flow (perm)	0	1185	0	0	1353	0	508	1501	0	0	1506	1283
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								2				76
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			314			227			439	
Travel Time (s)		13.8			7.1			5.2			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	1	139	7	2	10	111	398	13	4	537	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	202	0	0	19	0	111	411	0	0	541	85
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			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.19	1.19	1.19	1.30	1.30	1.14	1.14	1.30	1.30
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	25.0	25.0		25.0	25.0		38.0	38.0		38.0	38.0	38.0
Total Split (%)	29.4%	29.4%		29.4%	29.4%		44.7%	44.7%		44.7%	44.7%	44.7%
Maximum Green (s)	20.0	20.0		20.0	20.0		33.0	33.0		33.0	33.0	33.0
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		20.0			20.0		46.2	46.2			46.2	46.2
Actuated g/C Ratio		0.24			0.24		0.54	0.54			0.54	0.54
v/c Ratio		0.73			0.06		0.40	0.50			0.66	0.12
Control Delay		47.1			26.0		22.1	18.2			27.9	13.5
Queue Delay		0.0			0.0		0.0	0.0			0.6	0.0
Total Delay		47.1			26.0		22.1	18.2			28.5	13.5
LOS		D			C		C	B			C	B
Approach Delay		47.1			26.0			19.1			26.5	
Approach LOS		D			C			B			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 26.7		Intersection LOS: C	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Chestnut St & Oak St/Beth Israel Dwy



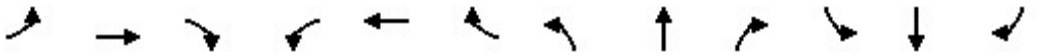
Lane Group	Ø9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	22.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	202	19	111	411	541	85
v/c Ratio	0.73	0.06	0.40	0.50	0.66	0.12
Control Delay	47.1	26.0	22.1	18.2	27.9	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.6	0.0
Total Delay	47.1	26.0	22.1	18.2	28.5	13.5
Queue Length 50th (ft)	100	8	24	94	80	0
Queue Length 95th (ft)	#202	25	#112	288	m#413	m54
Internal Link Dist (ft)	526	234		147	359	
Turn Bay Length (ft)			80			150
Base Capacity (vph)	278	318	276	816	818	732
Starvation Cap Reductn	0	0	0	0	74	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.06	0.40	0.50	0.73	0.12

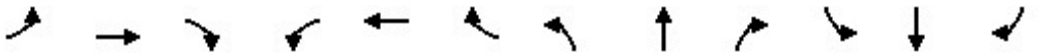
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Future Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	11	11	11	9	9	12	12	9	9
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	1.00
Frt		0.91			0.93		1.00	1.00			1.00	0.85
Flt Protected		0.98			0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1298			1478		1433	1502			1508	1282
Flt Permitted		0.90			0.90		0.34	1.00			1.00	1.00
Satd. Flow (perm)		1185			1353		509	1502			1505	1282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	1	139	7	2	10	111	398	13	4	537	85
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	36
Lane Group Flow (vph)	0	202	0	0	19	0	111	410	0	0	541	49
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		20.0			20.0		45.0	45.0			45.0	45.0
Effective Green, g (s)		20.0			20.0		45.0	45.0			45.0	45.0
Actuated g/C Ratio		0.24			0.24		0.53	0.53			0.53	0.53
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		278			318		269	795			796	678
v/s Ratio Prot								0.27				
v/s Ratio Perm		c0.17			0.01		0.22				c0.36	0.04
v/c Ratio		0.73			0.06		0.41	0.52			0.68	0.07
Uniform Delay, d1		30.0			25.2		12.0	12.9			14.7	9.8
Progression Factor		1.00			1.00		1.00	1.00			1.36	2.59
Incremental Delay, d2		15.3			0.4		4.6	2.4			3.6	0.2
Delay (s)		45.3			25.6		16.7	15.3			23.6	25.5
Level of Service		D			C		B	B			C	C
Approach Delay (s)		45.3			25.6			15.6			23.9	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



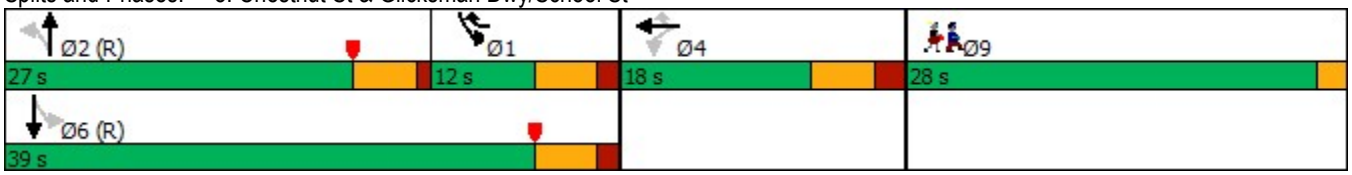
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Future Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	9	13	9	12	12	9	12	12
Storage Length (ft)	0		0	0		150	40		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			70			70			100		
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						0.850		0.942			0.999	
Flt Protected					0.954		0.950			0.950		
Satd. Flow (prot)	0	0	0	0	1439	1473	1433	1579	0	1433	1675	0
Flt Permitted					0.954		0.396			0.252		
Satd. Flow (perm)	0	0	0	0	1439	1473	597	1579	0	380	1675	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						76		36				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		162			420			439			782	
Travel Time (s)		3.7			9.5			10.0			17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	195	7	76	7	375	234	68	475	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	202	76	7	609	0	68	478	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.30	1.30	1.10	1.30	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2		1	2	
Detector Template				Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)				20	100	20	20	100		20	100	
Trailing Detector (ft)				0	0	0	0	0		0	0	
Detector 1 Position(ft)				0	0	0	0	0		0	0	
Detector 1 Size(ft)				20	6	20	20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				4		4	2			6		
Detector Phase				4	4	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)				6.0	6.0	6.0	2.0	2.0		6.0	10.0	
Minimum Split (s)				12.0	12.0	11.5	7.0	7.0		11.5	15.5	
Total Split (s)				18.0	18.0	12.0	27.0	27.0		12.0	39.0	
Total Split (%)				21.2%	21.2%	14.1%	31.8%	31.8%		14.1%	45.9%	
Maximum Green (s)				12.0	12.0	6.5	22.0	22.0		6.5	33.5	
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)				2.0	2.0	1.5	1.0	1.0		1.5	1.5	
Lost Time Adjust (s)					0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lead/Lag						Lag	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode				None	None	None	C-Min	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					12.0	21.9	41.4	41.4		51.5	50.3	
Actuated g/C Ratio					0.14	0.26	0.49	0.49		0.61	0.59	
v/c Ratio					1.00	0.17	0.02	0.77		0.22	0.48	
Control Delay					101.8	7.0	12.5	27.6		18.5	16.3	
Queue Delay					34.5	0.0	0.0	0.0		0.0	0.1	
Total Delay					136.2	7.0	12.5	27.6		18.5	16.3	
LOS					F	A	B	C		B	B	
Approach Delay					100.9			27.4			16.6	
Approach LOS					F			C			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 9 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 37.5		Intersection LOS: D	
Intersection Capacity Utilization 64.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Chestnut St & Glicksman Dwy/School St



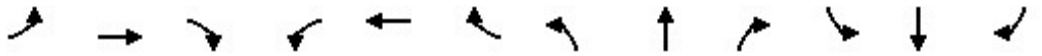
Lane Group	Ø9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	33%
Maximum Green (s)	26.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	202	76	7	609	68	478
v/c Ratio	1.00	0.17	0.02	0.77	0.22	0.48
Control Delay	101.8	7.0	12.5	27.6	18.5	16.3
Queue Delay	34.5	0.0	0.0	0.0	0.0	0.1
Total Delay	136.2	7.0	12.5	27.6	18.5	16.3
Queue Length 50th (ft)	109	0	1	212	9	82
Queue Length 95th (ft)	#245	30	m5	#615	49	328
Internal Link Dist (ft)	340			359		702
Turn Bay Length (ft)		150	40		115	
Base Capacity (vph)	203	403	290	787	312	991
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	31	0	0	0	0	32
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.17	0.19	0.02	0.77	0.22	0.50

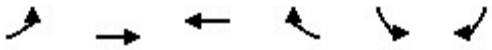
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Future Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	9	9	13	9	12	12	9	12	12
Total Lost time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frt					1.00	0.85	1.00	0.94		1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1439	1472	1433	1580		1433	1675	
Flt Permitted					0.95	1.00	0.40	1.00		0.25	1.00	
Satd. Flow (perm)					1439	1472	598	1580		381	1675	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	195	7	76	7	375	234	68	475	3
RTOR Reduction (vph)	0	0	0	0	0	61	0	19	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	202	15	7	590	0	68	478	0
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Actuated Green, G (s)					12.0	17.0	39.1	39.1		49.1	49.1	
Effective Green, g (s)					12.0	17.0	39.1	39.1		49.1	49.1	
Actuated g/C Ratio					0.14	0.20	0.46	0.46		0.58	0.58	
Clearance Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Vehicle Extension (s)					3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)					203	389	275	726		281	967	
v/s Ratio Prot						0.00		c0.37		0.01	c0.29	
v/s Ratio Perm					0.14	0.01	0.01			0.13		
v/c Ratio					1.00	0.04	0.03	0.81		0.24	0.49	
Uniform Delay, d1					36.5	27.4	12.5	19.8		19.4	10.6	
Progression Factor					1.00	1.00	0.56	0.66		1.00	1.00	
Incremental Delay, d2					61.4	0.0	0.2	9.0		0.4	1.8	
Delay (s)					97.9	27.5	7.2	22.1		19.9	12.4	
Level of Service					F	C	A	C		B	B	
Approach Delay (s)		0.0			78.6			21.9			13.3	
Approach LOS		A			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	89	594	589	27	14	217
Future Volume (vph)	89	595	590	27	14	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.989		0.878	
Flt Protected		0.992			0.995	
Satd. Flow (prot)	0	2978	2972	0	1433	0
Flt Permitted		0.992			0.995	
Satd. Flow (perm)	0	2978	2972	0	1433	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		180	394		416	
Travel Time (s)		4.1	9.0		9.5	
Confl. Peds. (#/hr)	23			23	1	23
Peak Hour Factor	0.79	0.98	0.92	0.52	0.54	0.90
Heavy Vehicles (%)	1%	1%	1%	0%	8%	0%
Adj. Flow (vph)	113	607	641	52	26	241
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	720	693	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.25	1.25	1.25	1.19	1.19
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			

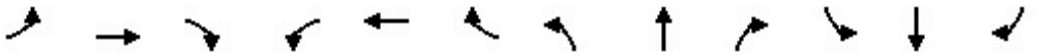
Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	594	589	27	14	217
Future Vol, veh/h	89	595	590	27	14	217
Conflicting Peds, #/hr	23	0	0	23	1	23
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	79	98	92	52	54	90
Heavy Vehicles, %	1	1	1	0	8	0
Mvmt Flow	113	607	641	52	26	241

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	716	0	-	0	1221	393
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	531	-
Critical Hdwy	4.12	-	-	-	6.96	6.9
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	2.21	-	-	-	3.58	3.3
Pot Cap-1 Maneuver	887	-	-	-	164	612
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	537	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	869	-	-	-	127	589
Mov Cap-2 Maneuver	-	-	-	-	127	-
Stage 1	-	-	-	-	349	-
Stage 2	-	-	-	-	526	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	25.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	869	-	-	-	435
HCM Lane V/C Ratio	0.13	-	-	-	0.614
HCM Control Delay (s)	9.8	0.7	-	-	25.6
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	4

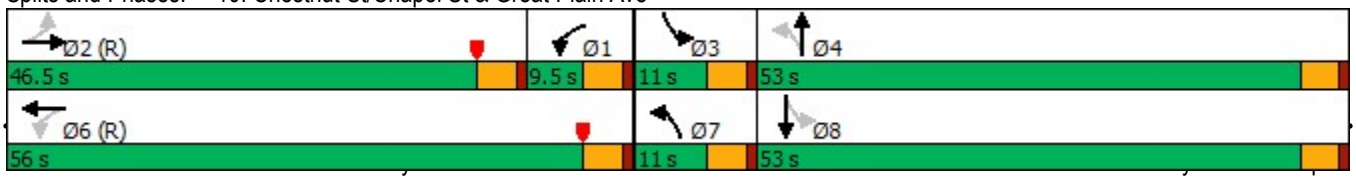


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	501	68	104	442	29	95	178	62	24	305	78
Future Volume (vph)	39	502	68	104	442	29	95	178	62	24	305	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	175		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99		0.99	0.99		0.99	0.99	
Frt		0.982			0.991			0.963			0.965	
Flt Protected		0.996			0.991		0.950			0.950		
Satd. Flow (prot)	0	2895	0	0	2937	0	1501	1572	0	1516	1570	0
Flt Permitted		0.846			0.641		0.215			0.533		
Satd. Flow (perm)	0	2457	0	0	1889	0	337	1572	0	846	1570	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			238			782			424	
Travel Time (s)		9.0			5.4			17.8			9.6	
Confl. Peds. (#/hr)	18		48	48		18	29		13	13		29
Confl. Bikes (#/hr)												4
Peak Hour Factor	0.80	0.96	0.86	0.84	0.88	0.72	0.80	0.84	0.88	0.69	0.87	0.74
Heavy Vehicles (%)	0%	1%	2%	1%	1%	4%	1%	1%	0%	0%	1%	0%
Adj. Flow (vph)	49	523	79	124	502	40	119	212	70	35	351	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	651	0	0	666	0	119	282	0	35	456	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.19	1.19	1.25	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	39.0	39.0		9.5	50.0		11.0	29.0		11.0	29.0	
Total Split (s)	46.5	46.5		9.5	56.0		11.0	53.0		11.0	53.0	
Total Split (%)	38.8%	38.8%		7.9%	46.7%		9.2%	44.2%		9.2%	44.2%	
Maximum Green (s)	42.0	42.0		5.0	51.5		6.5	48.5		6.5	48.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lead		Lag			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)	8.0	8.0			8.0							
Flash Dont Walk (s)	22.0	22.0			22.0							
Pedestrian Calls (#/hr)	54	54			54							
Act Effct Green (s)		57.1			57.1		52.1	47.2		46.5	40.2	
Actuated g/C Ratio		0.48			0.48		0.43	0.39		0.39	0.34	
v/c Ratio		0.56			0.74		0.51	0.46		0.10	0.87	
Control Delay		25.9			19.0		27.5	29.8		17.5	54.2	
Queue Delay		0.2			4.1		0.0	0.4		0.0	0.0	
Total Delay		26.1			23.0		27.5	30.2		17.5	54.2	
LOS		C			C		C	C		B	D	
Approach Delay		26.1			23.0			29.4			51.6	
Approach LOS		C			C			C			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 11 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 31.4		Intersection LOS: C	
Intersection Capacity Utilization 94.5%		ICU Level of Service F	
Analysis Period (min) 15			

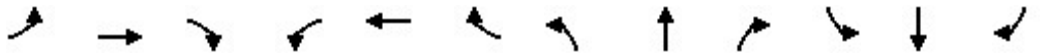
Splits and Phases: 10: Chestnut St/Chapel St & Great Plain Ave



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	651	666	119	282	35	456
v/c Ratio	0.56	0.74	0.51	0.46	0.10	0.87
Control Delay	25.9	19.0	27.5	29.8	17.5	54.2
Queue Delay	0.2	4.1	0.0	0.4	0.0	0.0
Total Delay	26.1	23.0	27.5	30.2	17.5	54.2
Queue Length 50th (ft)	198	271	50	161	14	326
Queue Length 95th (ft)	267	m332	75	216	24	401
Internal Link Dist (ft)	314	158		702		344
Turn Bay Length (ft)			175		100	
Base Capacity (vph)	1169	899	235	646	366	634
Starvation Cap Reductn	0	158	0	0	0	0
Spillback Cap Reductn	98	0	0	100	53	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.90	0.51	0.52	0.11	0.72

Intersection Summary

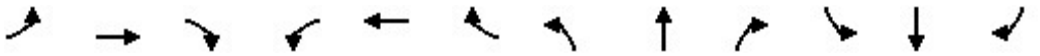
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	501	68	104	442	29	95	178	62	24	305	78
Future Volume (vph)	39	502	68	104	442	29	95	178	62	24	305	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	11	11	10	11	11
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.96		1.00	0.97	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2893			2919		1499	1571		1511	1570	
Flt Permitted		0.85			0.64		0.22	1.00		0.53	1.00	
Satd. Flow (perm)		2458			1889		340	1571		848	1570	
Peak-hour factor, PHF	0.80	0.96	0.86	0.84	0.88	0.72	0.80	0.84	0.88	0.69	0.87	0.74
Adj. Flow (vph)	49	523	79	124	502	40	119	212	70	35	351	105
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	651	0	0	666	0	119	282	0	35	456	0
Confl. Peds. (#/hr)	18		48	48		18	29		13	13		29
Confl. Bikes (#/hr)												4
Heavy Vehicles (%)	0%	1%	2%	1%	1%	4%	1%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		55.3			55.3		55.7	47.2		46.0	42.0	
Effective Green, g (s)		55.3			55.3		55.7	47.2		46.0	42.0	
Actuated g/C Ratio		0.46			0.46		0.46	0.39		0.38	0.35	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1132			870		246	617		347	549	
v/s Ratio Prot							c0.04	0.18		0.00	c0.29	
v/s Ratio Perm		0.26			c0.35		0.19			0.04		
v/c Ratio		0.58			0.77		0.48	0.46		0.10	0.83	
Uniform Delay, d1		23.7			26.9		22.1	26.9		23.4	35.7	
Progression Factor		1.00			0.52		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.1			3.1		1.5	0.5		0.1	10.3	
Delay (s)		25.9			17.2		23.6	27.5		23.5	46.0	
Level of Service		C			B		C	C		C	D	
Approach Delay (s)		25.9			17.2			26.3			44.4	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	109	9	209	120	7	14	4	105	7	0	2
Future Volume (vph)	3	109	9	209	120	7	14	4	105	7	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	14	12	12	13	12	12	10	12
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
Ped Bike Factor												
Frt		0.987			0.997			0.898			0.958	
Flt Protected		0.997			0.969			0.992			0.967	
Satd. Flow (prot)	0	1724	0	0	1751	0	0	1533	0	0	1479	0
Flt Permitted		0.997			0.969			0.992			0.967	
Satd. Flow (perm)	0	1724	0	0	1751	0	0	1533	0	0	1479	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		521			453			566			491	
Travel Time (s)		11.8			10.3			12.9			11.2	
Confl. Peds. (#/hr)	6		4	4		6	5		3	3		5
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.38	0.95	0.67	0.80	0.85	0.75	0.54	0.33	0.88	0.38	0.92	0.25
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	25%	1%	0%	0%	0%
Adj. Flow (vph)	8	115	13	261	141	9	26	12	119	18	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	136	0	0	411	0	0	157	0	0	26	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	1.14	1.10	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

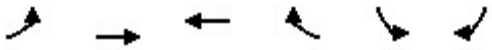
Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	109	9	209	120	7	14	4	105	7	0	2
Future Vol, veh/h	3	109	9	209	120	7	14	4	105	7	0	2
Conflicting Peds, #/hr	6	0	4	4	0	6	5	0	3	3	0	5
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	38	95	67	80	85	75	54	33	88	38	92	25
Heavy Vehicles, %	0	1	0	1	0	0	0	25	1	0	0	0
Mvmt Flow	8	115	13	261	141	9	26	12	119	18	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	156	0	0	132	0	0	819	820	129	880	822	157
Stage 1	-	-	-	-	-	-	142	142	-	674	674	-
Stage 2	-	-	-	-	-	-	677	678	-	206	148	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.1	6.75	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.75	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.75	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.5	4.225	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1436	-	-	1459	-	-	297	285	924	270	311	894
Stage 1	-	-	-	-	-	-	866	737	-	448	457	-
Stage 2	-	-	-	-	-	-	446	418	-	801	779	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1429	-	-	1453	-	-	247	226	917	189	246	885
Mov Cap-2 Maneuver	-	-	-	-	-	-	247	226	-	189	246	-
Stage 1	-	-	-	-	-	-	857	730	-	443	366	-
Stage 2	-	-	-	-	-	-	354	334	-	679	771	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	5.1	14.3	21.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	545	1429	-	-	1453	-	-	248
HCM Lane V/C Ratio	0.289	0.006	-	-	0.18	-	-	0.107
HCM Control Delay (s)	14.3	7.5	0	-	8	0	-	21.2
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.7	-	-	0.4



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	74	93	94	60	88	189
Future Volume (vph)	74	93	94	60	88	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.939		0.916	
Flt Protected		0.981			0.982	
Satd. Flow (prot)	0	1678	1429	0	1631	0
Flt Permitted		0.981			0.982	
Satd. Flow (perm)	0	1678	1429	0	1631	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		525	1036		802	
Travel Time (s)		11.9	23.5		18.2	
Confl. Peds. (#/hr)	12			12	2	1
Peak Hour Factor	0.84	0.66	0.79	0.61	0.65	0.84
Heavy Vehicles (%)	0%	0%	4%	6%	0%	1%
Adj. Flow (vph)	88	141	119	98	135	225
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	229	217	0	360	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.25	1.25	1.05	1.05
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

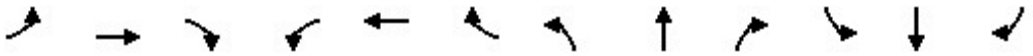
Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	93	94	60	88	189
Future Vol, veh/h	74	93	94	60	88	189
Conflicting Peds, #/hr	12	0	0	12	2	1
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	84	66	79	61	65	84
Heavy Vehicles, %	0	0	4	6	0	1
Mvmt Flow	88	141	119	98	135	225

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	229	0	-	0	499	181
Stage 1	-	-	-	-	180	-
Stage 2	-	-	-	-	319	-
Critical Hdwy	4.1	-	-	-	6.4	6.21
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.309
Pot Cap-1 Maneuver	1351	-	-	-	535	864
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1333	-	-	-	484	852
Mov Cap-2 Maneuver	-	-	-	-	484	-
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	731	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1333	-	-	-	663
HCM Lane V/C Ratio	0.066	-	-	-	0.544
HCM Control Delay (s)	7.9	0	-	-	16.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	3.3

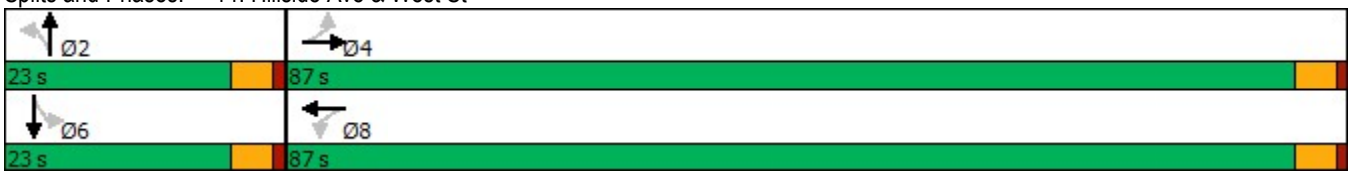


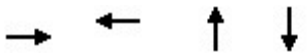
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	267	20	137	312	13	13	63	86	13	92	34
Future Volume (vph)	104	267	20	137	312	13	13	63	86	13	92	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	12	12	14	12	12	13	12	12	13	12
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
Ped Bike Factor		0.99			1.00			0.99			0.99	
Frt		0.992			0.994			0.935			0.963	
Flt Protected		0.975			0.987			0.995			0.994	
Satd. Flow (prot)	0	1478	0	0	1786	0	0	1605	0	0	1677	0
Flt Permitted		0.597			0.678			0.908			0.857	
Satd. Flow (perm)	0	899	0	0	1225	0	0	1464	0	0	1445	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			6			36			15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		459			455			883			496	
Travel Time (s)		10.4			10.3			20.1			11.3	
Confl. Peds. (#/hr)	11		8	8		11	3		4	4		3
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.26	0.77	0.45	0.97	0.85	0.60	0.60	0.75	0.89	0.60	0.87	0.71
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%
Adj. Flow (vph)	400	347	44	141	367	22	22	84	97	22	106	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	791	0	0	530	0	0	203	0	0	176	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	1.14	1.30	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	87.0	87.0		87.0	87.0		23.0	23.0		23.0	23.0	
Total Split (%)	79.1%	79.1%		79.1%	79.1%		20.9%	20.9%		20.9%	20.9%	
Maximum Green (s)	82.5	82.5		82.5	82.5		18.5	18.5		18.5	18.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	20	20		20	20		20	20		20	20	
Act Effct Green (s)		82.5			82.5			15.8			15.8	
Actuated g/C Ratio		0.77			0.77			0.15			0.15	
v/c Ratio		1.14			0.56			0.83			0.78	
Control Delay		97.6			8.2			62.8			63.7	
Queue Delay		0.0			1.3			0.0			0.0	
Total Delay		97.6			9.6			62.8			63.7	
LOS		F			A			E			E	
Approach Delay		97.6			9.6			62.8			63.7	
Approach LOS		F			A			E			E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 107.4			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 62.5		Intersection LOS: E	
Intersection Capacity Utilization 59.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 14: Hillside Ave & West St



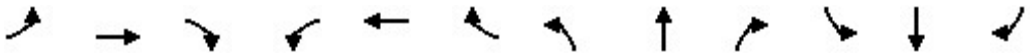


Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	791	530	203	176
v/c Ratio	1.14	0.56	0.83	0.78
Control Delay	97.6	8.2	62.8	63.7
Queue Delay	0.0	1.3	0.0	0.0
Total Delay	97.6	9.6	62.8	63.7
Queue Length 50th (ft)	~663	135	113	108
Queue Length 95th (ft)	#702	195	154	#188
Internal Link Dist (ft)	379	375	803	416
Turn Bay Length (ft)				
Base Capacity (vph)	692	942	282	261
Starvation Cap Reductn	0	224	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.14	0.74	0.72	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	267	20	137	312	13	13	63	86	13	92	34
Future Volume (vph)	104	267	20	137	312	13	13	63	86	13	92	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	12	12	14	12	12	13	12	12	13	12
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			0.99	
Flpb, ped/bikes		0.99			1.00			1.00			1.00	
Frt		0.99			0.99			0.94			0.96	
Flt Protected		0.98			0.99			0.99			0.99	
Satd. Flow (prot)		1469			1783			1604			1676	
Flt Permitted		0.60			0.68			0.91			0.86	
Satd. Flow (perm)		900			1224			1464			1446	
Peak-hour factor, PHF	0.26	0.77	0.45	0.97	0.85	0.60	0.60	0.75	0.89	0.60	0.87	0.71
Adj. Flow (vph)	400	347	44	141	367	22	22	84	97	22	106	48
RTOR Reduction (vph)	0	2	0	0	1	0	0	31	0	0	13	0
Lane Group Flow (vph)	0	789	0	0	529	0	0	172	0	0	163	0
Confl. Peds. (#/hr)	11		8	8		11	3		4	4		3
Confl. Bikes (#/hr)									3			1
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		82.6			82.6			15.9			15.9	
Effective Green, g (s)		82.6			82.6			15.9			15.9	
Actuated g/C Ratio		0.77			0.77			0.15			0.15	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		691			940			216			213	
v/s Ratio Prot												
v/s Ratio Perm		c0.88			0.43			c0.12			0.11	
v/c Ratio		1.14			0.56			0.80			0.77	
Uniform Delay, d1		12.5			5.1			44.2			44.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		80.5			0.8			18.2			15.1	
Delay (s)		93.0			5.9			62.5			59.1	
Level of Service		F			A			E			E	
Approach Delay (s)		93.0			5.9			62.5			59.1	
Approach LOS		F			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	58.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	107.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	168	65	30	150	39	34	71	23	19	43	12
Future Volume (vph)	13	168	65	30	150	39	34	71	23	19	43	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	15	12	12	13	12
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
Ped Bike Factor												
Frt		0.962			0.977			0.981			0.978	
Flt Protected		0.997			0.992			0.987			0.987	
Satd. Flow (prot)	0	1630	0	0	1519	0	0	1807	0	0	1632	0
Flt Permitted		0.997			0.992			0.987			0.987	
Satd. Flow (perm)	0	1630	0	0	1519	0	0	1807	0	0	1632	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			695			637			578	
Travel Time (s)		9.3			15.8			14.5			13.1	
Confl. Peds. (#/hr)	1		6	6		1			3	3		
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.60	0.79	0.70	0.68	0.85	0.88	0.71	0.64	0.88	0.71	0.70	0.69
Heavy Vehicles (%)	0%	1%	0%	4%	1%	3%	3%	0%	0%	12%	0%	9%
Adj. Flow (vph)	22	213	93	44	176	44	48	111	26	27	61	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	328	0	0	264	0	0	185	0	0	105	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	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.01	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	13	168	65	30	150	39	34	71	23	19	43	12
Future Vol, veh/h	13	168	65	30	150	39	34	71	23	19	43	12
Conflicting Peds, #/hr	1	0	6	6	0	1	0	0	3	3	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	60	79	70	68	85	88	71	64	88	71	70	69
Heavy Vehicles, %	0	1	0	4	1	3	3	0	0	12	0	9
Mvmt Flow	22	213	93	44	176	44	48	111	26	27	61	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	221	0	0	312	0	0	635	619	269	662	643	199
Stage 1	-	-	-	-	-	-	310	310	-	287	287	-
Stage 2	-	-	-	-	-	-	325	309	-	375	356	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.13	6.5	6.2	7.22	6.5	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	6.22	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	6.22	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.527	4	3.3	3.608	4	3.381
Pot Cap-1 Maneuver	1360	-	-	1237	-	-	390	407	775	362	394	825
Stage 1	-	-	-	-	-	-	698	663	-	699	678	-
Stage 2	-	-	-	-	-	-	685	663	-	626	633	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1359	-	-	1228	-	-	316	379	768	258	367	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	316	379	-	258	367	-
Stage 1	-	-	-	-	-	-	679	645	-	684	650	-
Stage 2	-	-	-	-	-	-	582	635	-	490	616	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.3	22.5	19
HCM LOS			C	C

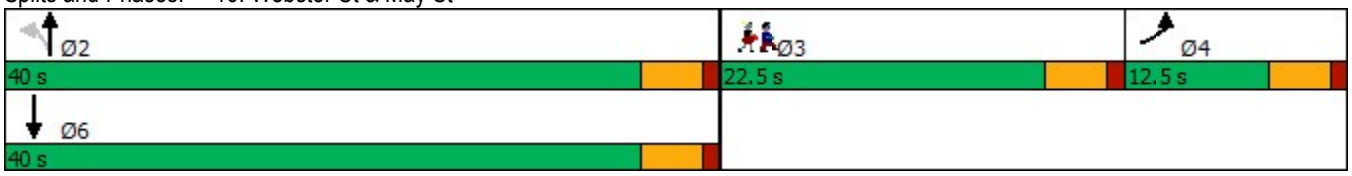
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	387	1359	-	-	1228	-	-	361
HCM Lane V/C Ratio	0.478	0.016	-	-	0.036	-	-	0.292
HCM Control Delay (s)	22.5	7.7	0	-	8	0	-	19
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	2.5	0	-	-	0.1	-	-	1.2

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	103	73	38	340	604	180	
Future Volume (vph)	103	73	38	340	605	180	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.98			1.00	0.99		
Frt	0.943				0.969		
Flt Protected	0.972			0.994			
Satd. Flow (prot)	1548	0	0	1700	1635	0	
Flt Permitted	0.972			0.736			
Satd. Flow (perm)	1523	0	0	1258	1635	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	39				27		
Link Speed (mph)	30			30	30		
Link Distance (ft)	756			591	599		
Travel Time (s)	17.2			13.4	13.6		
Confl. Peds. (#/hr)	6		5			5	
Peak Hour Factor	0.86	0.83	0.77	0.87	0.87	0.87	
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%	
Adj. Flow (vph)	120	88	49	391	695	207	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	208	0	0	440	902	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	1		1	2	2		
Detector Template	Left		Left	Thru	Thru		
Leading Detector (ft)	20		20	100	100		
Trailing Detector (ft)	0		0	0	0		
Detector 1 Position(ft)	0		0	0	0		
Detector 1 Size(ft)	20		20	6	6		
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		
Detector 2 Position(ft)				94	94		
Detector 2 Size(ft)				6	6		
Detector 2 Type				Cl+Ex	Cl+Ex		
Detector 2 Channel							
Detector 2 Extend (s)				0.0	0.0		
Turn Type	Prot		Perm	NA	NA		
Protected Phases	4			2	6		3
Permitted Phases			2				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Detector Phase	4		2	2	6		
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0		5.0
Minimum Split (s)	9.5		9.5	9.5	9.5		22.5
Total Split (s)	12.5		40.0	40.0	40.0		22.5
Total Split (%)	16.7%		53.3%	53.3%	53.3%		30%
Maximum Green (s)	8.0		35.5	35.5	35.5		18.0
Yellow Time (s)	3.5		3.5	3.5	3.5		3.5
All-Red Time (s)	1.0		1.0	1.0	1.0		1.0
Lost Time Adjust (s)	0.0			0.0	0.0		
Total Lost Time (s)	4.5			4.5	4.5		
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0
Recall Mode	None		Min	Min	Min		None
Walk Time (s)							7.0
Flash Dont Walk (s)							11.0
Pedestrian Calls (#/hr)							10
Act Effct Green (s)	8.2			40.6	40.6		
Actuated g/C Ratio	0.13			0.66	0.66		
v/c Ratio	0.87			0.53	0.83		
Control Delay	58.4			11.4	19.8		
Queue Delay	0.0			0.0	0.0		
Total Delay	58.4			11.4	19.8		
LOS	E			B	B		
Approach Delay	58.4			11.4	19.8		
Approach LOS	E			B	B		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 75			
Actuated Cycle Length: 61.6			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 22.6		Intersection LOS: C	
Intersection Capacity Utilization 73.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 16: Webster St & May St



Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	208	440	902
v/c Ratio	0.87	0.53	0.83
Control Delay	58.4	11.4	19.8
Queue Delay	0.0	0.0	0.0
Total Delay	58.4	11.4	19.8
Queue Length 50th (ft)	53	52	147
Queue Length 95th (ft)	#202	260	#680
Internal Link Dist (ft)	676	511	519
Turn Bay Length (ft)			
Base Capacity (vph)	238	828	1086
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.87	0.53	0.83

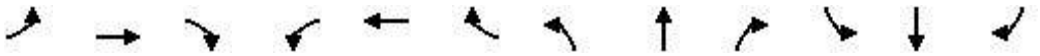
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	103	73	38	340	604	180
Future Volume (vph)	103	73	38	340	605	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.99	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	0.94			1.00	0.97	
Flt Protected	0.97			0.99	1.00	
Satd. Flow (prot)	1547			1700	1635	
Flt Permitted	0.97			0.74	1.00	
Satd. Flow (perm)	1547			1258	1635	
Peak-hour factor, PHF	0.86	0.83	0.77	0.87	0.87	0.87
Adj. Flow (vph)	120	88	49	391	695	207
RTOR Reduction (vph)	34	0	0	0	10	0
Lane Group Flow (vph)	174	0	0	440	892	0
Confl. Peds. (#/hr)	6		5			5
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.1			40.6	40.6	
Effective Green, g (s)	8.1			40.6	40.6	
Actuated g/C Ratio	0.12			0.62	0.62	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	192			783	1018	
v/s Ratio Prot	c0.11				c0.55	
v/s Ratio Perm				0.35		
v/c Ratio	0.91			0.56	0.88	
Uniform Delay, d1	28.2			7.1	10.2	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	39.2			0.9	8.6	
Delay (s)	67.4			8.1	18.8	
Level of Service	E			A	B	
Approach Delay (s)	67.4			8.1	18.8	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Future Volume (vph)	91	178	29	17	181	251	45	465	21	156	516	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	10	10	12	10	10	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00			1.00	0.98	1.00				1.00	
Frt		0.981				0.850		0.992			0.989	
Flt Protected		0.984			0.996		0.950			0.950		
Satd. Flow (prot)	0	3087	0	0	1676	1507	1636	1739	0	3268	1732	0
Flt Permitted		0.630			0.948		0.343			0.135		
Satd. Flow (perm)	0	1976	0	0	1595	1474	590	1739	0	464	1732	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								3				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			193			991			1083	
Travel Time (s)		8.6			4.4			22.5			24.6	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.80	0.93	0.66	0.91	0.73	0.53	0.67	0.66	0.52	0.47	0.81	0.91
Heavy Vehicles (%)	4%	4%	12%	10%	5%	0%	3%	1%	4%	0%	1%	2%
Adj. Flow (vph)	114	191	44	19	248	474	67	705	40	332	637	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	349	0	0	267	474	67	745	0	332	689	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			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.09	1.09	1.09	1.09	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phase	4	4		8	8	5	6	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	10.0	10.0		6.0	10.0	
Minimum Split (s)	12.5	12.5		12.5	12.5	10.0	17.5	17.5		10.0	17.5	
Total Split (s)	26.0	26.0		26.0	26.0	11.0	55.0	55.0		11.0	66.0	
Total Split (%)	21.7%	21.7%		21.7%	21.7%	9.2%	45.8%	45.8%		9.2%	55.0%	
Maximum Green (s)	19.5	19.5		19.5	19.5	7.0	47.5	47.5		7.0	58.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	0.0	3.5	3.5		0.0	3.5	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		19.7			19.7	29.3	48.0	48.0		62.7	59.2	
Actuated g/C Ratio		0.20			0.20	0.30	0.49	0.49		0.64	0.61	
v/c Ratio		0.91dl			0.83	1.07	0.23	0.87		0.66	0.66	
Control Delay		62.3			60.8	93.2	20.0	36.0		17.1	18.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		62.3			60.8	93.2	20.0	36.0		17.1	18.7	
LOS		E			E	F	C	D		B	B	
Approach Delay		62.3			81.6			34.7			18.2	
Approach LOS		E			F			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 97.6			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 44.1		Intersection LOS: D	
Intersection Capacity Utilization 80.1%		ICU Level of Service D	
Analysis Period (min) 15			
dl Defacto Left Lane. Recode with 1 though lane as a left lane.			

Splits and Phases: 1: Highland Ave & Webster St

Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

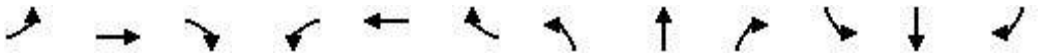
Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	349	267	474	67	745	332	689
v/c Ratio	0.91dl	0.83	1.07	0.23	0.87	0.66	0.66
Control Delay	62.3	60.8	93.2	20.0	36.0	17.1	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	60.8	93.2	20.0	36.0	17.1	18.7
Queue Length 50th (ft)	103	148	~261	20	347	31	219
Queue Length 95th (ft)	#258	#278	261	52	482	46	510
Internal Link Dist (ft)	299	113			911		1003
Turn Bay Length (ft)				60			
Base Capacity (vph)	399	322	445	290	857	501	1050
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.83	1.07	0.23	0.87	0.66	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Future Volume (vph)	91	178	29	17	181	251	45	465	21	156	516	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	12	10	10	10	10	12	10	10	12
Total Lost time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Lane Util. Factor		0.95			1.00	1.00	1.00	1.00		0.97	1.00	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.98			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3086			1677	1483	1634	1739		3268	1732	
Flt Permitted		0.63			0.95	1.00	0.34	1.00		0.13	1.00	
Satd. Flow (perm)		1976			1596	1483	590	1739		464	1732	
Peak-hour factor, PHF	0.80	0.93	0.66	0.91	0.73	0.53	0.67	0.66	0.52	0.47	0.81	0.91
Adj. Flow (vph)	114	191	44	19	248	474	67	705	40	332	637	52
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	349	0	0	267	474	67	743	0	332	689	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	4%	12%	10%	5%	0%	3%	1%	4%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		19.7			19.7	26.8	48.1	48.1		59.2	59.2	
Effective Green, g (s)		19.7			19.7	26.8	48.1	48.1		59.2	59.2	
Actuated g/C Ratio		0.20			0.20	0.27	0.48	0.48		0.59	0.59	
Clearance Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		386			311	394	281	829		470	1017	
v/s Ratio Prot						c0.08		c0.43		0.05	0.40	
v/s Ratio Perm		0.18			0.17	0.23	0.11			0.36		
v/c Ratio		0.91dl			0.86	1.20	0.24	0.90		0.71	0.68	
Uniform Delay, d1		39.6			39.2	37.0	15.5	24.1		17.1	14.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		23.4			19.6	113.2	0.2	12.0		3.9	1.4	
Delay (s)		63.0			58.8	150.2	15.7	36.1		21.0	15.7	
Level of Service		E			E	F	B	D		C	B	
Approach Delay (s)		63.0			117.3			34.4			17.4	
Approach LOS		E			F			C			B	

Intersection Summary			
HCM 2000 Control Delay	52.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	100.8	Sum of lost time (s)	22.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

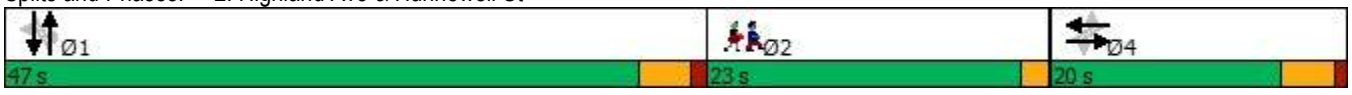
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	73	72	4	54	18	117	426	14	10	477	65
Future Volume (vph)	40	73	82	4	54	18	119	451	14	10	484	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	11	12	12	13	12	12	13	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						1.00				
Frt		0.948			0.950			0.992			0.982	
Flt Protected		0.989			0.997		0.950				0.999	
Satd. Flow (prot)	0	1589	0	0	1531	0	1562	1665	0	0	1670	0
Flt Permitted		0.908			0.976		0.343				0.987	
Satd. Flow (perm)	0	1459	0	0	1499	0	564	1665	0	0	1650	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			29			4			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		695			444			621			443	
Travel Time (s)		15.8			10.1			14.1			10.1	
Confl. Peds. (#/hr)	1								1			
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.60	0.65	0.73	0.50	0.80	0.40	0.69	0.80	0.46	0.75	0.90	0.81
Heavy Vehicles (%)	0%	5%	6%	0%	4%	0%	4%	5%	8%	0%	4%	3%
Adj. Flow (vph)	67	112	112	8	68	45	172	564	30	13	538	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	291	0	0	121	0	172	594	0	0	636	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.19	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			1			1	
Permitted Phases	4			4			1			1		
Detector Phase	4	4		4	4		1	1		1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	9.5		9.5	9.5		9.5	9.5		9.5	9.5	
Total Split (s)	20.0	20.0		20.0	20.0		47.0	47.0		47.0	47.0	
Total Split (%)	22.2%	22.2%		22.2%	22.2%		52.2%	52.2%		52.2%	52.2%	
Maximum Green (s)	15.5	15.5		15.5	15.5		42.5	42.5		42.5	42.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5			4.5	
Lead/Lag							Lead	Lead		Lead	Lead	
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	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		16.8			16.8		33.6	33.6			33.6	
Actuated g/C Ratio		0.25			0.25		0.50	0.50			0.50	
v/c Ratio		0.75			0.30		0.61	0.71			0.76	
Control Delay		41.7			24.8		26.4	20.5			22.7	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		41.7			24.8		26.4	20.5			22.7	
LOS		D			C		C	C			C	
Approach Delay		41.7			24.8			21.8			22.7	
Approach LOS		D			C			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 67			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 25.5		Intersection LOS: C	
Intersection Capacity Utilization 88.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Highland Ave & Hunnewell St



Lane Group	Ø2
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	21.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	291	121	172	594	636
v/c Ratio	0.75	0.30	0.61	0.71	0.76
Control Delay	41.7	24.8	26.4	20.5	22.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	24.8	26.4	20.5	22.7
Queue Length 50th (ft)	81	25	32	118	130
Queue Length 95th (ft)	#184	85	99	328	#493
Internal Link Dist (ft)	615	364		541	363
Turn Bay Length (ft)			60		
Base Capacity (vph)	387	397	387	1144	1136
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.75	0.30	0.44	0.52	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	73	72	4	54	18	117	426	14	10	477	65
Future Volume (vph)	40	73	82	4	54	18	119	451	14	10	484	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	11	12	12	13	12	12	13	12
Total Lost time (s)		4.5			4.5		4.5	4.5			4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Frt		0.95			0.95		1.00	0.99			0.98	
Flt Protected		0.99			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1588			1530		1562	1666			1670	
Flt Permitted		0.91			0.98		0.34	1.00			0.99	
Satd. Flow (perm)		1459			1498		564	1666			1650	
Peak-hour factor, PHF	0.60	0.65	0.73	0.50	0.80	0.40	0.69	0.80	0.46	0.75	0.90	0.81
Adj. Flow (vph)	67	112	112	8	68	45	172	564	30	13	538	85
RTOR Reduction (vph)	0	23	0	0	22	0	0	2	0	0	6	0
Lane Group Flow (vph)	0	268	0	0	99	0	172	592	0	0	630	0
Confl. Peds. (#/hr)	1								1			
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	5%	6%	0%	4%	0%	4%	5%	8%	0%	4%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			1			1	
Permitted Phases	4			4			1			1		
Actuated Green, G (s)		16.8			16.8		33.6	33.6			33.6	
Effective Green, g (s)		16.8			16.8		33.6	33.6			33.6	
Actuated g/C Ratio		0.25			0.25		0.50	0.50			0.50	
Clearance Time (s)		4.5			4.5		4.5	4.5			4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		362			371		279	826			818	
v/s Ratio Prot								0.36				
v/s Ratio Perm		c0.18			0.07		0.30				c0.38	
v/c Ratio		0.74			0.27		0.62	0.72			0.77	
Uniform Delay, d1		23.4			20.5		12.4	13.3			13.9	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		8.0			0.4		4.0	3.0			4.5	
Delay (s)		31.4			20.9		16.4	16.3			18.4	
Level of Service		C			C		B	B			B	
Approach Delay (s)		31.4			20.9			16.3			18.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	11.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

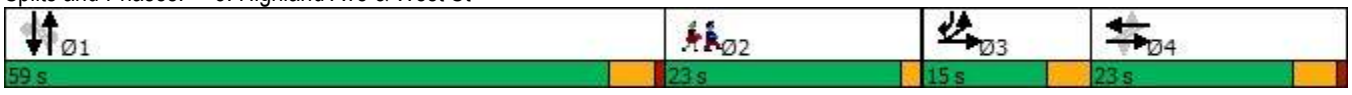
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Future Volume (vph)	186	224	31	19	141	41	20	405	32	17	345	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	9	10	12	12	13	12	12	13	12
Storage Length (ft)	0		0	150		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.99	0.99			0.99			1.00	0.98
Frt		0.974			0.968			0.990				0.850
Flt Protected	0.950			0.950				0.998			0.997	
Satd. Flow (prot)	1462	1479	0	1037	1467	0	0	1659	0	0	1683	1384
Flt Permitted	0.396			0.577				0.965			0.947	
Satd. Flow (perm)	608	1479	0	621	1467	0	0	1604	0	0	1597	1350
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		455			303			836			621	
Travel Time (s)		10.3			6.9			19.0			14.1	
Confl. Peds. (#/hr)	2		6	6		2	5		46	46		5
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.89	0.90	0.61	0.53	0.78	0.82	0.64	0.74	0.72	0.63	0.87	0.69
Heavy Vehicles (%)	0%	1%	0%	41%	6%	0%	6%	5%	0%	0%	5%	5%
Adj. Flow (vph)	209	249	51	36	181	50	31	547	44	27	397	275
Shared Lane Traffic (%)												
Lane Group Flow (vph)	209	300	0	36	231	0	0	622	0	0	424	275
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)		9			9			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.14	1.30	1.25	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	3 4			4			1			1	3
Permitted Phases	4			4			1			1		1
Detector Phase	3	3 4		4	4		1	1		1	1	3
Switch Phase												
Minimum Initial (s)	6.0			6.0	6.0		10.0	10.0		10.0	10.0	6.0
Minimum Split (s)	10.0			11.0	11.0		15.0	15.0		15.0	15.0	10.0
Total Split (s)	15.0			23.0	23.0		59.0	59.0		59.0	59.0	15.0
Total Split (%)	12.5%			19.2%	19.2%		49.2%	49.2%		49.2%	49.2%	12.5%
Maximum Green (s)	11.0			18.0	18.0		54.0	54.0		54.0	54.0	11.0
Yellow Time (s)	4.0			4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0			1.0	1.0		1.0	1.0		1.0	1.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0			5.0	5.0			5.0			5.0	4.0
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			4.0	4.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	31.8	36.1		19.1	19.1			42.8			42.8	55.6
Actuated g/C Ratio	0.32	0.36		0.19	0.19			0.43			0.43	0.56
v/c Ratio	0.71	0.56		0.30	0.82			0.90			0.61	0.36
Control Delay	47.0	36.5		51.3	67.5			44.1			26.8	8.5
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	47.0	36.5		51.3	67.5			44.1			26.8	8.5
LOS	D	D		D	E			D			C	A
Approach Delay		40.8			65.3			44.1			19.6	
Approach LOS		D			E			D			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 99.1			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 37.8		Intersection LOS: D	
Intersection Capacity Utilization 76.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Highland Ave & West St



Lane Group	Ø2
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	23.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	29
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

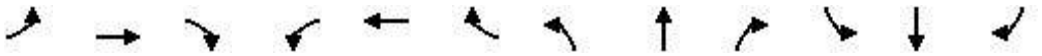
Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	209	300	36	231	622	424	275
v/c Ratio	0.71	0.56	0.30	0.82	0.90	0.61	0.36
Control Delay	47.0	36.5	51.3	67.5	44.1	26.8	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.0	36.5	51.3	67.5	44.1	26.8	8.5
Queue Length 50th (ft)	129	199	24	~178	409	232	50
Queue Length 95th (ft)	#215	308	34	#279	416	321	54
Internal Link Dist (ft)		375		223	756	541	
Turn Bay Length (ft)			150				50
Base Capacity (vph)	295	538	119	282	927	922	761
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.56	0.30	0.82	0.67	0.46	0.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Future Volume (vph)	186	224	31	19	141	41	20	405	32	17	345	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	12	9	10	12	12	13	12	12	13	12
Total Lost time (s)	4.0	4.0		5.0	5.0			5.0			5.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.99			1.00	0.98
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.97			0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1461	1480		1026	1467			1659			1681	1358
Flt Permitted	0.40	1.00		0.58	1.00			0.96			0.95	1.00
Satd. Flow (perm)	609	1480		623	1467			1604			1596	1358
Peak-hour factor, PHF	0.89	0.90	0.61	0.53	0.78	0.82	0.64	0.74	0.72	0.63	0.87	0.69
Adj. Flow (vph)	209	249	51	36	181	50	31	547	44	27	397	275
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	209	300	0	36	231	0	0	622	0	0	424	275
Confl. Peds. (#/hr)	2		6	6		2	5		46	46		5
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	1%	0%	41%	6%	0%	6%	5%	0%	0%	5%	5%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	3 4			4			1			1	3
Permitted Phases	4			4			1			1		1
Actuated Green, G (s)	30.8	34.8		19.1	19.1			42.8			42.8	54.5
Effective Green, g (s)	30.8	34.8		19.1	19.1			42.8			42.8	54.5
Actuated g/C Ratio	0.31	0.35		0.19	0.19			0.43			0.43	0.55
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	4.0
Vehicle Extension (s)	2.0			4.0	4.0			2.0			2.0	2.0
Lane Grp Cap (vph)	289	519		119	282			692			688	746
v/s Ratio Prot	c0.09	0.20			c0.16							0.04
v/s Ratio Perm	0.14			0.06				c0.39			0.27	0.16
v/c Ratio	0.72	0.58		0.30	0.82			0.90			0.62	0.37
Uniform Delay, d1	27.8	26.2		34.3	38.4			26.2			21.8	12.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	7.4	1.0		2.0	17.5			14.1			1.2	0.1
Delay (s)	35.2	27.2		36.3	55.9			40.3			23.0	12.7
Level of Service	D	C		D	E			D			C	B
Approach Delay (s)		30.5			53.2			40.3			19.0	
Approach LOS		C			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	99.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

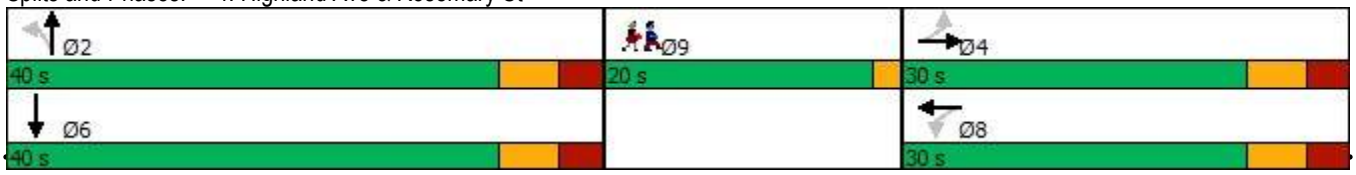
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Future Volume (vph)	21	0	180	54	59	20	114	459	0	0	372	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	9	11	9	12	11	13	12	12	16	12
Storage Length (ft)	0		25	50		0	60		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.90		0.95	0.99		0.99				1.00	
Frt		0.879			0.965						0.989	
Flt Protected		0.995		0.950			0.950					
Satd. Flow (prot)	0	1205	0	1570	1440	0	1540	1683	0	0	1832	0
Flt Permitted		0.945		0.398			0.354					
Satd. Flow (perm)	0	1143	0	627	1440	0	570	1683	0	0	1832	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		265			17							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1036			474			1055			1271	
Travel Time (s)		23.5			10.8			24.0			28.9	
Confl. Peds. (#/hr)	8		46	46		8	12		17	17		12
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.68	0.92	0.68	0.60	0.59	0.64	0.75	0.83	0.92	0.92	0.79	0.72
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%	2%	5%	0%	0%	4%	8%
Adj. Flow (vph)	31	0	265	90	100	31	152	553	0	0	471	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	296	0	90	131	0	152	553	0	0	513	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)		11			11			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.30	1.19	1.30	1.14	1.19	1.10	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2			2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	20	100		20	100		20	100			100	
Trailing Detector (ft)	0	0		0	0		0	0			0	
Detector 1 Position(ft)	0	0		0	0		0	0			0	
Detector 1 Size(ft)	20	6		20	6		20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0			12.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0			40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%			44.4%	
Maximum Green (s)	23.0	23.0		23.0	23.0		33.0	33.0			33.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		Max	Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.4		14.4	14.4		34.7	34.7			34.7	
Actuated g/C Ratio		0.19		0.19	0.19		0.47	0.47			0.47	
v/c Ratio		0.68		0.74	0.45		0.57	0.70			0.60	
Control Delay		14.4		64.6	29.4		32.5	27.1			23.1	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		14.4		64.6	29.4		32.5	27.1			23.1	
LOS		B		E	C		C	C			C	
Approach Delay		14.4			43.7			28.3			23.1	
Approach LOS		B			D			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 74			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 26.3		Intersection LOS: C	
Intersection Capacity Utilization 70.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Highland Ave & Rosemary St



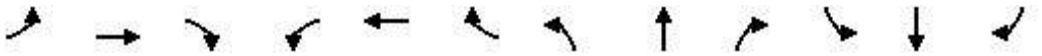
Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	41
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	296	90	131	152	553	513
v/c Ratio	0.68	0.74	0.45	0.57	0.70	0.60
Control Delay	14.4	64.6	29.4	32.5	27.1	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	64.6	29.4	32.5	27.1	23.1
Queue Length 50th (ft)	14	45	52	63	250	216
Queue Length 95th (ft)	93	58	61	#119	#422	310
Internal Link Dist (ft)	956		394		975	1191
Turn Bay Length (ft)		50		60		
Base Capacity (vph)	551	204	481	267	788	858
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.44	0.27	0.57	0.70	0.60

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Future Volume (vph)	21	0	180	54	59	20	114	459	0	0	372	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	9	11	9	12	11	13	12	12	16	12
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		0.88		1.00	0.99		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		0.94	1.00		0.99	1.00			1.00	
Frt		0.88		1.00	0.96		1.00	1.00			0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1169		1484	1437		1531	1683			1832	
Flt Permitted		0.94		0.40	1.00		0.35	1.00			1.00	
Satd. Flow (perm)		1110		621	1437		571	1683			1832	
Peak-hour factor, PHF	0.68	0.92	0.68	0.60	0.59	0.64	0.75	0.83	0.92	0.92	0.79	0.72
Adj. Flow (vph)	31	0	265	90	100	31	152	553	0	0	471	42
RTOR Reduction (vph)	0	214	0	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	82	0	90	117	0	152	553	0	0	513	0
Confl. Peds. (#/hr)	8		46	46		8	12		17	17		12
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%	2%	5%	0%	0%	4%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		14.4		14.4	14.4		34.7	34.7			34.7	
Effective Green, g (s)		14.4		14.4	14.4		34.7	34.7			34.7	
Actuated g/C Ratio		0.19		0.19	0.19		0.47	0.47			0.47	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		215		120	278		266	786			855	
v/s Ratio Prot					0.08			c0.33			0.28	
v/s Ratio Perm		0.07		c0.14			0.27					
v/c Ratio		0.38		0.75	0.42		0.57	0.70			0.60	
Uniform Delay, d1		26.1		28.3	26.3		14.4	15.7			14.7	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.1		22.8	1.0		8.6	5.2			3.1	
Delay (s)		27.2		51.1	27.3		23.0	20.9			17.8	
Level of Service		C		D	C		C	C			B	
Approach Delay (s)		27.2			37.0			21.4			17.8	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	74.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

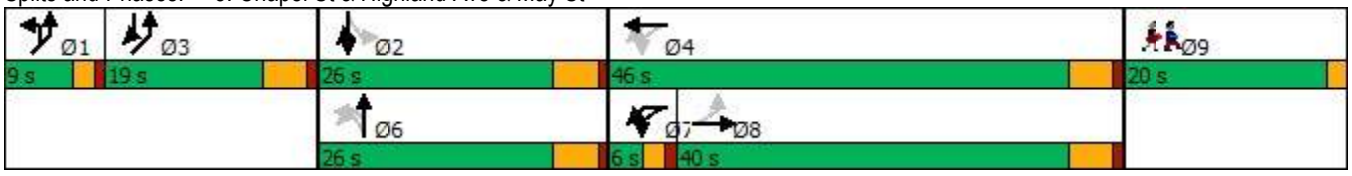
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Future Volume (vph)	86	135	36	13	31	39	165	53	2	10	174	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12	10	12	12	12	16	12
Storage Length (ft)	0		0			0		0		0		0
Storage Lanes	0		0			0		0		0		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					0.99				1.00	
Frt		0.978					0.974				0.984	
Flt Protected		0.985					0.987				0.997	
Satd. Flow (prot)	0	1666	0	0	0	0	1493	0	0	0	1823	0
Flt Permitted		0.687					0.749				0.969	
Satd. Flow (perm)	0	1161	0	0	0	0	1133	0	0	0	1771	0
Right Turn on Red				No				Yes				No
Satd. Flow (RTOR)							11					
Link Speed (mph)		30					30				30	
Link Distance (ft)		453					923				945	
Travel Time (s)		10.3					21.0				21.5	
Confl. Peds. (#/hr)	7							7		3		2
Peak Hour Factor	0.72	0.62	0.92	0.50	0.64	0.55	0.65	0.60	0.50	0.56	0.64	0.50
Heavy Vehicles (%)	0%	3%	0%	8%	0%	0%	4%	0%	0%	0%	4%	6%
Adj. Flow (vph)	119	218	39	26	48	71	254	88	4	18	272	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	402	0	0	0	0	461	0	0	0	334	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Left	Left	Right
Median Width(ft)		0					0				0	
Link Offset(ft)		0					0				0	
Crosswalk Width(ft)		16					16				16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2		1	1	2	
Detector Template	Left	Thru			Left	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100		20	20	100	
Trailing Detector (ft)	0	0			0	0	0		0	0	0	
Detector 1 Position(ft)	0	0			0	0	0		0	0	0	
Detector 1 Size(ft)	20	6			20	20	6		20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	
Detector 2 Channel												

Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Lane Configurations										
Traffic Volume (vph)	15	129	189	89	11	268	39	9		
Future Volume (vph)	15	133	205	89	11	279	39	9		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	10	11	12	10	11	11	11		
Storage Length (ft)	0		120			0	60			
Storage Lanes	0		1			2	0			
Taper Length (ft)	25					25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00				0.99				
Frt			0.850			0.971				
Flt Protected		0.994			0.950	0.961				
Satd. Flow (prot)	0	1534	1351	0	1516	1446	0	0		
Flt Permitted		0.829			0.950	0.961				
Satd. Flow (perm)	0	1279	1351	0	1516	1433	0	0		
Right Turn on Red				No				Yes		
Satd. Flow (RTOR)						109				
Link Speed (mph)		30				30				
Link Distance (ft)		644				580				
Travel Time (s)		14.6				13.2				
Confl. Peds. (#/hr)	2			3		7	2			
Peak Hour Factor	0.70	0.79	0.91	0.81	0.63	0.91	0.63	0.67		
Heavy Vehicles (%)	7%	3%	6%	0%	0%	7%	3%	0%		
Adj. Flow (vph)	21	168	225	110	17	307	62	13		
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	189	335	0	17	382	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Right	Left	Left	Right	Right		
Median Width(ft)		0				21				
Link Offset(ft)		0				0				
Crosswalk Width(ft)		16				16				
Two way Left Turn Lane										
Headway Factor	1.14	1.25	1.19	1.14	1.25	1.19	1.19	1.19		
Turning Speed (mph)	15		9	9	15	15	9	9		
Number of Detectors	1	2	1		1	1				
Detector Template	Left	Thru	Right		Left	Left				
Leading Detector (ft)	20	100	20		20	20				
Trailing Detector (ft)	0	0	0		0	0				
Detector 1 Position(ft)	0	0	0		0	0				
Detector 1 Size(ft)	20	6	20		20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)		94								
Detector 2 Size(ft)		6								
Detector 2 Type		Cl+Ex								
Detector 2 Channel										

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Detector Phase	8	8			7	7	4		6	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0			2.0	2.0	6.0		6.0	6.0	6.0	
Minimum Split (s)	11.0	11.0			6.0	6.0	11.0		11.0	11.0	11.0	
Total Split (s)	40.0	40.0			6.0	6.0	46.0		26.0	26.0	26.0	
Total Split (%)	33.3%	33.3%			5.0%	5.0%	38.3%		21.7%	21.7%	21.7%	
Maximum Green (s)	35.0	35.0			3.0	3.0	41.0		21.0	21.0	21.0	
Yellow Time (s)	4.0	4.0			2.0	2.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0				0.0	
Total Lost Time (s)		5.0					5.0				5.0	
Lead/Lag	Lag	Lag			Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None			None	None	None		Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		41.2					41.2				21.1	
Actuated g/C Ratio		0.40					0.40				0.20	
v/c Ratio		0.87					1.01				0.93	
Control Delay		51.3					77.5				75.3	
Queue Delay		0.0					0.0				0.0	
Total Delay		51.3					77.5				75.3	
LOS		D					E				E	
Approach Delay		51.3					77.5				75.3	
Approach LOS		D					E				E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 104			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 58.6		Intersection LOS: E	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Chapel St & Highland Ave & May St



Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Detector 2 Extend (s)		0.0								
Turn Type	Perm	NA	custom		Prot	Prot				
Protected Phases		2	2 3		1	1 3			3	9
Permitted Phases	2									
Detector Phase	2	2	2 3		1	1 3				
Switch Phase										
Minimum Initial (s)	6.0	6.0			1.0				4.0	5.0
Minimum Split (s)	11.0	11.0			6.0				9.0	20.0
Total Split (s)	26.0	26.0			9.0				19.0	20.0
Total Split (%)	21.7%	21.7%			7.5%				16%	17%
Maximum Green (s)	21.0	21.0			6.0				14.0	18.0
Yellow Time (s)	4.0	4.0			2.0				4.0	2.0
All-Red Time (s)	1.0	1.0			1.0				1.0	0.0
Lost Time Adjust (s)		0.0			0.0					
Total Lost Time (s)		5.0			3.0					
Lead/Lag					Lead				Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0
Recall Mode	Min	Min			None				None	None
Walk Time (s)										7.0
Flash Dont Walk (s)										11.0
Pedestrian Calls (#/hr)										12
Act Effct Green (s)		21.1	40.2		6.0	25.1				
Actuated g/C Ratio		0.20	0.39		0.06	0.24				
v/c Ratio		0.73	0.64		0.20	0.88				
Control Delay		57.6	34.3		55.0	50.9				
Queue Delay		0.0	0.0		0.0	0.0				
Total Delay		57.6	34.3		55.0	50.9				
LOS		E	C		D	D				
Approach Delay		42.7				51.1				
Approach LOS		D				D				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR	NEL2	NEL
Lane Group Flow (vph)	402	461	334	189	335	17	382
v/c Ratio	0.87	1.01	0.93	0.73	0.64	0.20	0.88
Control Delay	51.3	77.5	75.3	57.6	34.3	55.0	50.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	77.5	75.3	57.6	34.3	55.0	50.9
Queue Length 50th (ft)	227	279	209	112	167	11	172
Queue Length 95th (ft)	266	#362	#264	#218	347	26	#428
Internal Link Dist (ft)	373	843	865	564			500
Turn Bay Length (ft)					120		
Base Capacity (vph)	460	456	359	259	522	87	432
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	1.01	0.93	0.73	0.64	0.20	0.88

Intersection Summary

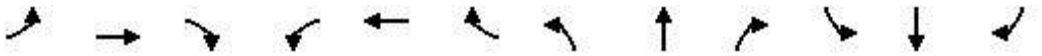
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Future Volume (vph)	86	135	36	13	31	39	165	53	2	10	174	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12	10	12	12	12	16	12
Total Lost time (s)		5.0					5.0				5.0	
Lane Util. Factor		1.00					1.00				1.00	
Frpb, ped/bikes		1.00					0.99				1.00	
Flpb, ped/bikes		1.00					1.00				1.00	
Frt		0.98					0.97				0.98	
Flt Protected		0.99					0.99				1.00	
Satd. Flow (prot)		1666					1494				1822	
Flt Permitted		0.69					0.75				0.97	
Satd. Flow (perm)		1160					1133				1772	
Peak-hour factor, PHF	0.72	0.62	0.92	0.50	0.64	0.55	0.65	0.60	0.50	0.56	0.64	0.50
Adj. Flow (vph)	119	218	39	26	48	71	254	88	4	18	272	40
RTOR Reduction (vph)	0	0	0	0	0	0	7	0	0	0	0	0
Lane Group Flow (vph)	0	402	0	0	0	0	454	0	0	0	334	0
Confl. Peds. (#/hr)	7							7		3		2
Heavy Vehicles (%)	0%	3%	0%	8%	0%	0%	4%	0%	0%	0%	4%	6%
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Actuated Green, G (s)		41.2					41.2				21.1	
Effective Green, g (s)		41.2					41.2				21.1	
Actuated g/C Ratio		0.39					0.39				0.20	
Clearance Time (s)		5.0					5.0				5.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		453					442				354	
v/s Ratio Prot												
v/s Ratio Perm		0.35					c0.40				c0.19	
v/c Ratio		0.89					1.03				0.94	
Uniform Delay, d1		30.0					32.1				41.6	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		18.5					50.1				33.3	
Delay (s)		48.5					82.3				74.9	
Level of Service		D					F				E	
Approach Delay (s)		48.5					82.3				74.9	
Approach LOS		D					F				E	

Intersection Summary			
HCM 2000 Control Delay	62.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	105.5	Sum of lost time (s)	23.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	15	129	189	89	11	268	39	9
Future Volume (vph)	15	133	205	89	11	279	39	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	10	11	11	11
Total Lost time (s)		5.0	5.0		3.0	3.0		
Lane Util. Factor		1.00	1.00		1.00	1.00		
Frpb, ped/bikes		1.00	1.00		1.00	1.00		
Flpb, ped/bikes		1.00	1.00		1.00	1.00		
Frt		1.00	0.85		1.00	0.97		
Flt Protected		0.99	1.00		0.95	0.96		
Satd. Flow (prot)		1534	1351		1516	1447		
Flt Permitted		0.83	1.00		0.95	0.96		
Satd. Flow (perm)		1279	1351		1516	1447		
Peak-hour factor, PHF	0.70	0.79	0.91	0.81	0.63	0.91	0.63	0.67
Adj. Flow (vph)	21	168	225	110	17	307	62	13
RTOR Reduction (vph)	0	0	0	0	0	85	0	0
Lane Group Flow (vph)	0	189	335	0	17	297	0	0
Confl. Peds. (#/hr)	2			3		7	2	
Heavy Vehicles (%)	7%	3%	6%	0%	0%	7%	3%	0%
Turn Type	Perm	NA	custom		Prot	Prot		
Protected Phases		2	2 3		1	1 3		
Permitted Phases	2							
Actuated Green, G (s)		21.1	40.2		6.0	23.1		
Effective Green, g (s)		21.1	40.2		6.0	23.1		
Actuated g/C Ratio		0.20	0.38		0.06	0.22		
Clearance Time (s)		5.0			3.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		255	514		86	316		
v/s Ratio Prot			0.25		0.01	c0.21		
v/s Ratio Perm		0.15						
v/c Ratio		0.74	0.65		0.20	0.94		
Uniform Delay, d1		39.6	26.9		47.5	40.5		
Progression Factor		1.00	1.00		1.00	1.00		
Incremental Delay, d2		11.0	3.0		1.1	34.6		
Delay (s)		50.6	29.8		48.6	75.1		
Level of Service		D	C		D	E		
Approach Delay (s)		37.3				74.0		
Approach LOS		D				E		

Intersection Summary



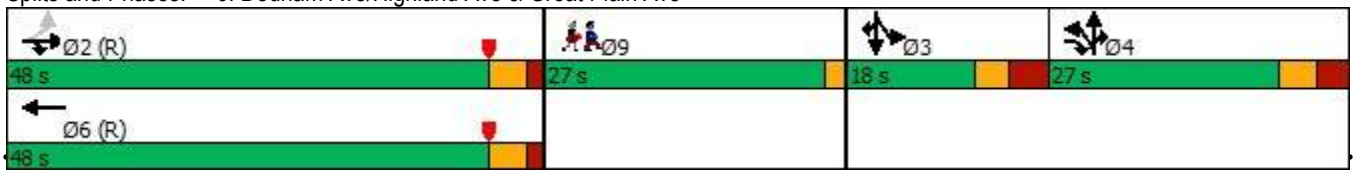
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Future Volume (vph)	55	271	272	0	329	73	263	163	24	30	90	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	10	10	10	10	10	10	10	10	12
Storage Length (ft)	0		0	0		0	0		35	0		90
Storage Lanes	0		1	0		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt			0.850		0.966				0.850			0.850
Flt Protected		0.992					0.950				0.987	
Satd. Flow (prot)	0	1557	1338	0	2783	0	1458	1565	1292	0	1499	1358
Flt Permitted		0.772					0.950				0.987	
Satd. Flow (perm)	0	1210	1338	0	2783	0	1456	1565	1292	0	1496	1358
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									95			95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		238			434			312			945	
Travel Time (s)		5.4			9.9			7.1			21.5	
Confl. Peds. (#/hr)	11		4	4		11	1		2	2		1
Peak Hour Factor	0.68	0.62	0.77	0.92	0.92	0.71	0.87	0.81	0.69	0.65	0.73	0.52
Heavy Vehicles (%)	0%	2%	5%	0%	4%	6%	4%	2%	5%	0%	7%	7%
Adj. Flow (vph)	81	437	353	0	358	103	302	201	35	46	123	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	518	353	0	461	0	302	201	35	0	169	60
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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1		2		1	2	1	1	2	1
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20		100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20		6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Detector Phase	2	2	2 4		6		4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0			10.0		11.5	11.5	11.5	11.5	11.5	11.5
Total Split (s)	48.0	48.0			48.0		27.0	27.0	27.0	18.0	18.0	18.0
Total Split (%)	40.0%	40.0%			40.0%		22.5%	22.5%	22.5%	15.0%	15.0%	15.0%
Maximum Green (s)	43.0	43.0			43.0		20.5	20.5	20.5	11.5	11.5	11.5
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5			1.5		3.0	3.0	3.0	3.5	3.5	3.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Lead/Lag							Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Min	C-Min			C-Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		43.0	78.8		43.0		29.3	29.3	29.3		18.9	18.9
Actuated g/C Ratio		0.36	0.66		0.36		0.24	0.24	0.24		0.16	0.16
v/c Ratio		1.20	0.40		0.46		0.85	0.53	0.09		0.72	0.20
Control Delay		134.4	11.3		31.5		66.7	47.4	0.5		67.4	4.7
Queue Delay		0.8	3.6		0.8		3.9	0.0	0.0		0.0	0.1
Total Delay		135.2	14.9		32.2		70.6	47.4	0.5		67.4	4.8
LOS		F	B		C		E	D	A		E	A
Approach Delay		86.4			32.2			57.3			51.0	
Approach LOS		F			C			E			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 63.2		Intersection LOS: E	
Intersection Capacity Utilization 74.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Dedham Ave/Highland Ave & Great Plain Ave



Lane Group	Ø9
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	518	353	461	302	201	35	169	60
v/c Ratio	1.20	0.40	0.46	0.85	0.53	0.09	0.72	0.20
Control Delay	134.4	11.3	31.5	66.7	47.4	0.5	67.4	4.7
Queue Delay	0.8	3.6	0.8	3.9	0.0	0.0	0.0	0.1
Total Delay	135.2	14.9	32.2	70.6	47.4	0.5	67.4	4.8
Queue Length 50th (ft)	~490	47	143	205	124	0	121	0
Queue Length 95th (ft)	#366	148	193	#442	208	0	#221	0
Internal Link Dist (ft)	158		354		232		865	
Turn Bay Length (ft)						35		90
Base Capacity (vph)	433	878	997	355	381	387	236	294
Starvation Cap Reductn	34	425	0	0	0	0	0	0
Spillback Cap Reductn	0	0	260	20	0	0	0	15
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.30	0.78	0.63	0.90	0.53	0.09	0.72	0.22

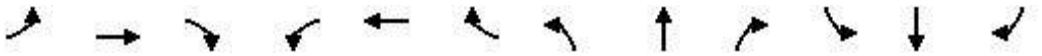
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Future Volume (vph)	55	271	272	0	329	73	263	163	24	30	90	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	11	10	10	10	10	10	10	10	10	12
Total Lost time (s)		5.0	5.0		5.0		6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00		1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)		1555	1338		2784		1458	1565	1292		1498	1358
Flt Permitted		0.77	1.00		1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)		1211	1338		2784		1458	1565	1292		1498	1358
Peak-hour factor, PHF	0.68	0.62	0.77	0.92	0.92	0.71	0.87	0.81	0.69	0.65	0.73	0.52
Adj. Flow (vph)	81	437	353	0	358	103	302	201	35	46	123	60
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	26	0	0	51
Lane Group Flow (vph)	0	518	353	0	461	0	302	201	9	0	169	9
Confl. Peds. (#/hr)	11		4	4		11	1		2	2		1
Heavy Vehicles (%)	0%	2%	5%	0%	4%	6%	4%	2%	5%	0%	7%	7%
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Actuated Green, G (s)		41.8	77.6		41.8		29.3	29.3	29.3		18.9	18.9
Effective Green, g (s)		41.8	71.1		41.8		29.3	29.3	29.3		18.9	18.9
Actuated g/C Ratio		0.35	0.59		0.35		0.24	0.24	0.24		0.16	0.16
Clearance Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		2.0			2.0		2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		421	792		969		355	382	315		235	213
v/s Ratio Prot			0.26		0.17		c0.21	0.13	0.01		c0.11	0.01
v/s Ratio Perm		c0.43										
v/c Ratio		1.23	0.45		0.48		0.85	0.53	0.03		0.72	0.04
Uniform Delay, d1		39.1	13.5		30.5		43.3	39.3	34.5		48.0	42.9
Progression Factor		0.79	0.92		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		118.9	0.1		1.7		16.9	0.6	0.0		8.5	0.0
Delay (s)		149.6	12.5		32.2		60.1	39.9	34.5		56.5	42.9
Level of Service		F	B		C		E	D	C		E	D
Approach Delay (s)		94.0			32.2			50.9			52.9	
Approach LOS		F			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	64.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



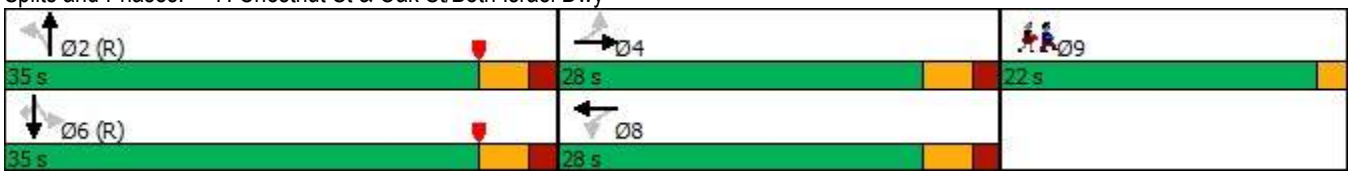
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Future Volume (vph)	81	9	74	8	6	14	116	553	10	23	278	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	8	8	11	11	11	9	9	12	12	9	9
Storage Length (ft)	0		0	0		0	80		0	0		150
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.939			0.935			0.997				0.850
Flt Protected		0.976			0.986		0.950				0.996	
Satd. Flow (prot)	0	1332	0	0	1494	0	1433	1504	0	0	1503	1283
Flt Permitted		0.834			0.920		0.502				0.938	
Satd. Flow (perm)	0	1138	0	0	1394	0	757	1504	0	0	1415	1283
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								1				78
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			314			227			439	
Travel Time (s)		13.8			7.1			5.2			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	10	80	9	7	15	126	601	11	25	302	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	178	0	0	31	0	126	612	0	0	327	78
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			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.19	1.19	1.19	1.30	1.30	1.14	1.14	1.30	1.30
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	28.0	28.0		28.0	28.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	32.9%	32.9%		32.9%	32.9%		41.2%	41.2%		41.2%	41.2%	41.2%
Maximum Green (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	30.0
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		23.0			23.0		43.2	43.2			43.2	43.2
Actuated g/C Ratio		0.27			0.27		0.51	0.51			0.51	0.51
v/c Ratio		0.58			0.08		0.33	0.80			0.45	0.11
Control Delay		35.6			24.0		19.8	32.0			19.5	5.3
Queue Delay		0.0			0.0		0.0	0.0			0.0	0.0
Total Delay		35.6			24.0		19.8	32.0			19.5	5.3
LOS		D			C		B	C			B	A
Approach Delay		35.6			24.0			29.9			16.8	
Approach LOS		D			C			C			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 26.6		Intersection LOS: C	
Intersection Capacity Utilization 79.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Chestnut St & Oak St/Beth Israel Dwy



Lane Group	Ø9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	22.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	178	31	126	612	327	78
v/c Ratio	0.58	0.08	0.33	0.80	0.45	0.11
Control Delay	35.6	24.0	19.8	32.0	19.5	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	24.0	19.8	32.0	19.5	5.3
Queue Length 50th (ft)	82	12	28	193	80	0
Queue Length 95th (ft)	151	34	106	#596	239	28
Internal Link Dist (ft)	526	234		147	359	
Turn Bay Length (ft)			80			150
Base Capacity (vph)	307	377	385	764	719	690
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.08	0.33	0.80	0.45	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Future Volume (vph)	81	9	74	8	6	14	116	553	10	23	278	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	11	11	11	9	9	12	12	9	9
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	1.00
Frt		0.94			0.93		1.00	1.00			1.00	0.85
Flt Protected		0.98			0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1332			1493		1433	1505			1503	1282
Flt Permitted		0.83			0.92		0.50	1.00			0.94	1.00
Satd. Flow (perm)		1138			1394		757	1505			1415	1282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	10	80	9	7	15	126	601	11	25	302	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	39
Lane Group Flow (vph)	0	178	0	0	31	0	126	611	0	0	327	39
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		23.0			23.0		42.0	42.0			42.0	42.0
Effective Green, g (s)		23.0			23.0		42.0	42.0			42.0	42.0
Actuated g/C Ratio		0.27			0.27		0.49	0.49			0.49	0.49
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		307			377		374	743			699	633
v/s Ratio Prot								c0.41				
v/s Ratio Perm		c0.16			0.02		0.17				0.23	0.03
v/c Ratio		0.58			0.08		0.34	0.82			0.47	0.06
Uniform Delay, d1		26.8			23.1		13.0	18.3			14.1	11.2
Progression Factor		1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		7.8			0.4		2.4	10.0			2.2	0.2
Delay (s)		34.6			23.6		15.5	28.3			16.4	11.4
Level of Service		C			C		B	C			B	B
Approach Delay (s)		34.6			23.6			26.1			15.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

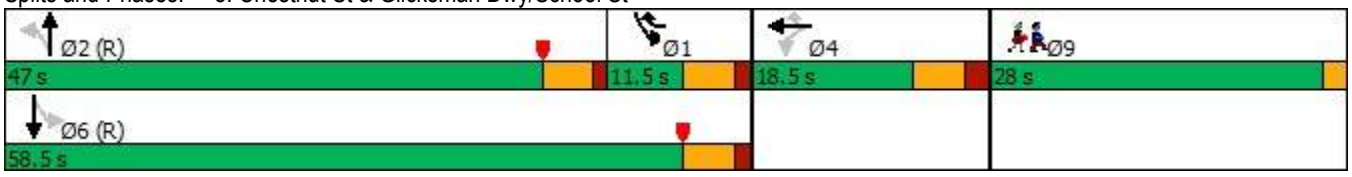
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Future Volume (vph)	0	0	0	166	4	53	6	473	234	51	210	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	9	13	9	12	12	9	12	12
Storage Length (ft)	0		0	0		150	40		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			70			70			100		
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						0.850		0.950			0.997	
Flt Protected					0.953		0.950			0.950		
Satd. Flow (prot)	0	0	0	0	1438	1473	1433	1593	0	1433	1671	0
Flt Permitted					0.953		0.614			0.202		
Satd. Flow (perm)	0	0	0	0	1438	1473	926	1593	0	305	1671	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						58		28			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		162			420			439			782	
Travel Time (s)		3.7			9.5			10.0			17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	180	4	58	7	514	254	55	228	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	184	58	7	768	0	55	232	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.30	1.30	1.10	1.30	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2		1	2	
Detector Template				Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)				20	100	20	20	100		20	100	
Trailing Detector (ft)				0	0	0	0	0		0	0	
Detector 1 Position(ft)				0	0	0	0	0		0	0	
Detector 1 Size(ft)				20	6	20	20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				4		4	2			6		
Detector Phase				4	4	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)				6.0	6.0	6.0	2.0	2.0		6.0	10.0	
Minimum Split (s)				12.0	12.0	11.5	7.0	7.0		11.5	15.5	
Total Split (s)				18.5	18.5	11.5	47.0	47.0		11.5	58.5	
Total Split (%)				17.6%	17.6%	11.0%	44.8%	44.8%		11.0%	55.7%	
Maximum Green (s)				12.5	12.5	6.0	42.0	42.0		6.0	53.0	
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)				2.0	2.0	1.5	1.0	1.0		1.5	1.5	
Lost Time Adjust (s)					0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lead/Lag						Lag	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode				None	None	None	C-Min	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					12.5	22.2	61.1	61.1		71.0	69.8	
Actuated g/C Ratio					0.12	0.21	0.58	0.58		0.68	0.66	
v/c Ratio					1.08	0.16	0.01	0.82		0.20	0.21	
Control Delay					135.6	9.8	17.5	30.7		15.7	10.4	
Queue Delay					0.0	0.0	0.0	38.4		0.0	0.0	
Total Delay					135.6	9.8	17.5	69.0		15.7	10.4	
LOS					F	A	B	E		B	B	
Approach Delay					105.5			68.6			11.4	
Approach LOS					F			E			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 9 (9%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 62.8		Intersection LOS: E	
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Chestnut St & Glicksman Dwy/School St



Lane Group	Ø9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	27%
Maximum Green (s)	26.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	184	58	7	768	55	232
v/c Ratio	1.08	0.16	0.01	0.82	0.20	0.21
Control Delay	135.6	9.8	17.5	30.7	15.7	10.4
Queue Delay	0.0	0.0	0.0	38.4	0.0	0.0
Total Delay	135.6	9.8	17.5	69.0	15.7	10.4
Queue Length 50th (ft)	~138	0	1	286	7	34
Queue Length 95th (ft)	#279	32	12	#844	39	136
Internal Link Dist (ft)	340			359		702
Turn Bay Length (ft)		150	40		115	
Base Capacity (vph)	171	357	538	938	270	1111
Starvation Cap Reductn	0	0	0	221	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.16	0.01	1.07	0.20	0.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Future Volume (vph)	0	0	0	166	4	53	6	473	234	51	210	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	9	9	13	9	12	12	9	12	12
Total Lost time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frt					1.00	0.85	1.00	0.95		1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1438	1472	1433	1593		1433	1672	
Flt Permitted					0.95	1.00	0.61	1.00		0.20	1.00	
Satd. Flow (perm)					1438	1472	926	1593		305	1672	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	180	4	58	7	514	254	55	228	4
RTOR Reduction (vph)	0	0	0	0	0	48	0	12	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	184	10	7	756	0	55	232	0
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Actuated Green, G (s)					12.5	17.3	58.8	58.8		68.6	68.6	
Effective Green, g (s)					12.5	17.3	58.8	58.8		68.6	68.6	
Actuated g/C Ratio					0.12	0.16	0.56	0.56		0.65	0.65	
Clearance Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Vehicle Extension (s)					3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)					171	319	518	892		250	1092	
v/s Ratio Prot						0.00		c0.47		0.01	c0.14	
v/s Ratio Perm					0.13	0.01	0.01			0.13		
v/c Ratio					1.08	0.03	0.01	0.85		0.22	0.21	
Uniform Delay, d1					46.2	36.8	10.2	19.3		22.8	7.3	
Progression Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2					90.5	0.0	0.0	9.8		0.4	0.4	
Delay (s)					136.8	36.8	10.3	29.1		23.3	7.8	
Level of Service					F	D	B	C		C	A	
Approach Delay (s)		0.0			112.8			29.0			10.7	
Approach LOS		A			F			C			B	

Intersection Summary			
HCM 2000 Control Delay	40.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	154	651	599	30	4	142
Future Volume (vph)	154	653	609	30	4	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.993		0.871	
Flt Protected		0.990			0.998	
Satd. Flow (prot)	0	2932	2944	0	1371	0
Flt Permitted		0.990			0.998	
Satd. Flow (perm)	0	2932	2944	0	1371	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		180	394		416	
Travel Time (s)		4.1	9.0		9.5	
Confl. Peds. (#/hr)	23			23		
Peak Hour Factor	0.75	0.77	0.84	0.81	0.50	0.78
Heavy Vehicles (%)	4%	2%	2%	8%	0%	5%
Adj. Flow (vph)	205	848	725	37	8	182
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1053	762	0	190	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.25	1.25	1.25	1.19	1.19
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

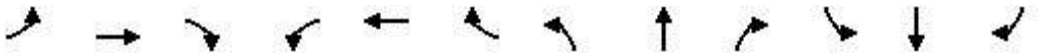
Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	154	651	599	30	4	142
Future Vol, veh/h	154	653	609	30	4	142
Conflicting Peds, #/hr	23	0	0	23	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	77	84	81	50	78
Heavy Vehicles, %	4	2	2	8	0	5
Mvmt Flow	205	848	725	37	8	182

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	785	0	-	0	1601	404
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	834	-
Critical Hdwy	4.18	-	-	-	6.8	7
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.24	-	-	-	3.5	3.35
Pot Cap-1 Maneuver	817	-	-	-	99	588
Stage 1	-	-	-	-	424	-
Stage 2	-	-	-	-	392	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	801	-	-	-	49	576
Mov Cap-2 Maneuver	-	-	-	-	49	-
Stage 1	-	-	-	-	215	-
Stage 2	-	-	-	-	384	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	22.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	801	-	-	-	396
HCM Lane V/C Ratio	0.256	-	-	-	0.48
HCM Control Delay (s)	11	1.8	-	-	22.2
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	1	-	-	-	2.5

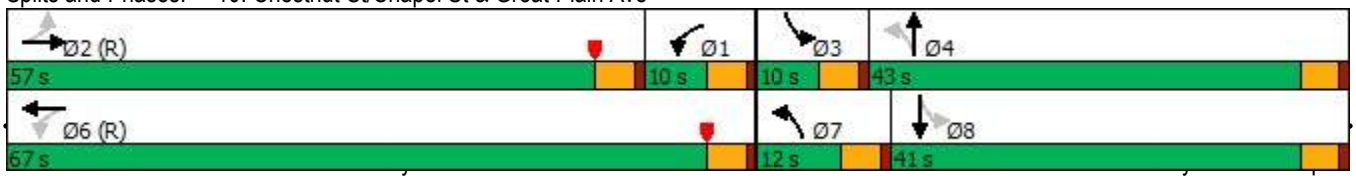


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Future Volume (vph)	61	522	74	83	497	43	97	280	57	18	156	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	175		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.983			0.989			0.975			0.953	
Flt Protected		0.995			0.993		0.950			0.950		
Satd. Flow (prot)	0	2861	0	0	2876	0	1444	1527	0	1430	1469	0
Flt Permitted		0.728			0.637		0.357			0.315		
Satd. Flow (perm)	0	2093	0	0	1845	0	542	1527	0	474	1469	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			238			782			424	
Travel Time (s)		9.0			5.4			17.8			9.6	
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.66	0.76	0.76	0.75	0.83	0.75	0.81	0.88	0.89	0.50	0.91	0.57
Heavy Vehicles (%)	8%	2%	9%	3%	4%	0%	5%	6%	2%	6%	4%	13%
Adj. Flow (vph)	92	687	97	111	599	57	120	318	64	36	171	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	876	0	0	767	0	120	382	0	36	248	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.19	1.19	1.25	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	34.5	34.5		9.5	34.5		9.5	34.5		9.5	34.5	
Total Split (s)	57.0	57.0		10.0	67.0		12.0	43.0		10.0	41.0	
Total Split (%)	47.5%	47.5%		8.3%	55.8%		10.0%	35.8%		8.3%	34.2%	
Maximum Green (s)	52.5	52.5		5.5	62.5		7.5	38.5		5.5	36.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lead		Lag			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0			8.0			8.0	
Flash Dont Walk (s)	16.0	16.0			16.0			22.0			22.0	
Pedestrian Calls (#/hr)	2	2			2			2			2	
Act Effct Green (s)		68.6			68.6		41.4	36.0		34.6	28.5	
Actuated g/C Ratio		0.57			0.57		0.34	0.30		0.29	0.24	
v/c Ratio		0.73			0.73		0.47	0.83		0.19	0.71	
Control Delay		25.3			20.9		32.5	55.8		25.6	52.3	
Queue Delay		1.5			1.2		0.0	9.5		0.4	0.0	
Total Delay		26.7			22.1		32.5	65.3		25.9	52.3	
LOS		C			C		C	E		C	D	
Approach Delay		26.7			22.1			57.4			49.0	
Approach LOS		C			C			E			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 10 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 34.2		Intersection LOS: C	
Intersection Capacity Utilization 79.0%		ICU Level of Service D	
Analysis Period (min) 15			

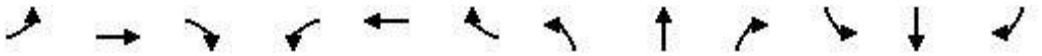
Splits and Phases: 10: Chestnut St/Chapel St & Great Plain Ave



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	876	767	120	382	36	248
v/c Ratio	0.73	0.73	0.47	0.83	0.19	0.71
Control Delay	25.3	20.9	32.5	55.8	25.6	52.3
Queue Delay	1.5	1.2	0.0	9.5	0.4	0.0
Total Delay	26.7	22.1	32.5	65.3	25.9	52.3
Queue Length 50th (ft)	278	300	60	277	17	172
Queue Length 95th (ft)	280	364	92	#381	21	248
Internal Link Dist (ft)	314	158		702		344
Turn Bay Length (ft)			175		100	
Base Capacity (vph)	1196	1054	257	489	185	446
Starvation Cap Reductn	0	116	0	0	0	0
Spillback Cap Reductn	158	0	0	81	34	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.82	0.47	0.94	0.24	0.56

Intersection Summary

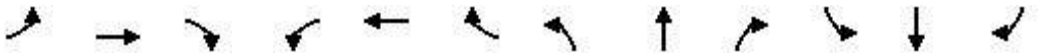
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Future Volume (vph)	61	522	74	83	497	43	97	280	57	18	156	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	11	11	10	11	11
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.97		1.00	0.95	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2861			2875		1444	1527		1430	1470	
Flt Permitted		0.73			0.64		0.36	1.00		0.31	1.00	
Satd. Flow (perm)		2094			1843		542	1527		474	1470	
Peak-hour factor, PHF	0.66	0.76	0.76	0.75	0.83	0.75	0.81	0.88	0.89	0.50	0.91	0.57
Adj. Flow (vph)	92	687	97	111	599	57	120	318	64	36	171	77
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	876	0	0	767	0	120	382	0	36	248	0
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	8%	2%	9%	3%	4%	0%	5%	6%	2%	6%	4%	13%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		66.8			66.8		44.2	36.0		34.1	30.4	
Effective Green, g (s)		66.8			66.8		44.2	36.0		34.1	30.4	
Actuated g/C Ratio		0.56			0.56		0.37	0.30		0.28	0.25	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1165			1025		269	458		164	372	
v/s Ratio Prot							c0.03	c0.25		0.01	0.17	
v/s Ratio Perm		c0.42			0.42		0.13			0.06		
v/c Ratio		0.75			0.75		0.45	0.83		0.22	0.67	
Uniform Delay, d1		20.3			20.2		27.1	39.2		32.2	40.2	
Progression Factor		1.00			0.81		1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.5			2.5		1.2	12.3		0.7	4.5	
Delay (s)		24.8			18.9		28.3	51.6		32.9	44.7	
Level of Service		C			B		C	D		C	D	
Approach Delay (s)		24.8			18.9			46.0			43.2	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	128	8	157	105	6	8	2	135	10	1	4
Future Volume (vph)	1	128	8	157	105	6	8	2	135	10	1	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	14	12	12	13	12	12	10	12
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
Ped Bike Factor												
Frt		0.994			0.997			0.881			0.964	
Flt Protected		0.999			0.972			0.995			0.971	
Satd. Flow (prot)	0	1738	0	0	1721	0	0	1503	0	0	1494	0
Flt Permitted		0.999			0.972			0.995			0.971	
Satd. Flow (perm)	0	1738	0	0	1721	0	0	1503	0	0	1494	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		521			453			566			491	
Travel Time (s)		11.8			10.3			12.9			11.2	
Confl. Peds. (#/hr)	1		3	3		1						
Peak Hour Factor	0.25	0.71	0.88	0.70	0.66	0.63	0.44	0.50	0.80	0.56	0.25	0.50
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	14%	0%	2%	0%	0%	0%
Adj. Flow (vph)	4	180	9	224	159	10	18	4	169	18	4	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	393	0	0	191	0	0	30	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	1.14	1.10	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	128	8	157	105	6	8	2	135	10	1	4
Future Vol, veh/h	1	128	8	157	105	6	8	2	135	10	1	4
Conflicting Peds, #/hr	1	0	3	3	0	1	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	25	71	88	70	66	63	44	50	80	56	25	50
Heavy Vehicles, %	0	1	0	4	1	0	14	0	2	0	0	0
Mvmt Flow	4	180	9	224	159	10	18	4	169	18	4	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	170	0	0	192	0	0	814	814	188	892	813	165
Stage 1	-	-	-	-	-	-	196	196	-	613	613	-
Stage 2	-	-	-	-	-	-	618	618	-	279	200	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.24	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.24	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.24	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.626	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1420	-	-	1370	-	-	283	315	854	265	315	885
Stage 1	-	-	-	-	-	-	779	742	-	483	486	-
Stage 2	-	-	-	-	-	-	457	484	-	732	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1419	-	-	1366	-	-	237	256	851	180	256	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	237	256	-	180	256	-
Stage 1	-	-	-	-	-	-	774	738	-	481	398	-
Stage 2	-	-	-	-	-	-	367	396	-	582	735	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	4.7	12.7	22
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	657	1419	-	-	1366	-	-	241
HCM Lane V/C Ratio	0.291	0.003	-	-	0.164	-	-	0.124
HCM Control Delay (s)	12.7	7.5	0	-	8.2	0	-	22
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.6	-	-	0.4

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	176	148	130	65	68	53
Future Volume (vph)	176	148	130	67	73	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.962		0.944	
Flt Protected		0.979			0.972	
Satd. Flow (prot)	0	1667	1516	0	1627	0
Flt Permitted		0.979			0.972	
Satd. Flow (perm)	0	1667	1516	0	1627	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		525	1036		802	
Travel Time (s)		11.9	23.5		18.2	
Confl. Peds. (#/hr)	4			4		1
Peak Hour Factor	0.90	0.56	0.59	0.78	0.74	0.75
Heavy Vehicles (%)	1%	0%	1%	2%	2%	4%
Adj. Flow (vph)	196	264	220	86	99	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	460	306	0	170	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.25	1.25	1.05	1.05
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	176	148	130	65	68	53
Future Vol, veh/h	176	148	130	67	73	53
Conflicting Peds, #/hr	4	0	0	4	0	1
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	90	56	59	78	74	75
Heavy Vehicles, %	1	0	1	2	2	4
Mvmt Flow	196	264	220	86	99	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	310	0	-	0	923	268
Stage 1	-	-	-	-	267	-
Stage 2	-	-	-	-	656	-
Critical Hdwy	4.11	-	-	-	6.42	6.24
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.209	-	-	-	3.518	3.336
Pot Cap-1 Maneuver	1256	-	-	-	299	766
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	516	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1250	-	-	-	242	762
Mov Cap-2 Maneuver	-	-	-	-	242	-
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	514	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	25.9
HCM LOS			D

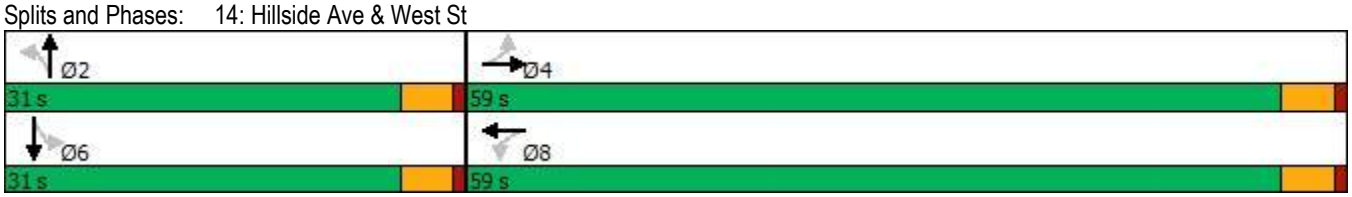
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1250	-	-	-	338
HCM Lane V/C Ratio	0.156	-	-	-	0.501
HCM Control Delay (s)	8.4	0	-	-	25.9
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.6	-	-	-	2.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	350	24	99	228	32	9	67	86	9	72	18
Future Volume (vph)	28	350	24	102	228	32	9	68	97	9	72	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	12	12	14	12	12	13	12	12	13	12
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
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.990			0.985			0.924			0.973	
Flt Protected		0.995			0.985			0.998			0.996	
Satd. Flow (prot)	0	1482	0	0	1718	0	0	1576	0	0	1606	0
Flt Permitted		0.933			0.777			0.982			0.962	
Satd. Flow (perm)	0	1387	0	0	1353	0	0	1550	0	0	1551	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			13			73			14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		459			455			883			496	
Travel Time (s)		10.4			10.3			20.1			11.3	
Confl. Peds. (#/hr)	14		7	7		14	2		3	3		2
Peak Hour Factor	0.63	0.90	0.69	0.70	0.81	0.60	0.67	0.66	0.65	0.67	0.63	0.57
Heavy Vehicles (%)	0%	2%	5%	2%	3%	0%	0%	2%	3%	25%	2%	13%
Adj. Flow (vph)	44	389	35	146	281	53	13	103	149	13	114	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	468	0	0	480	0	0	265	0	0	159	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	1.14	1.30	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	59.0	59.0		59.0	59.0		31.0	31.0		31.0	31.0	
Total Split (%)	65.6%	65.6%		65.6%	65.6%		34.4%	34.4%		34.4%	34.4%	
Maximum Green (s)	54.5	54.5		54.5	54.5		26.5	26.5		26.5	26.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	20	20		20	20		20	20		20	20	
Act Effct Green (s)		23.1			23.1			12.3			12.3	
Actuated g/C Ratio		0.51			0.51			0.27			0.27	
v/c Ratio		0.66			0.69			0.56			0.37	
Control Delay		13.5			14.5			17.4			17.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		13.5			14.5			17.4			17.6	
LOS		B			B			B			B	
Approach Delay		13.5			14.5			17.4			17.6	
Approach LOS		B			B			B			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 45.5			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 69.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 14: Hillside Ave & West St



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	468	480	265	159
v/c Ratio	0.66	0.69	0.56	0.37
Control Delay	13.5	14.5	17.4	17.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.5	14.5	17.4	17.6
Queue Length 50th (ft)	69	71	38	27
Queue Length 95th (ft)	201	175	86	64
Internal Link Dist (ft)	379	375	803	416
Turn Bay Length (ft)				
Base Capacity (vph)	1316	1284	1042	1022
Starvation Cap Reductn	0	9	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	0.38	0.25	0.16

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	350	24	99	228	32	9	67	86	9	72	18
Future Volume (vph)	28	350	24	102	228	32	9	68	97	9	72	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	12	12	14	12	12	13	12	12	13	12
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.92			0.97	
Flt Protected		1.00			0.99			1.00			1.00	
Satd. Flow (prot)		1482			1720			1577			1606	
Flt Permitted		0.93			0.78			0.98			0.96	
Satd. Flow (perm)		1389			1357			1552			1552	
Peak-hour factor, PHF	0.63	0.90	0.69	0.70	0.81	0.60	0.67	0.66	0.65	0.67	0.63	0.57
Adj. Flow (vph)	44	389	35	146	281	53	13	103	149	13	114	32
RTOR Reduction (vph)	0	4	0	0	6	0	0	53	0	0	10	0
Lane Group Flow (vph)	0	464	0	0	474	0	0	212	0	0	149	0
Confl. Peds. (#/hr)	14		7	7		14	2		3	3		2
Heavy Vehicles (%)	0%	2%	5%	2%	3%	0%	0%	2%	3%	25%	2%	13%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		23.1			23.1			12.3			12.3	
Effective Green, g (s)		23.1			23.1			12.3			12.3	
Actuated g/C Ratio		0.52			0.52			0.28			0.28	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		722			706			429			429	
v/s Ratio Prot												
v/s Ratio Perm		0.33			c0.35			c0.14			0.10	
v/c Ratio		0.64			0.67			0.49			0.35	
Uniform Delay, d1		7.7			7.8			13.4			12.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.0			2.5			0.9			0.5	
Delay (s)		9.6			10.4			14.3			13.3	
Level of Service		A			B			B			B	
Approach Delay (s)		9.6			10.4			14.3			13.3	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	134	28	23	187	32	39	89	21	25	51	10
Future Volume (vph)	18	149	28	23	193	32	40	89	21	25	51	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	15	12	12	13	12
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
Ped Bike Factor												
Frt		0.977			0.979			0.982			0.981	
Flt Protected		0.995			0.994			0.987			0.983	
Satd. Flow (prot)	0	1651	0	0	1516	0	0	1775	0	0	1639	0
Flt Permitted		0.995			0.994			0.987			0.983	
Satd. Flow (perm)	0	1651	0	0	1516	0	0	1775	0	0	1639	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			695			637			578	
Travel Time (s)		9.3			15.8			14.5			13.1	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.67	0.82	0.63	0.66	0.88	0.66	0.67	0.65	0.68	0.58	0.77	0.56
Heavy Vehicles (%)	0%	0%	4%	5%	1%	7%	0%	2%	11%	4%	2%	11%
Adj. Flow (vph)	27	182	44	35	219	48	60	137	31	43	66	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	253	0	0	302	0	0	228	0	0	127	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	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.01	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	134	28	23	187	32	39	89	21	25	51	10
Future Vol, veh/h	18	149	28	23	193	32	40	89	21	25	51	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	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	67	82	63	66	88	66	67	65	68	58	77	56
Heavy Vehicles, %	0	0	4	5	1	7	0	2	11	4	2	11
Mvmt Flow	27	182	44	35	219	48	60	137	31	43	66	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	267	0	0	226	0	0	613	595	206	657	593	243
Stage 1	-	-	-	-	-	-	258	258	-	313	313	-
Stage 2	-	-	-	-	-	-	355	337	-	344	280	-
Critical Hdwy	4.1	-	-	4.15	-	-	7.1	6.52	6.31	7.14	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.14	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.14	5.52	-
Follow-up Hdwy	2.2	-	-	2.245	-	-	3.5	4.018	3.399	3.536	4.018	3.399
Pot Cap-1 Maneuver	1308	-	-	1325	-	-	408	417	812	375	418	774
Stage 1	-	-	-	-	-	-	751	694	-	693	657	-
Stage 2	-	-	-	-	-	-	666	641	-	667	679	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1308	-	-	1325	-	-	333	394	811	253	395	774
Mov Cap-2 Maneuver	-	-	-	-	-	-	333	394	-	253	395	-
Stage 1	-	-	-	-	-	-	733	677	-	676	637	-
Stage 2	-	-	-	-	-	-	565	621	-	499	663	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.9	24.9	20.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	403	1308	-	-	1325	-	-	352
HCM Lane V/C Ratio	0.565	0.021	-	-	0.026	-	-	0.361
HCM Control Delay (s)	24.9	7.8	0	-	7.8	0	-	20.9
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	3.4	0.1	-	-	0.1	-	-	1.6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	64	59	70	504	330	133	
Future Volume (vph)	64	59	70	504	330	133	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.99			1.00	0.99		
Frt	0.930				0.960		
Flt Protected	0.976			0.992			
Satd. Flow (prot)	1536	0	0	1642	1599	0	
Flt Permitted	0.976			0.750			
Satd. Flow (perm)	1520	0	0	1241	1599	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	52				41		
Link Speed (mph)	30			30	30		
Link Distance (ft)	756			591	599		
Travel Time (s)	17.2			13.4	13.6		
Confl. Peds. (#/hr)	3		2			2	
Confl. Bikes (#/hr)						1	
Peak Hour Factor	0.85	0.74	0.63	0.83	0.63	0.60	
Heavy Vehicles (%)	0%	2%	5%	3%	2%	2%	
Adj. Flow (vph)	75	80	111	607	524	222	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	155	0	0	718	746	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	1		1	2	2		
Detector Template	Left		Left	Thru	Thru		
Leading Detector (ft)	20		20	100	100		
Trailing Detector (ft)	0		0	0	0		
Detector 1 Position(ft)	0		0	0	0		
Detector 1 Size(ft)	20		20	6	6		
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		
Detector 2 Position(ft)				94	94		
Detector 2 Size(ft)				6	6		
Detector 2 Type				Cl+Ex	Cl+Ex		
Detector 2 Channel							
Detector 2 Extend (s)				0.0	0.0		
Turn Type	Prot		Perm	NA	NA		
Protected Phases	4			2	6		3

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Permitted Phases			2				
Detector Phase	4		2	2	6		
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0		5.0
Minimum Split (s)	9.5		9.5	9.5	9.5		22.5
Total Split (s)	10.0		47.5	47.5	47.5		22.5
Total Split (%)	12.5%		59.4%	59.4%	59.4%		28%
Maximum Green (s)	5.5		43.0	43.0	43.0		18.0
Yellow Time (s)	3.5		3.5	3.5	3.5		3.5
All-Red Time (s)	1.0		1.0	1.0	1.0		1.0
Lost Time Adjust (s)	0.0			0.0	0.0		
Total Lost Time (s)	4.5			4.5	4.5		
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0
Recall Mode	None		Min	Min	Min		None
Walk Time (s)							7.0
Flash Dont Walk (s)							11.0
Pedestrian Calls (#/hr)							10
Act Effct Green (s)	5.6			50.6	50.6		
Actuated g/C Ratio	0.08			0.73	0.73		
v/c Ratio	0.91			0.79	0.63		
Control Delay	73.5			17.9	10.4		
Queue Delay	0.0			0.0	0.0		
Total Delay	73.5			17.9	10.4		
LOS	E			B	B		
Approach Delay	73.5			17.9	10.4		
Approach LOS	E			B	B		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 80			
Actuated Cycle Length: 69.1			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 19.8		Intersection LOS: B	
Intersection Capacity Utilization 81.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 16: Webster St & May St

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	155	718	746
v/c Ratio	0.91	0.79	0.63
Control Delay	73.5	17.9	10.4
Queue Delay	0.0	0.0	0.0
Total Delay	73.5	17.9	10.4
Queue Length 50th (ft)	40	102	75
Queue Length 95th (ft)	#156	#537	224
Internal Link Dist (ft)	676	511	519
Turn Bay Length (ft)			
Base Capacity (vph)	171	908	1181
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.91	0.79	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	64	59	70	504	330	133
Future Volume (vph)	64	59	70	504	330	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.99	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	0.93			1.00	0.96	
Flt Protected	0.98			0.99	1.00	
Satd. Flow (prot)	1537			1642	1599	
Flt Permitted	0.98			0.75	1.00	
Satd. Flow (perm)	1537			1242	1599	
Peak-hour factor, PHF	0.85	0.74	0.63	0.83	0.63	0.60
Adj. Flow (vph)	75	80	111	607	524	222
RTOR Reduction (vph)	48	0	0	0	13	0
Lane Group Flow (vph)	107	0	0	718	733	0
Confl. Peds. (#/hr)	3		2			2
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	0%	2%	5%	3%	2%	2%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	5.6			50.6	50.6	
Effective Green, g (s)	5.6			50.6	50.6	
Actuated g/C Ratio	0.08			0.70	0.70	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	118			863	1111	
v/s Ratio Prot	c0.07				0.46	
v/s Ratio Perm				c0.58		
v/c Ratio	0.91			0.83	0.66	
Uniform Delay, d1	33.3			8.0	6.3	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	54.3			6.9	1.5	
Delay (s)	87.7			14.9	7.7	
Level of Service	F			B	A	
Approach Delay (s)	87.7			14.9	7.7	
Approach LOS	F			B	A	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

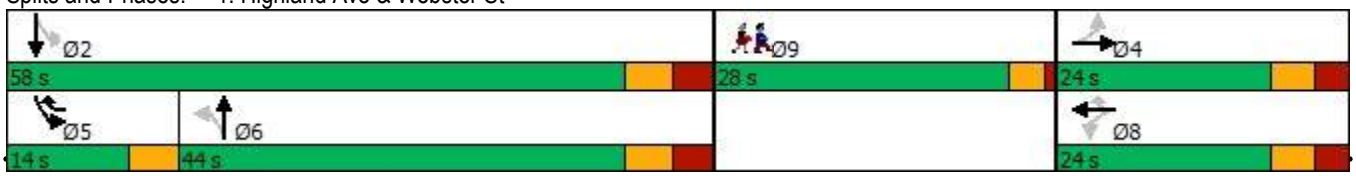
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	261	40	25	173	237	32	427	42	282	622	70
Future Volume (vph)	72	261	40	25	173	237	32	448	42	282	659	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	10	10	12	10	10	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Frt		0.983				0.850		0.987			0.985	
Flt Protected		0.990			0.994		0.950			0.950		
Satd. Flow (prot)	0	3243	0	0	1739	1507	1636	1748	0	3268	1723	0
Flt Permitted		0.698			0.786		0.163			0.136		
Satd. Flow (perm)	0	2282	0	0	1374	1459	280	1748	0	468	1723	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								5				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			193			991			1083	
Travel Time (s)		8.6			4.4			22.5			24.6	
Confl. Peds. (#/hr)	6		3	3		6	8		2	2		8
Confl. Bikes (#/hr)			3						2			1
Peak Hour Factor	0.93	0.95	0.91	0.88	0.84	0.66	0.80	0.78	0.80	0.52	0.88	0.85
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	3%	0%	0%	0%	1%	2%
Adj. Flow (vph)	77	275	44	28	206	359	40	574	53	542	749	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	396	0	0	234	359	40	627	0	542	831	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			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.09	1.09	1.09	1.09	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phase	4	4		8	8	5	6	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	10.0	10.0		6.0	10.0	
Minimum Split (s)	12.5	12.5		12.5	12.5	10.0	17.5	17.5		10.0	17.5	
Total Split (s)	24.0	24.0		24.0	24.0	14.0	44.0	44.0		14.0	58.0	
Total Split (%)	21.8%	21.8%		21.8%	21.8%	12.7%	40.0%	40.0%		12.7%	52.7%	
Maximum Green (s)	17.5	17.5		17.5	17.5	10.0	36.5	36.5		10.0	50.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	0.0	3.5	3.5		0.0	3.5	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		-2.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0	7.5	7.5		2.0	7.5	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		17.9			17.9	30.6	37.3	37.3		57.2	51.6	
Actuated g/C Ratio		0.18			0.18	0.31	0.38	0.38		0.58	0.52	
v/c Ratio		0.96			0.94	0.79	0.38	0.95		0.88	0.92	
Control Delay		78.8			88.5	45.6	41.1	57.7		35.6	42.9	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		78.8			88.5	45.6	41.1	57.7		35.6	42.9	
LOS		E			F	D	D	E		D	D	
Approach Delay		78.8			62.5			56.7			40.0	
Approach LOS		E			E			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 98.8			
Natural Cycle: 130			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 53.2		Intersection LOS: D	
Intersection Capacity Utilization 89.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Highland Ave & Webster St



Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	25%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	44
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	396	234	359	40	627	542	831
v/c Ratio	0.96	0.94	0.79	0.38	0.95	0.88	0.92
Control Delay	78.8	88.5	45.6	41.1	57.7	35.6	42.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.8	88.5	45.6	41.1	57.7	35.6	42.9
Queue Length 50th (ft)	~166	~184	229	22	~493	125	~641
Queue Length 95th (ft)	#266	#307	225	53	#562	77	#846
Internal Link Dist (ft)	299	113			911		1003
Turn Bay Length (ft)				60			
Base Capacity (vph)	413	248	457	105	662	617	899
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.94	0.79	0.38	0.95	0.88	0.92

Intersection Summary

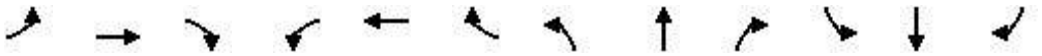
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	261	40	25	173	237	32	427	42	282	622	70
Future Volume (vph)	72	261	40	25	173	237	32	448	42	282	659	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	12	10	10	10	10	12	10	10	12
Total Lost time (s)		6.5			6.5	4.0	7.5	7.5		2.0	7.5	
Lane Util. Factor		0.95			1.00	1.00	1.00	1.00		0.97	1.00	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3240			1738	1478	1632	1749		3268	1723	
Flt Permitted		0.70			0.79	1.00	0.16	1.00		0.14	1.00	
Satd. Flow (perm)		2285			1374	1478	280	1749		469	1723	
Peak-hour factor, PHF	0.93	0.95	0.91	0.88	0.84	0.66	0.80	0.78	0.80	0.52	0.88	0.85
Adj. Flow (vph)	77	275	44	28	206	359	40	574	52	542	749	82
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	396	0	0	234	359	40	624	0	542	831	0
Confl. Peds. (#/hr)	6		3	3		6	8		2	2		8
Confl. Bikes (#/hr)			3						2			1
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	3%	0%	0%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		17.9			17.9	28.1	37.4	37.4		51.6	51.6	
Effective Green, g (s)		17.9			17.9	28.1	37.4	37.4		53.6	51.6	
Actuated g/C Ratio		0.18			0.18	0.28	0.37	0.37		0.53	0.51	
Clearance Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		407			244	413	104	651		590	885	
v/s Ratio Prot						0.09		0.36		0.11	c0.48	
v/s Ratio Perm		c0.17			0.17	0.15	0.14			0.38		
v/c Ratio		0.97			0.96	0.87	0.38	0.96		0.92	0.94	
Uniform Delay, d1		41.0			40.9	34.4	23.1	30.7		22.4	22.9	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		37.1			45.4	16.8	0.9	24.9		19.0	16.9	
Delay (s)		78.2			86.3	51.3	23.9	55.6		41.4	39.8	
Level of Service		E			F	D	C	E		D	D	
Approach Delay (s)		78.2			65.1			53.7			40.5	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.4	Sum of lost time (s)	22.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



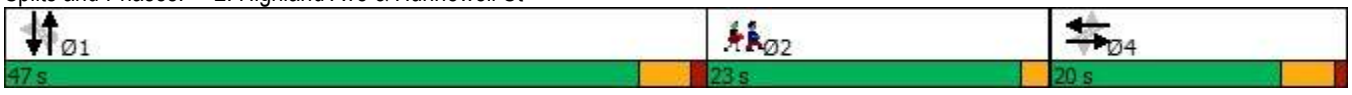
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	89	83	2	24	1	128	422	12	13	611	66
Future Volume (vph)	45	89	87	2	24	1	134	437	12	13	637	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	11	12	12	13	12	12	13	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.952			0.989			0.995			0.982	
Flt Protected		0.990			0.996		0.950				0.998	
Satd. Flow (prot)	0	1632	0	0	1622	0	1608	1723	0	0	1699	0
Flt Permitted		0.922			0.973		0.309				0.975	
Satd. Flow (perm)	0	1513	0	0	1585	0	522	1723	0	0	1659	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			4			2			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		695			444			621			443	
Travel Time (s)		15.8			10.1			14.1			10.1	
Confl. Peds. (#/hr)	8					8	11		9	9		11
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.71	0.66	0.80	0.50	0.61	0.25	0.62	0.81	0.69	0.50	0.98	0.74
Heavy Vehicles (%)	3%	0%	4%	0%	0%	0%	1%	2%	0%	0%	1%	5%
Adj. Flow (vph)	63	135	109	4	39	4	216	540	17	26	650	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	307	0	0	47	0	216	557	0	0	780	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.19	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			1			1	
Permitted Phases	4			4			1			1		
Detector Phase	4	4		4	4		1	1		1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	9.5		9.5	9.5		9.5	9.5		9.5	9.5	
Total Split (s)	20.0	20.0		20.0	20.0		47.0	47.0		47.0	47.0	
Total Split (%)	22.2%	22.2%		22.2%	22.2%		52.2%	52.2%		52.2%	52.2%	
Maximum Green (s)	15.5	15.5		15.5	15.5		42.5	42.5		42.5	42.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5			4.5	
Lead/Lag							Lead	Lead		Lead	Lead	
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	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.8			15.8		44.0	44.0			44.0	
Actuated g/C Ratio		0.21			0.21		0.57	0.57			0.57	
v/c Ratio		0.92			0.14		0.72	0.56			0.82	
Control Delay		65.8			28.3		34.2	15.9			25.7	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		65.8			28.3		34.2	15.9			25.7	
LOS		E			C		C	B			C	
Approach Delay		65.8			28.3			21.0			25.7	
Approach LOS		E			C			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 76.8			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 30.3		Intersection LOS: C	
Intersection Capacity Utilization 97.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Highland Ave & Hunnewell St



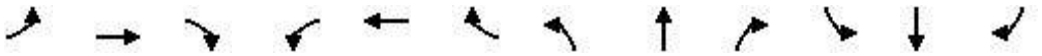
Lane Group	Ø2
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	21.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	307	47	216	557	780
v/c Ratio	0.92	0.14	0.72	0.56	0.82
Control Delay	65.8	28.3	34.2	15.9	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	28.3	34.2	15.9	25.7
Queue Length 50th (ft)	110	14	47	105	186
Queue Length 95th (ft)	#204	34	118	300	#681
Internal Link Dist (ft)	615	364		541	363
Turn Bay Length (ft)			60		
Base Capacity (vph)	332	329	299	987	955
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.92	0.14	0.72	0.56	0.82

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	89	83	2	24	1	128	422	12	13	611	66
Future Volume (vph)	45	89	87	2	24	1	134	437	12	13	637	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	11	12	12	13	12	12	13	12
Total Lost time (s)		4.5			4.5		4.5	4.5			4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Frt		0.95			0.99		1.00	1.00			0.98	
Flt Protected		0.99			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1626			1622		1604	1724			1700	
Flt Permitted		0.92			0.97		0.31	1.00			0.97	
Satd. Flow (perm)		1514			1585		522	1724			1660	
Peak-hour factor, PHF	0.71	0.66	0.80	0.50	0.61	0.25	0.62	0.81	0.69	0.50	0.98	0.74
Adj. Flow (vph)	63	135	109	4	39	4	216	540	17	26	650	104
RTOR Reduction (vph)	0	22	0	0	3	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	285	0	0	44	0	216	556	0	0	775	0
Confl. Peds. (#/hr)	8					8	11		9	9		11
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	3%	0%	4%	0%	0%	0%	1%	2%	0%	0%	1%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			1			1	
Permitted Phases	4			4			1			1		
Actuated Green, G (s)		15.8			15.8		44.0	44.0			44.0	
Effective Green, g (s)		15.8			15.8		44.0	44.0			44.0	
Actuated g/C Ratio		0.20			0.20		0.56	0.56			0.56	
Clearance Time (s)		4.5			4.5		4.5	4.5			4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		306			321		294	972			936	
v/s Ratio Prot								0.32				
v/s Ratio Perm		c0.19			0.03		0.41				c0.47	
v/c Ratio		0.93			0.14		0.73	0.57			0.83	
Uniform Delay, d1		30.6			25.5		12.7	10.9			13.9	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		34.1			0.2		9.2	0.8			6.1	
Delay (s)		64.7			25.7		21.8	11.8			20.0	
Level of Service		E			C		C	B			C	
Approach Delay (s)		64.7			25.7			14.6			20.0	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	78.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	97.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

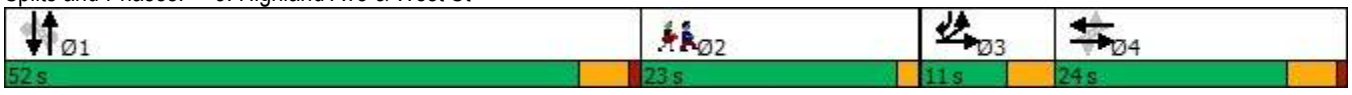
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Future Volume (vph)	133	212	45	49	171	37	25	432	40	48	431	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	9	10	12	12	13	12	12	13	12
Storage Length (ft)	0		0	150		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.98	0.99			0.99			1.00	0.97
Frt		0.971			0.970			0.984				0.850
Flt Protected	0.950			0.950				0.997			0.995	
Satd. Flow (prot)	1433	1471	0	1462	1535	0	0	1710	0	0	1724	1439
Flt Permitted	0.411			0.586				0.894			0.891	
Satd. Flow (perm)	615	1471	0	882	1535	0	0	1533	0	0	1542	1389
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		455			303			836			621	
Travel Time (s)		10.3			6.9			19.0			14.1	
Confl. Peds. (#/hr)	7		11	11		7	14		21	21		14
Confl. Bikes (#/hr)						1			1			1
Peak Hour Factor	0.69	0.92	0.83	0.66	0.84	0.73	0.82	0.96	0.64	0.81	0.88	0.89
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	0%	1%	0%	2%	2%	1%
Adj. Flow (vph)	193	230	54	74	204	51	30	450	63	59	490	275
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	284	0	74	255	0	0	543	0	0	549	275
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)		9			9			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.14	1.30	1.25	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	3 4			4			1			1	3
Permitted Phases	4			4			1			1		1
Detector Phase	3	3 4		4	4		1	1		1	1	3
Switch Phase												
Minimum Initial (s)	6.0			6.0	6.0		10.0	10.0		10.0	10.0	6.0
Minimum Split (s)	10.0			11.0	11.0		15.0	15.0		15.0	15.0	10.0
Total Split (s)	11.0			24.0	24.0		52.0	52.0		52.0	52.0	11.0
Total Split (%)	10.0%			21.8%	21.8%		47.3%	47.3%		47.3%	47.3%	10.0%
Maximum Green (s)	7.0			19.0	19.0		47.0	47.0		47.0	47.0	7.0
Yellow Time (s)	4.0			4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0			1.0	1.0		1.0	1.0		1.0	1.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0			5.0	5.0			5.0			5.0	4.0
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			4.0	4.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	28.0	32.1		19.6	19.6			38.5			38.5	46.9
Actuated g/C Ratio	0.32	0.37		0.23	0.23			0.44			0.44	0.54
v/c Ratio	0.73	0.52		0.37	0.73			0.80			0.80	0.36
Control Delay	45.9	30.6		41.7	50.1			32.6			32.8	9.9
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	45.9	30.6		41.7	50.1			32.6			32.8	9.9
LOS	D	C		D	D			C			C	A
Approach Delay		36.8			48.2			32.6			25.1	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 86.8			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 33.1		Intersection LOS: C	
Intersection Capacity Utilization 82.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Highland Ave & West St



Lane Group	Ø2
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	23.0
Total Split (%)	21%
Maximum Green (s)	21.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	24
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	193	284	74	255	543	549	275
v/c Ratio	0.73	0.52	0.37	0.73	0.80	0.80	0.36
Control Delay	45.9	30.6	41.7	50.1	32.6	32.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.9	30.6	41.7	50.1	32.6	32.8	9.9
Queue Length 50th (ft)	67	105	31	117	199	202	52
Queue Length 95th (ft)	#145	271	67	#299	#512	#473	97
Internal Link Dist (ft)		375		223	756	541	
Turn Bay Length (ft)			150				50
Base Capacity (vph)	266	548	201	350	866	871	754
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.52	0.37	0.73	0.63	0.63	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Future Volume (vph)	133	212	45	49	171	37	25	432	40	48	431	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	12	9	10	12	12	13	12	12	13	12
Total Lost time (s)	4.0	4.0		5.0	5.0			5.0			5.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99			0.99			1.00	0.97
Flpb, ped/bikes	1.00	1.00		0.98	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.97			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	1.00
Satd. Flow (prot)	1430	1473		1438	1537			1711			1721	1398
Flt Permitted	0.41	1.00		0.59	1.00			0.89			0.89	1.00
Satd. Flow (perm)	618	1473		886	1537			1534			1543	1398
Peak-hour factor, PHF	0.69	0.92	0.83	0.66	0.84	0.73	0.82	0.96	0.64	0.81	0.88	0.89
Adj. Flow (vph)	193	230	54	74	204	51	30	450	62	59	490	275
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	193	284	0	74	255	0	0	543	0	0	549	275
Confl. Peds. (#/hr)	7		11	11		7	14		21	21		14
Confl. Bikes (#/hr)						1			1			1
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	0%	1%	0%	2%	2%	1%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	3 4			4			1			1	3
Permitted Phases	4			4			1			1		1
Actuated Green, G (s)	26.9	30.9		19.6	19.6			38.5			38.5	45.8
Effective Green, g (s)	26.9	30.9		19.6	19.6			38.5			38.5	45.8
Actuated g/C Ratio	0.31	0.35		0.22	0.22			0.44			0.44	0.52
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	4.0
Vehicle Extension (s)	2.0			4.0	4.0			2.0			2.0	2.0
Lane Grp Cap (vph)	257	520		198	344			674			678	731
v/s Ratio Prot	c0.06	0.19			0.17							0.03
v/s Ratio Perm	c0.17			0.08				0.35			c0.36	0.17
v/c Ratio	0.75	0.55		0.37	0.74			0.81			0.81	0.38
Uniform Delay, d1	25.9	22.7		28.8	31.6			21.3			21.3	12.4
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	10.4	0.6		1.6	8.9			6.6			6.7	0.1
Delay (s)	36.3	23.3		30.4	40.5			27.8			28.0	12.5
Level of Service	D	C		C	D			C			C	B
Approach Delay (s)		28.6			38.2			27.8			22.8	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	87.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

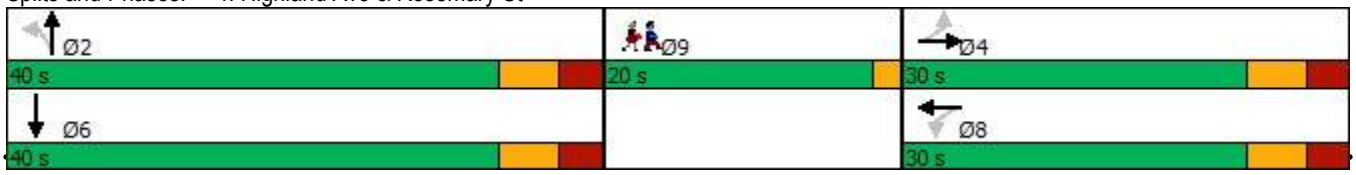
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Future Volume (vph)	45	0	189	93	49	40	94	484	0	0	509	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	9	11	9	12	11	13	12	12	16	12
Storage Length (ft)	0		25	50		0	60		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97		0.99	0.98		0.99				1.00	
Frt		0.889			0.924						0.992	
Flt Protected		0.991		0.950			0.950					
Satd. Flow (prot)	0	1314	0	1570	1399	0	1570	1750	0	0	1899	0
Flt Permitted		0.913		0.423			0.280					
Satd. Flow (perm)	0	1209	0	693	1399	0	460	1750	0	0	1899	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		254			55							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1036			474			1055			1271	
Travel Time (s)		23.5			10.8			24.0			28.9	
Confl. Peds. (#/hr)	6		9	9		6	19		20	20		19
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.83	0.92	0.74	0.93	0.90	0.73	0.79	0.91	0.92	0.92	0.87	0.84
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	54	0	255	100	54	55	119	532	0	0	585	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	309	0	100	109	0	119	532	0	0	622	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)		11			11			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.30	1.19	1.30	1.14	1.19	1.10	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2			2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	20	100		20	100		20	100			100	
Trailing Detector (ft)	0	0		0	0		0	0			0	
Detector 1 Position(ft)	0	0		0	0		0	0			0	
Detector 1 Size(ft)	20	6		20	6		20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0			12.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0			40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%			44.4%	
Maximum Green (s)	23.0	23.0		23.0	23.0		33.0	33.0			33.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		Max	Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.3		14.3	14.3		34.6	34.6			34.6	
Actuated g/C Ratio		0.20		0.20	0.20		0.49	0.49			0.49	
v/c Ratio		0.69		0.70	0.33		0.52	0.61			0.66	
Control Delay		15.4		54.7	17.3		30.9	21.9			22.8	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		15.4		54.7	17.3		30.9	21.9			22.8	
LOS		B		D	B		C	C			C	
Approach Delay		15.4			35.2			23.5			22.8	
Approach LOS		B			D			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 69.9			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 23.2		Intersection LOS: C	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Highland Ave & Rosemary St



Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	27
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	309	100	109	119	532	622
v/c Ratio	0.69	0.70	0.33	0.52	0.61	0.66
Control Delay	15.4	54.7	17.3	30.9	21.9	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	54.7	17.3	30.9	21.9	22.8
Queue Length 50th (ft)	16	33	16	24	114	138
Queue Length 95th (ft)	110	#114	67	#118	#447	#499
Internal Link Dist (ft)	956		394		975	1191
Turn Bay Length (ft)		50		60		
Base Capacity (vph)	583	239	518	227	866	940
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.42	0.21	0.52	0.61	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Future Volume (vph)	45	0	189	93	49	40	94	484	0	0	509	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	9	11	9	12	11	13	12	12	16	12
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		0.97		1.00	0.98		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		0.99	1.00		0.99	1.00			1.00	
Frt		0.89		1.00	0.92		1.00	1.00			0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1306		1554	1398		1560	1750			1900	
Flt Permitted		0.91		0.42	1.00		0.28	1.00			1.00	
Satd. Flow (perm)		1203		693	1398		460	1750			1900	
Peak-hour factor, PHF	0.83	0.92	0.74	0.93	0.90	0.73	0.79	0.91	0.92	0.92	0.87	0.84
Adj. Flow (vph)	54	0	255	100	54	55	119	532	0	0	585	37
RTOR Reduction (vph)	0	203	0	0	44	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	106	0	100	65	0	119	532	0	0	622	0
Confl. Peds. (#/hr)	6		9	9		6	19		20	20		19
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		14.3		14.3	14.3		34.6	34.6			34.6	
Effective Green, g (s)		14.3		14.3	14.3		34.6	34.6			34.6	
Actuated g/C Ratio		0.20		0.20	0.20		0.49	0.49			0.49	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		243		140	283		225	857			931	
v/s Ratio Prot					0.05			0.30			c0.33	
v/s Ratio Perm		0.09		c0.14			0.26					
v/c Ratio		0.44		0.71	0.23		0.53	0.62			0.67	
Uniform Delay, d1		24.6		26.2	23.5		12.4	13.2			13.6	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.3		15.9	0.4		8.6	3.4			3.8	
Delay (s)		25.9		42.1	24.0		21.0	16.6			17.4	
Level of Service		C		D	C		C	B			B	
Approach Delay (s)		25.9			32.6			17.4			17.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

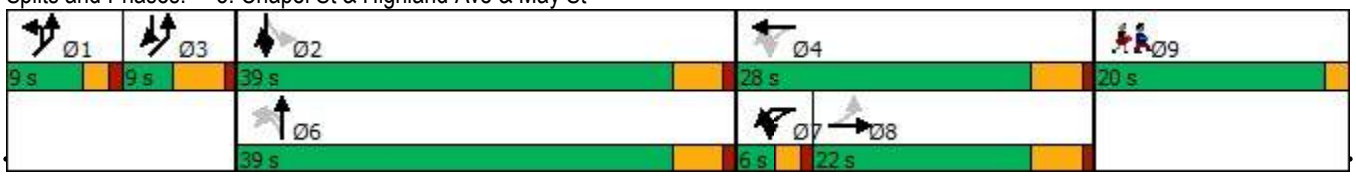
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Future Volume (vph)	61	104	28	23	10	42	129	24	4	19	155	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12	10	12	12	12	16	12
Storage Length (ft)	0		0			0		0		0		0
Storage Lanes	0		0			0		0		0		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98					0.99				0.99	
Frt		0.962					0.985				0.980	
Flt Protected		0.987					0.984				0.995	
Satd. Flow (prot)	0	1629	0	0	0	0	1542	0	0	0	1867	0
Flt Permitted		0.774					0.704				0.947	
Satd. Flow (perm)	0	1275	0	0	0	0	1100	0	0	0	1775	0
Right Turn on Red				No				Yes				No
Satd. Flow (RTOR)							6					
Link Speed (mph)		30					30				30	
Link Distance (ft)		453					923				945	
Travel Time (s)		10.3					21.0				21.5	
Confl. Peds. (#/hr)	4		5	3	3	5		4	3	12		13
Confl. Bikes (#/hr)			1	1				1				2
Peak Hour Factor	0.81	0.81	0.63	0.66	0.56	0.63	0.84	0.79	1.00	0.85	0.76	0.64
Heavy Vehicles (%)	2%	1%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	75	128	44	35	18	67	154	30	4	22	204	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	282	0	0	0	0	269	0	0	0	269	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Left	Left	Right
Median Width(ft)		0					0				0	
Link Offset(ft)		0					0				0	
Crosswalk Width(ft)		16					16				16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2		1	1	2	
Detector Template	Left	Thru			Left	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100		20	20	100	
Trailing Detector (ft)	0	0			0	0	0		0	0	0	
Detector 1 Position(ft)	0	0			0	0	0		0	0	0	
Detector 1 Size(ft)	20	6			20	20	6		20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	

Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Lane Configurations										
Traffic Volume (vph)	41	215	355	162	18	182	19	10		
Future Volume (vph)	41	218	369	162	18	196	19	10		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	10	11	12	10	11	11	11		
Storage Length (ft)	0		120			0	60			
Storage Lanes	0		1			2	0			
Taper Length (ft)	25					25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00			0.95	0.98				
Frt			0.850			0.976				
Flt Protected		0.990			0.950	0.960				
Satd. Flow (prot)	0	1571	1391	0	1516	1501	0	0		
Flt Permitted		0.885			0.950	0.960				
Satd. Flow (perm)	0	1401	1391	0	1444	1492	0	0		
Right Turn on Red				No				Yes		
Satd. Flow (RTOR)						125				
Link Speed (mph)		30				30				
Link Distance (ft)		644				580				
Travel Time (s)		14.6				13.2				
Confl. Peds. (#/hr)	13		3	12	12	4	13	5		
Confl. Bikes (#/hr)			1	1						
Peak Hour Factor	0.62	0.81	0.96	0.86	0.50	0.83	0.85	0.45		
Heavy Vehicles (%)	3%	0%	1%	1%	0%	1%	0%	11%		
Adj. Flow (vph)	66	269	384	188	36	236	22	22		
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	335	572	0	36	280	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Right	Left	Left	Right	Right		
Median Width(ft)		0				21				
Link Offset(ft)		0				0				
Crosswalk Width(ft)		16				16				
Two way Left Turn Lane										
Headway Factor	1.14	1.25	1.19	1.14	1.25	1.19	1.19	1.19		
Turning Speed (mph)	15		9	9	15	15	9	9		
Number of Detectors	1	2	1		1	1				
Detector Template	Left	Thru	Right		Left	Left				
Leading Detector (ft)	20	100	20		20	20				
Trailing Detector (ft)	0	0	0		0	0				
Detector 1 Position(ft)	0	0	0		0	0				
Detector 1 Size(ft)	20	6	20		20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)		94								
Detector 2 Size(ft)		6								
Detector 2 Type		Cl+Ex								

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Detector Phase	8	8			7	7	4		6	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0			2.0	2.0	6.0		6.0	6.0	6.0	
Minimum Split (s)	11.0	11.0			6.0	6.0	11.0		11.0	11.0	11.0	
Total Split (s)	22.0	22.0			6.0	6.0	28.0		39.0	39.0	39.0	
Total Split (%)	21.0%	21.0%			5.7%	5.7%	26.7%		37.1%	37.1%	37.1%	
Maximum Green (s)	17.0	17.0			3.0	3.0	23.0		34.0	34.0	34.0	
Yellow Time (s)	4.0	4.0			2.0	2.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0				0.0	
Total Lost Time (s)		5.0					5.0				5.0	
Lead/Lag	Lag	Lag			Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None			None	None	None		Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		23.2					23.2				34.4	
Actuated g/C Ratio		0.25					0.25				0.37	
v/c Ratio		0.88					0.96				0.41	
Control Delay		65.5					82.8				26.1	
Queue Delay		0.0					0.0				0.0	
Total Delay		65.5					82.8				26.1	
LOS		E					F				C	
Approach Delay		65.5					82.8				26.1	
Approach LOS		E					F				C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 93			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 47.2		Intersection LOS: D	
Intersection Capacity Utilization 79.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Chapel St & Highland Ave & May St



Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Detector 2 Channel										
Detector 2 Extend (s)		0.0								
Turn Type	Perm	NA	custom		Prot	Prot				
Protected Phases		2	2 3		1	1 3			3	9
Permitted Phases	2									
Detector Phase	2	2	2 3		1	1 3				
Switch Phase										
Minimum Initial (s)	6.0	6.0			1.0				4.0	5.0
Minimum Split (s)	11.0	11.0			6.0				9.0	20.0
Total Split (s)	39.0	39.0			9.0				9.0	20.0
Total Split (%)	37.1%	37.1%			8.6%				9%	19%
Maximum Green (s)	34.0	34.0			6.0				4.0	18.0
Yellow Time (s)	4.0	4.0			2.0				4.0	2.0
All-Red Time (s)	1.0	1.0			1.0				1.0	0.0
Lost Time Adjust (s)		0.0			0.0					
Total Lost Time (s)		5.0			3.0					
Lead/Lag					Lead				Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0
Recall Mode	Min	Min			None				None	None
Walk Time (s)										7.0
Flash Dont Walk (s)										11.0
Pedestrian Calls (#/hr)										18
Act Effct Green (s)		34.4	43.5		6.1	15.2				
Actuated g/C Ratio		0.37	0.47		0.07	0.16				
v/c Ratio		0.65	0.88		0.36	0.80				
Control Delay		33.6	42.0		55.8	40.6				
Queue Delay		0.0	0.0		0.0	0.0				
Total Delay		33.6	42.0		55.8	40.6				
LOS		C	D		E	D				
Approach Delay		38.9				42.4				
Approach LOS		D				D				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR	NEL2	NEL
Lane Group Flow (vph)	282	269	269	335	572	36	280
v/c Ratio	0.88	0.96	0.41	0.65	0.88	0.36	0.80
Control Delay	65.5	82.8	26.1	33.6	42.0	55.8	40.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	82.8	26.1	33.6	42.0	55.8	40.6
Queue Length 50th (ft)	141	135	99	138	243	19	78
Queue Length 95th (ft)	#309	#331	180	265	#614	31	#211
Internal Link Dist (ft)	373	843	865	564			500
Turn Bay Length (ft)					120		
Base Capacity (vph)	319	279	656	517	649	99	349
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.96	0.41	0.65	0.88	0.36	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Future Volume (vph)	61	104	28	23	10	42	129	24	4	19	155	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12	10	12	12	12	16	12
Total Lost time (s)		5.0					5.0				5.0	
Lane Util. Factor		1.00					1.00				1.00	
Frpb, ped/bikes		0.99					1.00				0.99	
Flpb, ped/bikes		1.00					1.00				1.00	
Frt		0.96					0.98				0.98	
Flt Protected		0.99					0.98				1.00	
Satd. Flow (prot)		1631					1538				1867	
Flt Permitted		0.77					0.70				0.95	
Satd. Flow (perm)		1280					1101				1776	
Peak-hour factor, PHF	0.81	0.81	0.63	0.66	0.56	0.63	0.84	0.79	1.00	0.85	0.76	0.64
Adj. Flow (vph)	75	128	44	35	18	67	154	30	4	22	204	39
RTOR Reduction (vph)	0	0	0	0	0	0	5	0	0	0	0	0
Lane Group Flow (vph)	0	282	0	0	0	0	264	0	0	0	269	0
Confl. Peds. (#/hr)	4		5	3	3	5		4	3	12		13
Confl. Bikes (#/hr)			1	1				1				2
Heavy Vehicles (%)	2%	1%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Actuated Green, G (s)		23.2					23.2				34.4	
Effective Green, g (s)		23.2					23.2				34.4	
Actuated g/C Ratio		0.25					0.25				0.37	
Clearance Time (s)		5.0					5.0				5.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		315					271				649	
v/s Ratio Prot												
v/s Ratio Perm		0.22					c0.24				0.15	
v/c Ratio		0.90					0.98				0.41	
Uniform Delay, d1		34.3					35.2				22.3	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		26.0					47.6				0.4	
Delay (s)		60.2					82.7				22.8	
Level of Service		E					F				C	
Approach Delay (s)		60.2					82.7				22.8	
Approach LOS		E					F				C	

Intersection Summary			
HCM 2000 Control Delay	46.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	23.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	41	215	355	162	18	182	19	10
Future Volume (vph)	41	218	369	162	18	196	19	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	10	11	11	11
Total Lost time (s)		5.0	5.0		3.0	3.0		
Lane Util. Factor		1.00	1.00		1.00	1.00		
Frpb, ped/bikes		1.00	1.00		1.00	0.99		
Flpb, ped/bikes		1.00	1.00		1.00	1.00		
Frt		1.00	0.85		1.00	0.98		
Flt Protected		0.99	1.00		0.95	0.96		
Satd. Flow (prot)		1568	1391		1516	1503		
Flt Permitted		0.89	1.00		0.95	0.96		
Satd. Flow (perm)		1402	1391		1516	1503		
Peak-hour factor, PHF	0.62	0.81	0.96	0.86	0.50	0.83	0.85	0.45
Adj. Flow (vph)	66	269	384	188	36	236	22	22
RTOR Reduction (vph)	0	0	0	0	0	108	0	0
Lane Group Flow (vph)	0	335	572	0	36	172	0	0
Confl. Peds. (#/hr)	13		3	12	12	4	13	5
Confl. Bikes (#/hr)			1	1				
Heavy Vehicles (%)	3%	0%	1%	1%	0%	1%	0%	11%
Turn Type	Perm	NA	custom		Prot	Prot		
Protected Phases		2	2 3		1	1 3		
Permitted Phases	2							
Actuated Green, G (s)		34.4	43.4		6.1	13.1		
Effective Green, g (s)		34.4	43.4		6.1	13.1		
Actuated g/C Ratio		0.37	0.46		0.06	0.14		
Clearance Time (s)		5.0			3.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		512	641		98	209		
v/s Ratio Prot			c0.41		0.02	c0.11		
v/s Ratio Perm		0.24						
v/c Ratio		0.65	0.89		0.37	0.82		
Uniform Delay, d1		24.9	23.2		42.2	39.4		
Progression Factor		1.00	1.00		1.00	1.00		
Incremental Delay, d2		3.0	14.7		2.3	22.5		
Delay (s)		27.9	37.9		44.5	61.9		
Level of Service		C	D		D	E		
Approach Delay (s)		34.2				59.9		
Approach LOS		C				E		

Intersection Summary

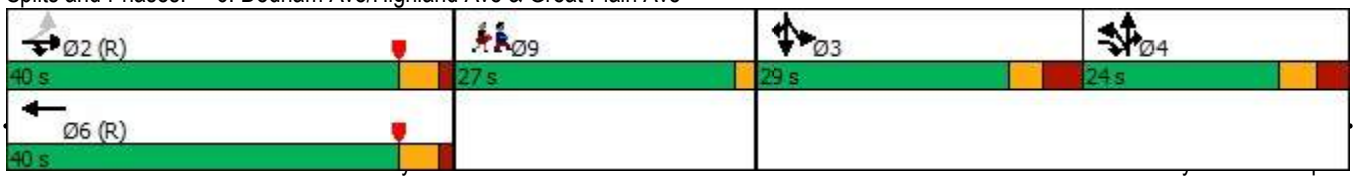
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Future Volume (vph)	34	264	290	0	320	74	192	106	72	80	189	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	10	10	10	10	10	10	10	10	12
Storage Length (ft)	0		0	0		0	0		35	0		90
Storage Lanes	0		1	0		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		0.99				0.99	
Frt			0.850		0.972				0.850			0.850
Flt Protected		0.993					0.950				0.984	
Satd. Flow (prot)	0	1569	1391	0	2887	0	1486	1596	1357	0	1560	1454
Flt Permitted		0.787					0.950				0.984	
Satd. Flow (perm)	0	1240	1391	0	2887	0	1469	1596	1357	0	1544	1454
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									95			95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		238			434			312			945	
Travel Time (s)		5.4			9.9			7.1			21.5	
Confl. Peds. (#/hr)	27		39	39		27	9		14	14		9
Confl. Bikes (#/hr)			3			2			1			
Peak Hour Factor	0.63	0.82	0.93	0.25	0.85	0.87	0.86	0.77	0.80	0.74	0.84	0.84
Heavy Vehicles (%)	7%	0%	1%	0%	1%	0%	2%	0%	0%	0%	1%	0%
Adj. Flow (vph)	54	322	312	0	376	85	223	138	90	108	225	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	376	312	0	461	0	223	138	90	0	333	76
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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1		2		1	2	1	1	2	1
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20		100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20		6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Detector Phase	2	2	2 4		6		4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0			10.0		11.5	11.5	11.5	11.5	11.5	11.5
Total Split (s)	40.0	40.0			40.0		24.0	24.0	24.0	29.0	29.0	29.0
Total Split (%)	33.3%	33.3%			33.3%		20.0%	20.0%	20.0%	24.2%	24.2%	24.2%
Maximum Green (s)	35.0	35.0			35.0		17.5	17.5	17.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5			1.5		3.0	3.0	3.0	3.5	3.5	3.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Lead/Lag							Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Min	C-Min			C-Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		35.0	60.5		35.0		19.0	19.0	19.0		26.4	26.4
Actuated g/C Ratio		0.29	0.50		0.29		0.16	0.16	0.16		0.22	0.22
v/c Ratio		1.04	0.45		0.55		0.95	0.55	0.31		0.97	0.19
Control Delay		87.3	16.6		38.7		98.9	56.6	11.2		90.2	6.2
Queue Delay		21.1	2.3		11.5		0.0	0.0	0.0		0.0	0.0
Total Delay		108.4	18.9		50.3		98.9	56.6	11.2		90.2	6.2
LOS		F	B		D		F	E	B		F	A
Approach Delay		67.8			50.3			68.4			74.6	
Approach LOS		E			D			E			E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay: 65.3		Intersection LOS: E	
Intersection Capacity Utilization 77.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Dedham Ave/Highland Ave & Great Plain Ave



Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	44
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	376	312	461	223	138	90	333	76
v/c Ratio	1.04	0.45	0.55	0.95	0.55	0.31	0.97	0.19
Control Delay	87.3	16.6	38.7	98.9	56.6	11.2	90.2	6.2
Queue Delay	21.1	2.3	11.5	0.0	0.0	0.0	0.0	0.0
Total Delay	108.4	18.9	50.3	98.9	56.6	11.2	90.2	6.2
Queue Length 50th (ft)	~318	79	158	~185	101	0	~301	0
Queue Length 95th (ft)	#424	172	198	#322	143	31	#436	23
Internal Link Dist (ft)	158		354		232		865	
Turn Bay Length (ft)						35		90
Base Capacity (vph)	361	700	843	234	251	294	343	393
Starvation Cap Reductn	22	261	0	0	0	0	0	0
Spillback Cap Reductn	0	0	354	0	0	0	0	11
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.11	0.71	0.94	0.95	0.55	0.31	0.97	0.20

Intersection Summary

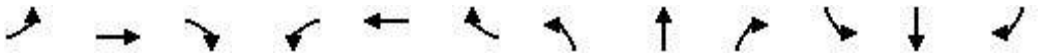
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Future Volume (vph)	34	264	290	0	320	74	192	106	72	80	189	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	11	10	10	10	10	10	10	10	10	12
Total Lost time (s)		5.0	5.0		5.0		6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00		1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)		1564	1391		2888		1486	1596	1357		1560	1454
Flt Permitted		0.79	1.00		1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (perm)		1239	1391		2888		1486	1596	1357		1560	1454
Peak-hour factor, PHF	0.63	0.82	0.93	0.25	0.85	0.87	0.86	0.77	0.80	0.74	0.84	0.84
Adj. Flow (vph)	54	322	312	0	376	85	223	138	90	108	225	76
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	76	0	0	59
Lane Group Flow (vph)	0	376	312	0	461	0	223	138	14	0	333	17
Confl. Peds. (#/hr)	27		39	39		27	9		14	14		9
Confl. Bikes (#/hr)			3			2			1			
Heavy Vehicles (%)	7%	0%	1%	0%	1%	0%	2%	0%	0%	0%	1%	0%
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Actuated Green, G (s)		34.6	60.1		34.6		19.0	19.0	19.0		26.4	26.4
Effective Green, g (s)		34.6	53.6		34.6		19.0	19.0	19.0		26.4	26.4
Actuated g/C Ratio		0.29	0.45		0.29		0.16	0.16	0.16		0.22	0.22
Clearance Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		2.0			2.0		2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		357	621		832		235	252	214		343	319
v/s Ratio Prot			0.22		0.16		c0.15	0.09	0.01		c0.21	0.01
v/s Ratio Perm		c0.30										
v/c Ratio		1.05	0.50		0.55		0.95	0.55	0.07		0.97	0.05
Uniform Delay, d1		42.7	23.7		36.2		50.0	46.5	43.0		46.4	36.9
Progression Factor		0.72	0.74		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		59.3	0.2		2.7		43.7	1.3	0.0		40.5	0.0
Delay (s)		89.9	17.7		38.8		93.8	47.8	43.0		86.9	37.0
Level of Service		F	B		D		F	D	D		F	D
Approach Delay (s)		57.1			38.8			69.6			77.6	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	59.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



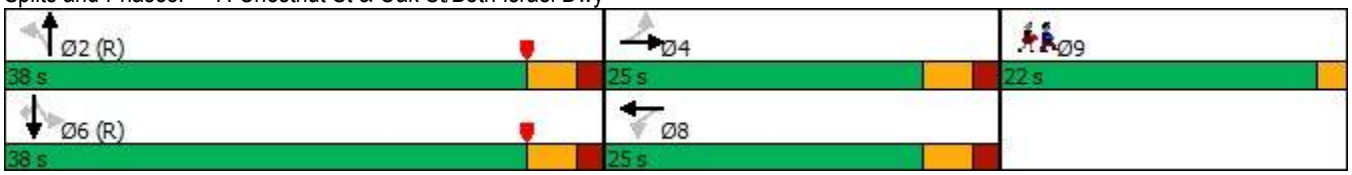
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Future Volume (vph)	57	1	128	6	2	9	102	377	12	4	509	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	8	8	11	11	11	9	9	12	12	9	9
Storage Length (ft)	0		0	0		0	80		0	0		150
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.907			0.929			0.995				0.850
Flt Protected		0.985			0.982		0.950					
Satd. Flow (prot)	0	1298	0	0	1478	0	1433	1501	0	0	1509	1283
Flt Permitted		0.899			0.899		0.325				0.998	
Satd. Flow (perm)	0	1185	0	0	1353	0	490	1501	0	0	1506	1283
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								2				74
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			314			227			439	
Travel Time (s)		13.8			7.1			5.2			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	1	139	7	2	10	111	410	13	4	553	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	202	0	0	19	0	111	423	0	0	557	85
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			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.19	1.19	1.19	1.30	1.30	1.14	1.14	1.30	1.30
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	25.0	25.0		25.0	25.0		38.0	38.0		38.0	38.0	38.0
Total Split (%)	29.4%	29.4%		29.4%	29.4%		44.7%	44.7%		44.7%	44.7%	44.7%
Maximum Green (s)	20.0	20.0		20.0	20.0		33.0	33.0		33.0	33.0	33.0
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		20.0			20.0		46.2	46.2			46.2	46.2
Actuated g/C Ratio		0.24			0.24		0.54	0.54			0.54	0.54
v/c Ratio		0.73			0.06		0.42	0.52			0.68	0.12
Control Delay		47.1			26.0		23.1	18.7			28.4	13.7
Queue Delay		0.0			0.0		0.0	0.0			0.6	0.0
Total Delay		47.1			26.0		23.1	18.7			29.1	13.7
LOS		D			C		C	B			C	B
Approach Delay		47.1			26.0			19.6			27.0	
Approach LOS		D			C			B			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 27.1		Intersection LOS: C	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Chestnut St & Oak St/Beth Israel Dwy



Lane Group	Ø9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	22.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

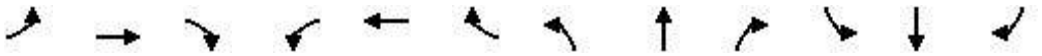
Lane Group	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	202	19	111	423	557	85
v/c Ratio	0.73	0.06	0.42	0.52	0.68	0.12
Control Delay	47.1	26.0	23.1	18.7	28.4	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.6	0.0
Total Delay	47.1	26.0	23.1	18.7	29.1	13.7
Queue Length 50th (ft)	100	8	24	98	83	0
Queue Length 95th (ft)	#202	25	#120	300	m#435	m54
Internal Link Dist (ft)	526	234		147	359	
Turn Bay Length (ft)			80			150
Base Capacity (vph)	278	318	266	816	818	731
Starvation Cap Reductn	0	0	0	0	68	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.06	0.42	0.52	0.74	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Future Volume (vph)	57	1	128	6	2	9	102	377	12	4	509	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	11	11	11	9	9	12	12	9	9
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	1.00
Frt		0.91			0.93		1.00	1.00			1.00	0.85
Flt Protected		0.98			0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1298			1478		1433	1502			1508	1282
Flt Permitted		0.90			0.90		0.32	1.00			1.00	1.00
Satd. Flow (perm)		1185			1353		490	1502			1505	1282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	1	139	7	2	10	111	410	13	4	553	85
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	35
Lane Group Flow (vph)	0	202	0	0	19	0	111	422	0	0	557	50
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		20.0			20.0		45.0	45.0			45.0	45.0
Effective Green, g (s)		20.0			20.0		45.0	45.0			45.0	45.0
Actuated g/C Ratio		0.24			0.24		0.53	0.53			0.53	0.53
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		278			318		259	795			796	678
v/s Ratio Prot								0.28				
v/s Ratio Perm		c0.17			0.01		0.23				c0.37	0.04
v/c Ratio		0.73			0.06		0.43	0.53			0.70	0.07
Uniform Delay, d1		30.0			25.2		12.2	13.1			15.0	9.8
Progression Factor		1.00			1.00		1.00	1.00			1.36	2.53
Incremental Delay, d2		15.3			0.4		5.1	2.5			3.9	0.2
Delay (s)		45.3			25.6		17.3	15.6			24.2	25.0
Level of Service		D			C		B	B			C	C
Approach Delay (s)		45.3			25.6			16.0			24.3	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



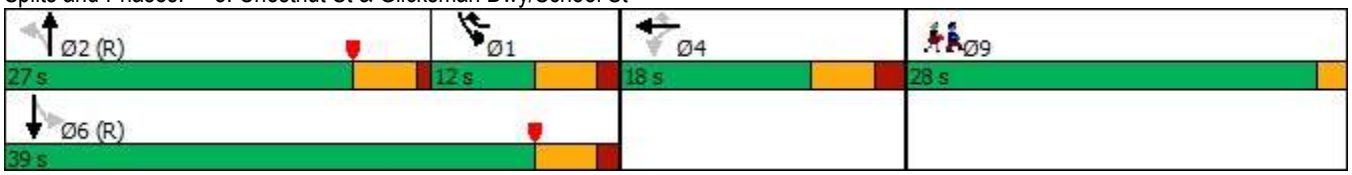
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Future Volume (vph)	0	0	0	179	6	70	6	356	215	63	451	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	9	13	9	12	12	9	12	12
Storage Length (ft)	0		0	0		150	40		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			70			70			100		
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						0.850		0.943			0.999	
Flt Protected					0.954		0.950			0.950		
Satd. Flow (prot)	0	0	0	0	1439	1473	1433	1581	0	1433	1675	0
Flt Permitted					0.954		0.384			0.243		
Satd. Flow (perm)	0	0	0	0	1439	1473	579	1581	0	367	1675	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						76		35				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		162			420			439			782	
Travel Time (s)		3.7			9.5			10.0			17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	195	7	76	7	387	234	68	490	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	202	76	7	621	0	68	493	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.30	1.30	1.10	1.30	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2		1	2	
Detector Template				Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)				20	100	20	20	100		20	100	
Trailing Detector (ft)				0	0	0	0	0		0	0	
Detector 1 Position(ft)				0	0	0	0	0		0	0	
Detector 1 Size(ft)				20	6	20	20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				4		4	2			6		
Detector Phase				4	4	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)				6.0	6.0	6.0	2.0	2.0		6.0	10.0	
Minimum Split (s)				12.0	12.0	11.5	7.0	7.0		11.5	15.5	
Total Split (s)				18.0	18.0	12.0	27.0	27.0		12.0	39.0	
Total Split (%)				21.2%	21.2%	14.1%	31.8%	31.8%		14.1%	45.9%	
Maximum Green (s)				12.0	12.0	6.5	22.0	22.0		6.5	33.5	
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)				2.0	2.0	1.5	1.0	1.0		1.5	1.5	
Lost Time Adjust (s)					0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lead/Lag						Lag	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode				None	None	None	C-Min	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					12.0	21.9	41.4	41.4		51.5	50.3	
Actuated g/C Ratio					0.14	0.26	0.49	0.49		0.61	0.59	
v/c Ratio					1.00	0.17	0.02	0.79		0.23	0.50	
Control Delay					101.8	7.0	12.5	28.3		18.9	16.7	
Queue Delay					35.0	0.0	0.0	0.0		0.0	0.1	
Total Delay					136.7	7.0	12.5	28.3		18.9	16.8	
LOS					F	A	B	C		B	B	
Approach Delay					101.3			28.1			17.0	
Approach LOS					F			C			B	

Intersection Summary	
Area Type:	CBD
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 9 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 37.7	Intersection LOS: D
Intersection Capacity Utilization 64.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: Chestnut St & Glicksman Dwy/School St



Lane Group	Ø9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	33%
Maximum Green (s)	26.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	202	76	7	621	68	493
v/c Ratio	1.00	0.17	0.02	0.79	0.23	0.50
Control Delay	101.8	7.0	12.5	28.3	18.9	16.7
Queue Delay	35.0	0.0	0.0	0.0	0.0	0.1
Total Delay	136.7	7.0	12.5	28.3	18.9	16.8
Queue Length 50th (ft)	109	0	1	219	9	85
Queue Length 95th (ft)	#245	30	m4	#632	49	343
Internal Link Dist (ft)	340			359		702
Turn Bay Length (ft)		150	40		115	
Base Capacity (vph)	203	403	281	788	305	991
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	36	0	0	0	0	32
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.21	0.19	0.02	0.79	0.22	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Future Volume (vph)	0	0	0	179	6	70	6	356	215	63	451	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	9	9	13	9	12	12	9	12	12
Total Lost time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frt					1.00	0.85	1.00	0.94		1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1439	1472	1433	1582		1433	1675	
Flt Permitted					0.95	1.00	0.38	1.00		0.24	1.00	
Satd. Flow (perm)					1439	1472	579	1582		366	1675	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	195	7	76	7	387	234	68	490	3
RTOR Reduction (vph)	0	0	0	0	0	61	0	19	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	202	15	7	602	0	68	493	0
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Actuated Green, G (s)					12.0	17.0	39.1	39.1		49.1	49.1	
Effective Green, g (s)					12.0	17.0	39.1	39.1		49.1	49.1	
Actuated g/C Ratio					0.14	0.20	0.46	0.46		0.58	0.58	
Clearance Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Vehicle Extension (s)					3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)					203	389	266	727		274	967	
v/s Ratio Prot						0.00		c0.38		0.01	c0.29	
v/s Ratio Perm					0.14	0.01	0.01			0.13		
v/c Ratio					1.00	0.04	0.03	0.83		0.25	0.51	
Uniform Delay, d1					36.5	27.4	12.5	20.0		19.9	10.7	
Progression Factor					1.00	1.00	0.56	0.65		1.00	1.00	
Incremental Delay, d2					61.4	0.0	0.2	9.8		0.5	1.9	
Delay (s)					97.9	27.5	7.2	22.9		20.4	12.7	
Level of Service					F	C	A	C		C	B	
Approach Delay (s)		0.0			78.6			22.7			13.6	
Approach LOS		A			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	89	594	589	27	14	217
Future Volume (vph)	89	601	594	27	14	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.989		0.878	
Flt Protected		0.992			0.995	
Satd. Flow (prot)	0	2978	2972	0	1433	0
Flt Permitted		0.992			0.995	
Satd. Flow (perm)	0	2978	2972	0	1433	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		180	394		416	
Travel Time (s)		4.1	9.0		9.5	
Confl. Peds. (#/hr)	23			23	1	23
Peak Hour Factor	0.79	0.98	0.92	0.52	0.54	0.90
Heavy Vehicles (%)	1%	1%	1%	0%	8%	0%
Adj. Flow (vph)	113	613	646	52	26	241
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	726	698	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.25	1.25	1.25	1.19	1.19
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	594	589	27	14	217
Future Vol, veh/h	89	601	594	27	14	217
Conflicting Peds, #/hr	23	0	0	23	1	23
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	79	98	92	52	54	90
Heavy Vehicles, %	1	1	1	0	8	0
Mvmt Flow	113	613	646	52	26	241

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	721	0	-	0	1229	395
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	534	-
Critical Hdwy	4.12	-	-	-	6.96	6.9
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	2.21	-	-	-	3.58	3.3
Pot Cap-1 Maneuver	883	-	-	-	162	610
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	535	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	865	-	-	-	125	587
Mov Cap-2 Maneuver	-	-	-	-	125	-
Stage 1	-	-	-	-	347	-
Stage 2	-	-	-	-	524	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	25.9
HCM LOS			D

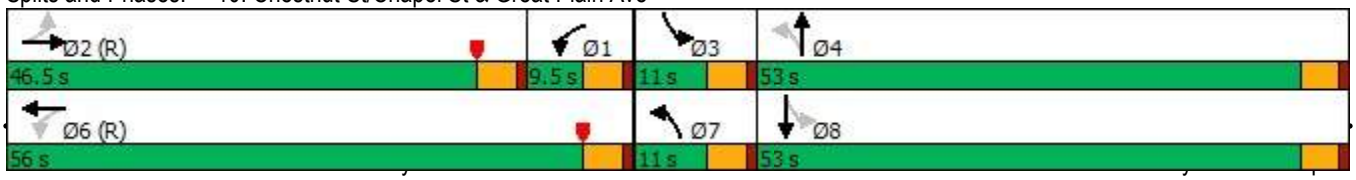
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	865	-	-	-	432
HCM Lane V/C Ratio	0.13	-	-	-	0.618
HCM Control Delay (s)	9.8	0.7	-	-	25.9
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	4.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	501	68	104	442	29	95	178	62	24	305	78
Future Volume (vph)	44	502	69	106	442	29	96	187	63	24	316	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	175		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.99		0.99	0.99		0.99	0.99	
Frt		0.982			0.991			0.963			0.965	
Flt Protected		0.996			0.991		0.950			0.950		
Satd. Flow (prot)	0	2885	0	0	2936	0	1501	1569	0	1516	1565	0
Flt Permitted		0.817			0.633		0.210			0.518		
Satd. Flow (perm)	0	2364	0	0	1863	0	328	1569	0	820	1565	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			238			782			424	
Travel Time (s)		9.0			5.4			17.8			9.6	
Confl. Peds. (#/hr)	18		48	48		18	29		13	13		29
Confl. Bikes (#/hr)												4
Peak Hour Factor	0.80	0.96	0.86	0.84	0.88	0.72	0.80	0.84	0.88	0.69	0.87	0.74
Heavy Vehicles (%)	0%	1%	2%	1%	1%	4%	1%	1%	0%	0%	1%	0%
Adj. Flow (vph)	55	523	80	126	502	40	120	223	72	35	363	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	658	0	0	668	0	120	295	0	35	472	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.19	1.19	1.25	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	39.0	39.0		9.5	50.0		11.0	34.5		11.0	34.5	
Total Split (s)	46.5	46.5		9.5	56.0		11.0	53.0		11.0	53.0	
Total Split (%)	38.8%	38.8%		7.9%	46.7%		9.2%	44.2%		9.2%	44.2%	
Maximum Green (s)	42.0	42.0		5.0	51.5		6.5	48.5		6.5	48.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lead		Lag			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0			8.0			8.0	
Flash Dont Walk (s)	16.0	16.0			16.0			22.0			22.0	
Pedestrian Calls (#/hr)	33	33			33			21			21	
Act Effct Green (s)		56.2			56.2		53.0	48.1		47.6	41.3	
Actuated g/C Ratio		0.47			0.47		0.44	0.40		0.40	0.34	
v/c Ratio		0.59			0.77		0.52	0.47		0.10	0.88	
Control Delay		27.4			20.9		27.5	29.5		17.1	54.5	
Queue Delay		0.2			9.2		0.0	0.5		0.1	0.0	
Total Delay		27.6			30.0		27.5	30.0		17.2	54.5	
LOS		C			C		C	C		B	D	
Approach Delay		27.6			30.0			29.3			52.0	
Approach LOS		C			C			C			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 11 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 34.1		Intersection LOS: C	
Intersection Capacity Utilization 84.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 10: Chestnut St/Chapel St & Great Plain Ave



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	658	668	120	295	35	472
v/c Ratio	0.59	0.77	0.52	0.47	0.10	0.88
Control Delay	27.4	20.9	27.5	29.5	17.1	54.5
Queue Delay	0.2	9.2	0.0	0.5	0.1	0.0
Total Delay	27.6	30.0	27.5	30.0	17.2	54.5
Queue Length 50th (ft)	207	279	50	167	14	334
Queue Length 95th (ft)	276	m333	75	226	24	421
Internal Link Dist (ft)	314	158		702		344
Turn Bay Length (ft)			175		100	
Base Capacity (vph)	1107	872	233	648	365	632
Starvation Cap Reductn	0	175	0	0	0	0
Spillback Cap Reductn	79	0	0	105	62	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.96	0.52	0.54	0.12	0.75

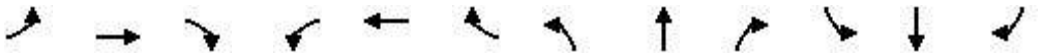
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	501	68	104	442	29	95	178	62	24	305	78
Future Volume (vph)	44	502	69	106	442	29	96	187	63	24	316	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	11	11	10	11	11
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.96		1.00	0.97	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2881			2914		1499	1570		1509	1566	
Flt Permitted		0.82			0.63		0.21	1.00		0.52	1.00	
Satd. Flow (perm)		2364			1862		331	1570		823	1566	
Peak-hour factor, PHF	0.80	0.96	0.86	0.84	0.88	0.72	0.80	0.84	0.88	0.69	0.87	0.74
Adj. Flow (vph)	55	523	80	126	502	40	120	223	72	35	363	109
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	658	0	0	668	0	120	295	0	35	472	0
Confl. Peds. (#/hr)	18		48	48		18	29		13	13		29
Confl. Bikes (#/hr)												4
Heavy Vehicles (%)	0%	1%	2%	1%	1%	4%	1%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		54.4			54.4		56.6	48.1		47.1	43.1	
Effective Green, g (s)		54.4			54.4		56.6	48.1		47.1	43.1	
Actuated g/C Ratio		0.45			0.45		0.47	0.40		0.39	0.36	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1071			844		243	629		345	562	
v/s Ratio Prot							c0.04	0.19		0.00	c0.30	
v/s Ratio Perm		0.28			c0.36		0.20			0.04		
v/c Ratio		0.61			0.79		0.49	0.47		0.10	0.84	
Uniform Delay, d1		24.9			28.0		21.9	26.5		22.8	35.3	
Progression Factor		1.00			0.54		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.6			4.0		1.6	0.6		0.1	10.7	
Delay (s)		27.5			19.1		23.5	27.1		22.9	45.9	
Level of Service		C			B		C	C		C	D	
Approach Delay (s)		27.5			19.1			26.0			44.3	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	109	9	209	120	7	14	4	105	7	0	2
Future Volume (vph)	3	109	9	209	120	7	14	4	105	7	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	14	12	12	13	12	12	10	12
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
Ped Bike Factor												
Frt		0.987			0.997			0.898			0.958	
Flt Protected		0.997			0.969			0.992			0.967	
Satd. Flow (prot)	0	1724	0	0	1751	0	0	1533	0	0	1479	0
Flt Permitted		0.997			0.969			0.992			0.967	
Satd. Flow (perm)	0	1724	0	0	1751	0	0	1533	0	0	1479	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		521			453			566			491	
Travel Time (s)		11.8			10.3			12.9			11.2	
Confl. Peds. (#/hr)	6		4	4		6	5		3	3		5
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.38	0.95	0.67	0.80	0.85	0.75	0.54	0.33	0.88	0.38	0.92	0.25
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	25%	1%	0%	0%	0%
Adj. Flow (vph)	8	115	13	261	141	9	26	12	119	18	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	136	0	0	411	0	0	157	0	0	26	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	1.14	1.10	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	109	9	209	120	7	14	4	105	7	0	2
Future Vol, veh/h	3	109	9	209	120	7	14	4	105	7	0	2
Conflicting Peds, #/hr	6	0	4	4	0	6	5	0	3	3	0	5
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	38	95	67	80	85	75	54	33	88	38	92	25
Heavy Vehicles, %	0	1	0	1	0	0	0	25	1	0	0	0
Mvmt Flow	8	115	13	261	141	9	26	12	119	18	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	156	0	0	132	0	0	819	820	129	880	822	157
Stage 1	-	-	-	-	-	-	142	142	-	674	674	-
Stage 2	-	-	-	-	-	-	677	678	-	206	148	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.1	6.75	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.75	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.75	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.5	4.225	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1436	-	-	1459	-	-	297	285	924	270	311	894
Stage 1	-	-	-	-	-	-	866	737	-	448	457	-
Stage 2	-	-	-	-	-	-	446	418	-	801	779	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1429	-	-	1453	-	-	247	226	917	189	246	885
Mov Cap-2 Maneuver	-	-	-	-	-	-	247	226	-	189	246	-
Stage 1	-	-	-	-	-	-	857	730	-	443	366	-
Stage 2	-	-	-	-	-	-	354	334	-	679	771	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	5.1	14.3	21.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	545	1429	-	-	1453	-	-	248
HCM Lane V/C Ratio	0.289	0.006	-	-	0.18	-	-	0.107
HCM Control Delay (s)	14.3	7.5	0	-	8	0	-	21.2
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.7	-	-	0.4

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	74	93	94	60	88	189
Future Volume (vph)	74	93	94	65	91	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.936		0.917	
Flt Protected		0.981			0.981	
Satd. Flow (prot)	0	1678	1423	0	1631	0
Flt Permitted		0.981			0.981	
Satd. Flow (perm)	0	1678	1423	0	1631	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		525	1036		802	
Travel Time (s)		11.9	23.5		18.2	
Confl. Peds. (#/hr)	12			12	2	1
Peak Hour Factor	0.84	0.66	0.79	0.61	0.65	0.84
Heavy Vehicles (%)	0%	0%	4%	6%	0%	1%
Adj. Flow (vph)	88	141	119	107	140	225
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	229	226	0	365	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.25	1.25	1.05	1.05
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

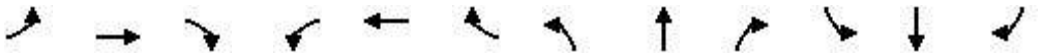
Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	93	94	60	88	189
Future Vol, veh/h	74	93	94	65	91	189
Conflicting Peds, #/hr	12	0	0	12	2	1
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	84	66	79	61	65	84
Heavy Vehicles, %	0	0	4	6	0	1
Mvmt Flow	88	141	119	107	140	225

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	238	0	-	0	504	186
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	319	-
Critical Hdwy	4.1	-	-	-	6.4	6.21
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.309
Pot Cap-1 Maneuver	1341	-	-	-	531	859
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1323	-	-	-	480	847
Mov Cap-2 Maneuver	-	-	-	-	480	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	731	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	17.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1323	-	-	-	655
HCM Lane V/C Ratio	0.067	-	-	-	0.557
HCM Control Delay (s)	7.9	0	-	-	17.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	3.4

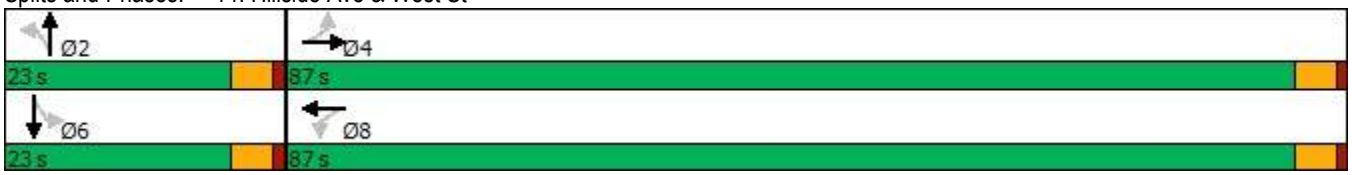


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	267	20	137	312	13	13	63	86	13	92	34
Future Volume (vph)	104	267	20	148	312	13	13	63	93	13	93	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	12	12	14	12	12	13	12	12	13	12
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
Ped Bike Factor		0.99			1.00			0.99			0.99	
Frt		0.992			0.995			0.933			0.963	
Flt Protected		0.975			0.986			0.995			0.994	
Satd. Flow (prot)	0	1478	0	0	1786	0	0	1601	0	0	1677	0
Flt Permitted		0.593			0.663			0.912			0.851	
Satd. Flow (perm)	0	893	0	0	1199	0	0	1467	0	0	1435	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			6			39			15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		459			455			883			496	
Travel Time (s)		10.4			10.3			20.1			11.3	
Confl. Peds. (#/hr)	11		8	8		11	3		4	4		3
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.26	0.77	0.45	0.97	0.85	0.60	0.60	0.75	0.89	0.60	0.87	0.71
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%
Adj. Flow (vph)	400	347	44	153	367	22	22	84	104	22	107	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	791	0	0	542	0	0	210	0	0	177	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	1.14	1.30	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	87.0	87.0		87.0	87.0		23.0	23.0		23.0	23.0	
Total Split (%)	79.1%	79.1%		79.1%	79.1%		20.9%	20.9%		20.9%	20.9%	
Maximum Green (s)	82.5	82.5		82.5	82.5		18.5	18.5		18.5	18.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	20	20		20	20		20	20		20	20	
Act Effct Green (s)		82.6			82.6			16.1			16.1	
Actuated g/C Ratio		0.77			0.77			0.15			0.15	
v/c Ratio		1.15			0.59			0.83			0.78	
Control Delay		102.1			8.9			62.9			63.8	
Queue Delay		0.0			1.5			0.0			0.0	
Total Delay		102.1			10.3			62.9			63.8	
LOS		F			B			E			E	
Approach Delay		102.1			10.3			62.9			63.8	
Approach LOS		F			B			E			E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 107.7			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.15			
Intersection Signal Delay: 64.5		Intersection LOS: E	
Intersection Capacity Utilization 59.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 14: Hillside Ave & West St

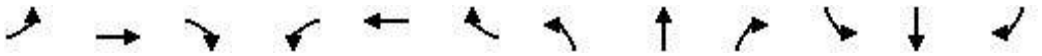


Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	791	542	210	177
v/c Ratio	1.15	0.59	0.83	0.78
Control Delay	102.1	8.9	62.9	63.8
Queue Delay	0.0	1.5	0.0	0.0
Total Delay	102.1	10.3	62.9	63.8
Queue Length 50th (ft)	~672	146	117	109
Queue Length 95th (ft)	#705	208	158	#191
Internal Link Dist (ft)	379	375	803	416
Turn Bay Length (ft)				
Base Capacity (vph)	686	920	284	258
Starvation Cap Reductn	0	204	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.15	0.76	0.74	0.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

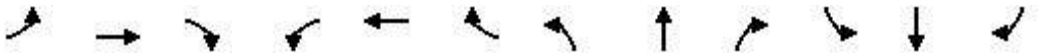
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	267	20	137	312	13	13	63	86	13	92	34
Future Volume (vph)	104	267	20	148	312	13	13	63	93	13	93	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	12	12	14	12	12	13	12	12	13	12
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			0.99	
Flpb, ped/bikes		0.99			1.00			1.00			1.00	
Frt		0.99			0.99			0.93			0.96	
Flt Protected		0.98			0.99			0.99			0.99	
Satd. Flow (prot)		1469			1782			1600			1677	
Flt Permitted		0.59			0.66			0.91			0.85	
Satd. Flow (perm)		893			1197			1467			1436	
Peak-hour factor, PHF	0.26	0.77	0.45	0.97	0.85	0.60	0.60	0.75	0.89	0.60	0.87	0.71
Adj. Flow (vph)	400	347	44	153	367	22	22	84	104	22	107	48
RTOR Reduction (vph)	0	2	0	0	1	0	0	33	0	0	13	0
Lane Group Flow (vph)	0	789	0	0	541	0	0	177	0	0	164	0
Confl. Peds. (#/hr)	11		8	8		11	3		4	4		3
Confl. Bikes (#/hr)									3			1
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		82.6			82.6			16.1			16.1	
Effective Green, g (s)		82.6			82.6			16.1			16.1	
Actuated g/C Ratio		0.77			0.77			0.15			0.15	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		684			918			219			214	
v/s Ratio Prot												
v/s Ratio Perm		c0.88			0.45			c0.12			0.11	
v/c Ratio		1.15			0.59			0.81			0.77	
Uniform Delay, d1		12.6			5.3			44.3			44.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		85.2			1.0			19.2			15.1	
Delay (s)		97.8			6.3			63.5			59.1	
Level of Service		F			A			E			E	
Approach Delay (s)		97.8			6.3			63.5			59.1	
Approach LOS		F			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	60.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	107.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	168	65	30	150	39	34	71	23	19	43	12
Future Volume (vph)	13	178	66	30	167	39	34	71	23	19	43	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	15	12	12	13	12
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
Ped Bike Factor												
Frt		0.963			0.979			0.981			0.978	
Flt Protected		0.997			0.992			0.987			0.987	
Satd. Flow (prot)	0	1631	0	0	1523	0	0	1807	0	0	1632	0
Flt Permitted		0.997			0.992			0.987			0.987	
Satd. Flow (perm)	0	1631	0	0	1523	0	0	1807	0	0	1632	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			695			637			578	
Travel Time (s)		9.3			15.8			14.5			13.1	
Confl. Peds. (#/hr)	1		6	6		1			3	3		
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.60	0.79	0.70	0.68	0.85	0.88	0.71	0.64	0.88	0.71	0.70	0.69
Heavy Vehicles (%)	0%	1%	0%	4%	1%	3%	3%	0%	0%	12%	0%	9%
Adj. Flow (vph)	22	225	94	44	196	44	48	111	26	27	61	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	341	0	0	284	0	0	185	0	0	105	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	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.01	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	13	168	65	30	150	39	34	71	23	19	43	12
Future Vol, veh/h	13	178	66	30	167	39	34	71	23	19	43	12
Conflicting Peds, #/hr	1	0	6	6	0	1	0	0	3	3	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	60	79	70	68	85	88	71	64	88	71	70	69
Heavy Vehicles, %	0	1	0	4	1	3	3	0	0	12	0	9
Mvmt Flow	22	225	94	44	196	44	48	111	26	27	61	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	241	0	0	325	0	0	667	651	281	695	676	219
Stage 1	-	-	-	-	-	-	322	322	-	307	307	-
Stage 2	-	-	-	-	-	-	345	329	-	388	369	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.13	6.5	6.2	7.22	6.5	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	6.22	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	6.22	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.527	4	3.3	3.608	4	3.381
Pot Cap-1 Maneuver	1337	-	-	1224	-	-	371	390	763	344	378	803
Stage 1	-	-	-	-	-	-	688	655	-	682	665	-
Stage 2	-	-	-	-	-	-	668	650	-	616	624	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1336	-	-	1215	-	-	298	363	756	241	352	802
Mov Cap-2 Maneuver	-	-	-	-	-	-	298	363	-	241	352	-
Stage 1	-	-	-	-	-	-	669	637	-	668	636	-
Stage 2	-	-	-	-	-	-	566	622	-	480	607	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.3	24.2	20
HCM LOS			C	C

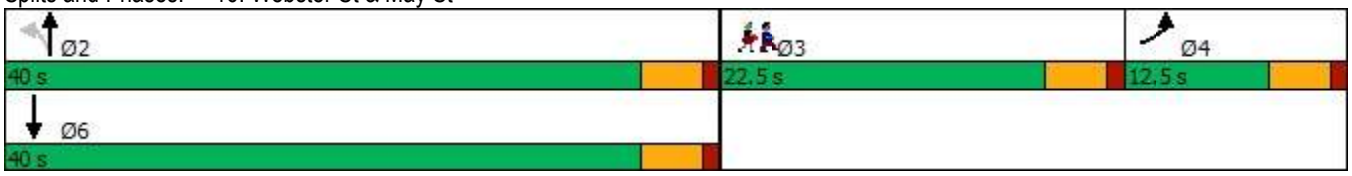
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	369	1336	-	-	1215	-	-	344
HCM Lane V/C Ratio	0.501	0.016	-	-	0.036	-	-	0.307
HCM Control Delay (s)	24.2	7.7	0	-	8.1	0	-	20
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	2.7	0	-	-	0.1	-	-	1.3

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	103	73	38	340	604	180	
Future Volume (vph)	103	73	38	340	605	180	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.98			1.00	0.99		
Frt	0.943				0.969		
Flt Protected	0.972			0.994			
Satd. Flow (prot)	1548	0	0	1700	1635	0	
Flt Permitted	0.972			0.736			
Satd. Flow (perm)	1523	0	0	1258	1635	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	39				27		
Link Speed (mph)	30			30	30		
Link Distance (ft)	756			591	599		
Travel Time (s)	17.2			13.4	13.6		
Confl. Peds. (#/hr)	6		5			5	
Peak Hour Factor	0.86	0.83	0.77	0.87	0.87	0.87	
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%	
Adj. Flow (vph)	120	88	49	391	695	207	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	208	0	0	440	902	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	1		1	2	2		
Detector Template	Left		Left	Thru	Thru		
Leading Detector (ft)	20		20	100	100		
Trailing Detector (ft)	0		0	0	0		
Detector 1 Position(ft)	0		0	0	0		
Detector 1 Size(ft)	20		20	6	6		
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		
Detector 2 Position(ft)				94	94		
Detector 2 Size(ft)				6	6		
Detector 2 Type				Cl+Ex	Cl+Ex		
Detector 2 Channel							
Detector 2 Extend (s)				0.0	0.0		
Turn Type	Prot		Perm	NA	NA		
Protected Phases	4			2	6		3
Permitted Phases			2				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Detector Phase	4		2	2	6		
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0		5.0
Minimum Split (s)	9.5		9.5	9.5	9.5		22.5
Total Split (s)	12.5		40.0	40.0	40.0		22.5
Total Split (%)	16.7%		53.3%	53.3%	53.3%		30%
Maximum Green (s)	8.0		35.5	35.5	35.5		18.0
Yellow Time (s)	3.5		3.5	3.5	3.5		3.5
All-Red Time (s)	1.0		1.0	1.0	1.0		1.0
Lost Time Adjust (s)	0.0			0.0	0.0		
Total Lost Time (s)	4.5			4.5	4.5		
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0
Recall Mode	None		Min	Min	Min		None
Walk Time (s)							7.0
Flash Dont Walk (s)							11.0
Pedestrian Calls (#/hr)							10
Act Effct Green (s)	8.2			40.6	40.6		
Actuated g/C Ratio	0.13			0.66	0.66		
v/c Ratio	0.87			0.53	0.83		
Control Delay	58.4			11.4	19.8		
Queue Delay	0.0			0.0	0.0		
Total Delay	58.4			11.4	19.8		
LOS	E			B	B		
Approach Delay	58.4			11.4	19.8		
Approach LOS	E			B	B		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 75			
Actuated Cycle Length: 61.6			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 22.6		Intersection LOS: C	
Intersection Capacity Utilization 73.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 16: Webster St & May St



Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	208	440	902
v/c Ratio	0.87	0.53	0.83
Control Delay	58.4	11.4	19.8
Queue Delay	0.0	0.0	0.0
Total Delay	58.4	11.4	19.8
Queue Length 50th (ft)	53	52	147
Queue Length 95th (ft)	#202	260	#680
Internal Link Dist (ft)	676	511	519
Turn Bay Length (ft)			
Base Capacity (vph)	238	828	1086
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.87	0.53	0.83

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	103	73	38	340	604	180
Future Volume (vph)	103	73	38	340	605	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.99	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	0.94			1.00	0.97	
Flt Protected	0.97			0.99	1.00	
Satd. Flow (prot)	1547			1700	1635	
Flt Permitted	0.97			0.74	1.00	
Satd. Flow (perm)	1547			1258	1635	
Peak-hour factor, PHF	0.86	0.83	0.77	0.87	0.87	0.87
Adj. Flow (vph)	120	88	49	391	695	207
RTOR Reduction (vph)	34	0	0	0	10	0
Lane Group Flow (vph)	174	0	0	440	892	0
Confl. Peds. (#/hr)	6		5			5
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.1			40.6	40.6	
Effective Green, g (s)	8.1			40.6	40.6	
Actuated g/C Ratio	0.12			0.62	0.62	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	192			783	1018	
v/s Ratio Prot	c0.11				c0.55	
v/s Ratio Perm				0.35		
v/c Ratio	0.91			0.56	0.88	
Uniform Delay, d1	28.2			7.1	10.2	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	39.2			0.9	8.6	
Delay (s)	67.4			8.1	18.8	
Level of Service	E			A	B	
Approach Delay (s)	67.4			8.1	18.8	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Future Volume (vph)	91	178	29	17	181	251	45	587	21	156	552	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	10	10	12	10	10	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00			1.00	0.98	1.00				1.00	
Frt		0.981				0.850		0.994			0.989	
Flt Protected		0.984			0.996		0.950			0.950		
Satd. Flow (prot)	0	3087	0	0	1676	1507	1636	1743	0	3268	1733	0
Flt Permitted		0.630			0.948		0.307			0.077		
Satd. Flow (perm)	0	1976	0	0	1595	1474	528	1743	0	265	1733	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								2				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			193			991			1083	
Travel Time (s)		8.6			4.4			22.5			24.6	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.80	0.93	0.66	0.91	0.73	0.53	0.67	0.66	0.52	0.47	0.81	0.91
Heavy Vehicles (%)	4%	4%	12%	10%	5%	0%	3%	1%	4%	0%	1%	2%
Adj. Flow (vph)	114	191	44	19	248	474	67	889	40	332	681	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	349	0	0	267	474	67	929	0	332	733	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			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.09	1.09	1.09	1.09	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phase	4	4		8	8	5	6	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	10.0	10.0		6.0	10.0	
Minimum Split (s)	12.5	12.5		12.5	12.5	10.0	17.5	17.5		10.0	17.5	
Total Split (s)	26.0	26.0		26.0	26.0	11.0	55.0	55.0		11.0	66.0	
Total Split (%)	21.7%	21.7%		21.7%	21.7%	9.2%	45.8%	45.8%		9.2%	55.0%	
Maximum Green (s)	19.5	19.5		19.5	19.5	7.0	47.5	47.5		7.0	58.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	0.0	3.5	3.5		0.0	3.5	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		19.7			19.7	29.3	48.0	48.0		62.7	59.2	
Actuated g/C Ratio		0.20			0.20	0.30	0.49	0.49		0.64	0.61	
v/c Ratio		0.91dl			0.83	1.07	0.26	1.08		0.86	0.70	
Control Delay		62.3			60.8	93.2	21.0	81.6		38.8	20.0	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		62.3			60.8	93.2	21.0	81.6		38.8	20.0	
LOS		E			E	F	C	F		D	B	
Approach Delay		62.3			81.6			77.6			25.9	
Approach LOS		E			F			E			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 97.6			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 59.3		Intersection LOS: E	
Intersection Capacity Utilization 80.1%		ICU Level of Service D	
Analysis Period (min) 15			
dl Defacto Left Lane. Recode with 1 though lane as a left lane.			

Splits and Phases: 1: Highland Ave & Webster St

Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	23%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

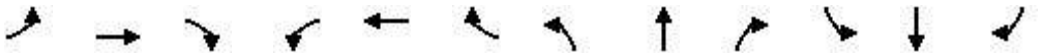
Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	349	267	474	67	929	332	733
v/c Ratio	0.91dl	0.83	1.07	0.26	1.08	0.86	0.70
Control Delay	62.3	60.8	93.2	21.0	81.6	38.8	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	60.8	93.2	21.0	81.6	38.8	20.0
Queue Length 50th (ft)	103	148	~261	21	~585	46	243
Queue Length 95th (ft)	#258	#278	261	53	#726	46	561
Internal Link Dist (ft)	299	113			911		1003
Turn Bay Length (ft)				60			
Base Capacity (vph)	399	322	445	259	858	388	1050
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.83	1.07	0.26	1.08	0.86	0.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	178	29	17	181	251	45	435	21	156	505	47
Future Volume (vph)	91	178	29	17	181	251	45	587	21	156	552	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	12	10	10	10	10	12	10	10	12
Total Lost time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Lane Util. Factor		0.95			1.00	1.00	1.00	1.00		0.97	1.00	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.98			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3086			1677	1483	1634	1742		3268	1733	
Flt Permitted		0.63			0.95	1.00	0.31	1.00		0.08	1.00	
Satd. Flow (perm)		1976			1596	1483	528	1742		264	1733	
Peak-hour factor, PHF	0.80	0.93	0.66	0.91	0.73	0.53	0.67	0.66	0.52	0.47	0.81	0.91
Adj. Flow (vph)	114	191	44	19	248	474	67	889	40	332	681	52
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	349	0	0	267	474	67	928	0	332	733	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	4%	12%	10%	5%	0%	3%	1%	4%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		19.7			19.7	26.8	48.1	48.1		59.2	59.2	
Effective Green, g (s)		19.7			19.7	26.8	48.1	48.1		59.2	59.2	
Actuated g/C Ratio		0.20			0.20	0.27	0.48	0.48		0.59	0.59	
Clearance Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		386			311	394	251	831		366	1017	
v/s Ratio Prot						c0.08		c0.53		0.06	0.42	
v/s Ratio Perm		0.18			0.17	0.23	0.13			0.47		
v/c Ratio		0.91dl			0.86	1.20	0.27	1.12		0.91	0.72	
Uniform Delay, d1		39.6			39.2	37.0	15.8	26.3		27.2	14.9	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		23.4			19.6	113.2	0.2	68.4		24.7	2.2	
Delay (s)		63.0			58.8	150.2	16.0	94.8		51.9	17.0	
Level of Service		E			E	F	B	F		D	B	
Approach Delay (s)		63.0			117.3			89.5			27.9	
Approach LOS		E			F			F			C	

Intersection Summary			
HCM 2000 Control Delay	72.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	100.8	Sum of lost time (s)	22.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

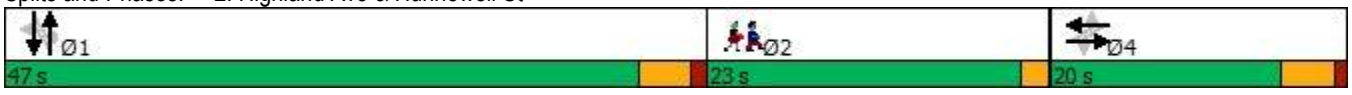
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	73	72	4	54	18	117	426	14	10	477	65
Future Volume (vph)	47	73	80	4	54	18	125	566	14	10	520	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	11	12	12	13	12	12	13	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						1.00				
Frt		0.950			0.950			0.994			0.983	
Flt Protected		0.987			0.997		0.950				0.999	
Satd. Flow (prot)	0	1592	0	0	1531	0	1562	1669	0	0	1672	0
Flt Permitted		0.878			0.974		0.348				0.985	
Satd. Flow (perm)	0	1415	0	0	1496	0	572	1669	0	0	1648	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			29			3			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		695			444			621			443	
Travel Time (s)		15.8			10.1			14.1			10.1	
Confl. Peds. (#/hr)	1								1			
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.60	0.65	0.73	0.50	0.80	0.40	0.69	0.80	0.46	0.75	0.90	0.81
Heavy Vehicles (%)	0%	5%	6%	0%	4%	0%	4%	5%	8%	0%	4%	3%
Adj. Flow (vph)	78	112	110	8	68	45	181	708	30	13	578	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	300	0	0	121	0	181	738	0	0	676	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.19	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			1			1	
Permitted Phases	4			4			1			1		
Detector Phase	4	4		4	4		1	1		1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	9.5		9.5	9.5		9.5	9.5		9.5	9.5	
Total Split (s)	20.0	20.0		20.0	20.0		47.0	47.0		47.0	47.0	
Total Split (%)	22.2%	22.2%		22.2%	22.2%		52.2%	52.2%		52.2%	52.2%	
Maximum Green (s)	15.5	15.5		15.5	15.5		42.5	42.5		42.5	42.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5			4.5	
Lead/Lag							Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.9			15.9		42.5	42.5			42.5	
Actuated g/C Ratio		0.21			0.21		0.56	0.56			0.56	
v/c Ratio		0.94			0.36		0.56	0.78			0.72	
Control Delay		69.1			26.4		23.4	23.9			20.9	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		69.1			26.4		23.4	23.9			20.9	
LOS		E			C		C	C			C	
Approach Delay		69.1			26.4			23.8			20.9	
Approach LOS		E			C			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 75.3			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 29.7		Intersection LOS: C	
Intersection Capacity Utilization 88.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Highland Ave & Hunnewell St



Lane Group	Ø2
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	21.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	300	121	181	738	676
v/c Ratio	0.94	0.36	0.56	0.78	0.72
Control Delay	69.1	26.4	23.4	23.9	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	69.1	26.4	23.4	23.9	20.9
Queue Length 50th (ft)	108	31	34	169	144
Queue Length 95th (ft)	#200	85	104	#504	#548
Internal Link Dist (ft)	615	364		541	363
Turn Bay Length (ft)			60		
Base Capacity (vph)	320	338	330	966	957
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.94	0.36	0.55	0.76	0.71

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	73	72	4	54	18	117	426	14	10	477	65
Future Volume (vph)	47	73	80	4	54	18	125	566	14	10	520	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	11	12	12	13	12	12	13	12
Total Lost time (s)		4.5			4.5		4.5	4.5			4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Frt		0.95			0.95		1.00	0.99			0.98	
Flt Protected		0.99			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1592			1530		1562	1669			1672	
Flt Permitted		0.88			0.97		0.35	1.00			0.99	
Satd. Flow (perm)		1416			1495		572	1669			1648	
Peak-hour factor, PHF	0.60	0.65	0.73	0.50	0.80	0.40	0.69	0.80	0.46	0.75	0.90	0.81
Adj. Flow (vph)	78	112	110	8	68	45	181	708	30	13	578	85
RTOR Reduction (vph)	0	22	0	0	23	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	278	0	0	98	0	181	737	0	0	671	0
Confl. Peds. (#/hr)	1								1			
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	5%	6%	0%	4%	0%	4%	5%	8%	0%	4%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			1			1	
Permitted Phases	4			4			1			1		
Actuated Green, G (s)		15.9			15.9		42.5	42.5			42.5	
Effective Green, g (s)		15.9			15.9		42.5	42.5			42.5	
Actuated g/C Ratio		0.21			0.21		0.56	0.56			0.56	
Clearance Time (s)		4.5			4.5		4.5	4.5			4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		294			311		318	928			916	
v/s Ratio Prot								c0.44				
v/s Ratio Perm		c0.20			0.07		0.32				0.41	
v/c Ratio		0.94			0.32		0.57	0.79			0.73	
Uniform Delay, d1		29.8			25.6		11.0	13.5			12.7	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		37.7			0.6		2.3	4.7			3.1	
Delay (s)		67.5			26.2		13.3	18.2			15.8	
Level of Service		E			C		B	B			B	
Approach Delay (s)		67.5			26.2			17.2			15.8	
Approach LOS		E			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	76.4	Sum of lost time (s)	11.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

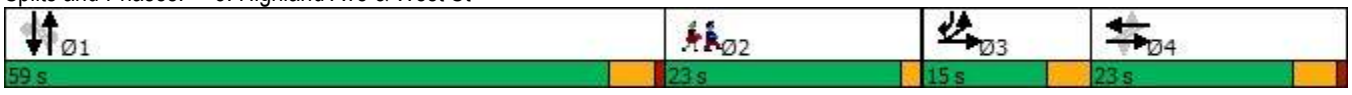
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Future Volume (vph)	200	226	31	24	142	41	20	512	46	19	373	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	9	10	12	12	13	12	12	13	12
Storage Length (ft)	0		0	150		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.99	0.99			0.99			1.00	0.98
Frt		0.975			0.968			0.989				0.850
Flt Protected	0.950			0.950				0.998			0.997	
Satd. Flow (prot)	1462	1480	0	1037	1467	0	0	1657	0	0	1683	1384
Flt Permitted	0.322			0.576				0.970			0.928	
Satd. Flow (perm)	494	1480	0	620	1467	0	0	1611	0	0	1565	1350
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		455			303			836			621	
Travel Time (s)		10.3			6.9			19.0			14.1	
Confl. Peds. (#/hr)	2		6	6		2	5		46	46		5
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.89	0.90	0.61	0.53	0.78	0.82	0.64	0.74	0.72	0.63	0.87	0.69
Heavy Vehicles (%)	0%	1%	0%	41%	6%	0%	6%	5%	0%	0%	5%	5%
Adj. Flow (vph)	225	251	51	45	182	50	31	692	64	30	429	281
Shared Lane Traffic (%)												
Lane Group Flow (vph)	225	302	0	45	232	0	0	787	0	0	459	281
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)		9			9			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.14	1.30	1.25	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	3 4			4			1			1	3
Permitted Phases	4			4			1			1		1
Detector Phase	3	3 4		4	4		1	1		1	1	3
Switch Phase												
Minimum Initial (s)	6.0			6.0	6.0		10.0	10.0		10.0	10.0	6.0
Minimum Split (s)	10.0			11.0	11.0		15.0	15.0		15.0	15.0	10.0
Total Split (s)	15.0			23.0	23.0		59.0	59.0		59.0	59.0	15.0
Total Split (%)	12.5%			19.2%	19.2%		49.2%	49.2%		49.2%	49.2%	12.5%
Maximum Green (s)	11.0			18.0	18.0		54.0	54.0		54.0	54.0	11.0
Yellow Time (s)	4.0			4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0			1.0	1.0		1.0	1.0		1.0	1.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0			5.0	5.0			5.0			5.0	4.0
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			4.0	4.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	30.3	34.3		18.2	18.2			54.5			54.5	66.6
Actuated g/C Ratio	0.28	0.31		0.17	0.17			0.50			0.50	0.61
v/c Ratio	0.96	0.65		0.44	0.95			0.98			0.59	0.34
Control Delay	87.2	42.4		59.6	95.4			57.8			25.5	7.9
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.3	0.0
Total Delay	87.2	42.4		59.6	95.4			57.8			25.8	7.9
LOS	F	D		E	F			E			C	A
Approach Delay		61.5			89.6			57.8			19.0	
Approach LOS		E			F			E			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 109.6			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 50.1		Intersection LOS: D	
Intersection Capacity Utilization 76.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Highland Ave & West St



Lane Group	Ø2
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	23.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	29
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	225	302	45	232	787	459	281
v/c Ratio	0.96	0.65	0.44	0.95	0.98	0.59	0.34
Control Delay	87.2	42.4	59.6	95.4	57.8	25.5	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Total Delay	87.2	42.4	59.6	95.4	57.8	25.8	7.9
Queue Length 50th (ft)	~152	206	32	~190	~663	262	51
Queue Length 95th (ft)	#272	312	40	#281	#637	360	56
Internal Link Dist (ft)		375		223	756	541	
Turn Bay Length (ft)			150				50
Base Capacity (vph)	234	463	102	243	801	778	824
Starvation Cap Reductn	0	0	0	0	0	50	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.65	0.44	0.95	0.98	0.63	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	223	31	19	141	41	20	388	30	17	331	187
Future Volume (vph)	200	226	31	24	142	41	20	512	46	19	373	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	12	9	10	12	12	13	12	12	13	12
Total Lost time (s)	4.0	4.0		5.0	5.0			5.0			5.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99			0.99			1.00	0.98
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.97			0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1461	1480		1025	1467			1658			1681	1357
Flt Permitted	0.32	1.00		0.58	1.00			0.97			0.93	1.00
Satd. Flow (perm)	496	1480		621	1467			1611			1566	1357
Peak-hour factor, PHF	0.89	0.90	0.61	0.53	0.78	0.82	0.64	0.74	0.72	0.63	0.87	0.69
Adj. Flow (vph)	225	251	51	45	182	50	31	692	64	30	429	281
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	225	302	0	45	232	0	0	787	0	0	459	281
Confl. Peds. (#/hr)	2		6	6		2	5		46	46		5
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	1%	0%	41%	6%	0%	6%	5%	0%	0%	5%	5%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	3 4			4			1			1	3
Permitted Phases	4			4			1			1		1
Actuated Green, G (s)	29.3	33.3		18.2	18.2			54.5			54.5	65.6
Effective Green, g (s)	29.3	33.3		18.2	18.2			54.5			54.5	65.6
Actuated g/C Ratio	0.27	0.30		0.16	0.16			0.49			0.49	0.59
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	4.0
Vehicle Extension (s)	2.0			4.0	4.0			2.0			2.0	2.0
Lane Grp Cap (vph)	228	446		102	241			795			773	806
v/s Ratio Prot	c0.10	0.20			0.16							0.04
v/s Ratio Perm	c0.16			0.07				c0.49			0.29	0.17
v/c Ratio	0.99	0.68		0.44	0.96			0.99			0.59	0.35
Uniform Delay, d1	38.0	33.8		41.5	45.8			27.7			20.0	11.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	55.2	3.2		4.1	47.5			29.0			0.8	0.1
Delay (s)	93.2	37.0		45.6	93.3			56.7			20.8	11.6
Level of Service	F	D		D	F			E			C	B
Approach Delay (s)		61.0			85.5			56.7			17.3	
Approach LOS		E			F			E			B	

Intersection Summary			
HCM 2000 Control Delay	48.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	110.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

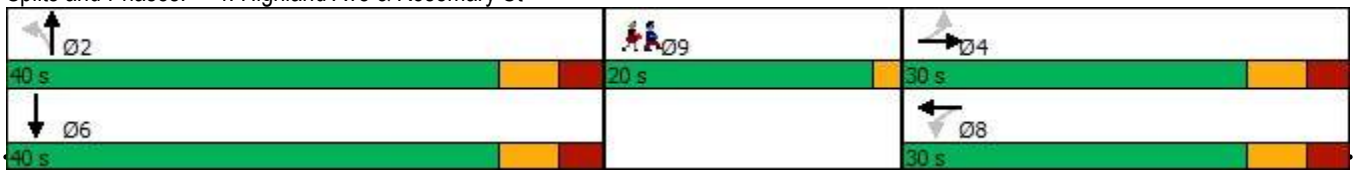
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Future Volume (vph)	21	0	186	54	59	20	115	580	0	0	405	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	9	11	9	12	11	13	12	12	16	12
Storage Length (ft)	0		25	50		0	60		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.90		0.95	0.99		0.99				1.00	
Frt		0.879			0.965						0.990	
Flt Protected		0.995		0.950			0.950					
Satd. Flow (prot)	0	1204	0	1570	1440	0	1540	1683	0	0	1834	0
Flt Permitted		0.947		0.385			0.315					
Satd. Flow (perm)	0	1145	0	607	1440	0	508	1683	0	0	1834	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		274			17							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1036			474			1055			1271	
Travel Time (s)		23.5			10.8			24.0			28.9	
Confl. Peds. (#/hr)	8		46	46		8	12		17	17		12
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.68	0.92	0.68	0.60	0.59	0.64	0.75	0.83	0.92	0.92	0.79	0.72
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%	2%	5%	0%	0%	4%	8%
Adj. Flow (vph)	31	0	274	90	100	31	153	699	0	0	513	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	305	0	90	131	0	153	699	0	0	555	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)		11			11			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.30	1.19	1.30	1.14	1.19	1.10	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2			2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	20	100		20	100		20	100			100	
Trailing Detector (ft)	0	0		0	0		0	0			0	
Detector 1 Position(ft)	0	0		0	0		0	0			0	
Detector 1 Size(ft)	20	6		20	6		20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0			12.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0			40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%			44.4%	
Maximum Green (s)	23.0	23.0		23.0	23.0		33.0	33.0			33.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		Max	Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.6		14.6	14.6		34.7	34.7			34.7	
Actuated g/C Ratio		0.20		0.20	0.20		0.47	0.47			0.47	
v/c Ratio		0.69		0.76	0.44		0.65	0.89			0.65	
Control Delay		14.4		67.7	29.2		38.8	39.9			24.7	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		14.4		67.7	29.2		38.8	39.9			24.7	
LOS		B		E	C		D	D			C	
Approach Delay		14.4			44.8			39.7			24.7	
Approach LOS		B			D			D			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 74.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 32.0		Intersection LOS: C	
Intersection Capacity Utilization 70.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Highland Ave & Rosemary St



Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	41
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	305	90	131	153	699	555
v/c Ratio	0.69	0.76	0.44	0.65	0.89	0.65
Control Delay	14.4	67.7	29.2	38.8	39.9	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	67.7	29.2	38.8	39.9	24.7
Queue Length 50th (ft)	14	45	52	67	~401	244
Queue Length 95th (ft)	94	59	61	#142	#597	342
Internal Link Dist (ft)	956		394		975	1191
Turn Bay Length (ft)		50		60		
Base Capacity (vph)	557	197	480	237	786	856
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.46	0.27	0.65	0.89	0.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	175	54	59	20	112	440	0	0	358	30
Future Volume (vph)	21	0	186	54	59	20	115	580	0	0	405	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	9	11	9	12	11	13	12	12	16	12
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		0.88		1.00	0.99		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		0.95	1.00		0.99	1.00			1.00	
Frt		0.88		1.00	0.96		1.00	1.00			0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1170		1487	1437		1532	1683			1835	
Flt Permitted		0.95		0.39	1.00		0.32	1.00			1.00	
Satd. Flow (perm)		1113		603	1437		508	1683			1835	
Peak-hour factor, PHF	0.68	0.92	0.68	0.60	0.59	0.64	0.75	0.83	0.92	0.92	0.79	0.72
Adj. Flow (vph)	31	0	274	90	100	31	153	699	0	0	513	42
RTOR Reduction (vph)	0	220	0	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	85	0	90	117	0	153	699	0	0	555	0
Confl. Peds. (#/hr)	8		46	46		8	12		17	17		12
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%	2%	5%	0%	0%	4%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		14.6		14.6	14.6		34.7	34.7			34.7	
Effective Green, g (s)		14.6		14.6	14.6		34.7	34.7			34.7	
Actuated g/C Ratio		0.20		0.20	0.20		0.47	0.47			0.47	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		218		118	281		236	783			854	
v/s Ratio Prot					0.08			c0.42			0.30	
v/s Ratio Perm		0.08		c0.15			0.30					
v/c Ratio		0.39		0.76	0.42		0.65	0.89			0.65	
Uniform Delay, d1		26.1		28.3	26.2		15.2	18.2			15.2	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.1		24.8	1.0		13.0	14.7			3.8	
Delay (s)		27.2		53.1	27.2		28.2	32.9			19.1	
Level of Service		C		D	C		C	C			B	
Approach Delay (s)		27.2			37.8			32.0			19.1	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

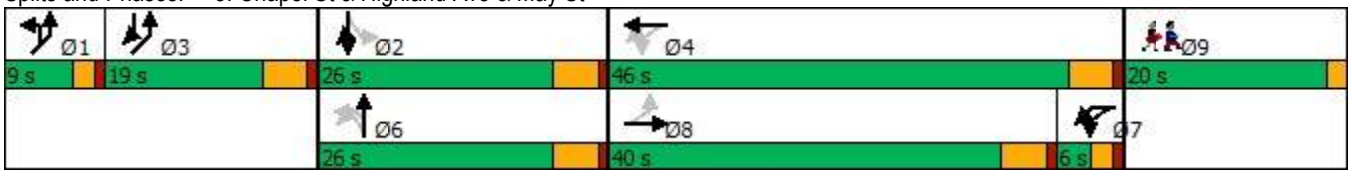
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Future Volume (vph)	86	135	36	13	31	39	165	53	2	10	175	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12	10	12	12	12	16	12
Storage Length (ft)	0		0			0		0		0		0
Storage Lanes	0		0			0		0		0		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					0.99				1.00	
Frt		0.978					0.974				0.984	
Flt Protected		0.985					0.987				0.997	
Satd. Flow (prot)	0	1666	0	0	0	0	1493	0	0	0	1823	0
Flt Permitted		0.687					0.749				0.969	
Satd. Flow (perm)	0	1161	0	0	0	0	1133	0	0	0	1771	0
Right Turn on Red				No				Yes				No
Satd. Flow (RTOR)							11					
Link Speed (mph)		30					30				30	
Link Distance (ft)		453					923				945	
Travel Time (s)		10.3					21.0				21.5	
Confl. Peds. (#/hr)	7							7		3		2
Peak Hour Factor	0.72	0.62	0.92	0.50	0.64	0.55	0.65	0.60	0.50	0.56	0.64	0.50
Heavy Vehicles (%)	0%	3%	0%	8%	0%	0%	4%	0%	0%	0%	4%	6%
Adj. Flow (vph)	119	218	39	26	48	71	254	88	4	18	273	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	402	0	0	0	0	461	0	0	0	335	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Left	Left	Right
Median Width(ft)		0					0				0	
Link Offset(ft)		0					0				0	
Crosswalk Width(ft)		16					16				16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2		1	1	2	
Detector Template	Left	Thru			Left	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100		20	20	100	
Trailing Detector (ft)	0	0			0	0	0		0	0	0	
Detector 1 Position(ft)	0	0			0	0	0		0	0	0	
Detector 1 Size(ft)	20	6			20	20	6		20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	
Detector 2 Channel												

Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Lane Configurations										
Traffic Volume (vph)	15	129	189	89	11	268	39	9		
Future Volume (vph)	15	140	238	89	11	387	39	9		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	10	11	12	10	11	11	11		
Storage Length (ft)	0		120			0	60			
Storage Lanes	0		1			2	0			
Taper Length (ft)	25					25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00				0.99				
Frt			0.850			0.977				
Flt Protected		0.995			0.950	0.959				
Satd. Flow (prot)	0	1535	1348	0	1516	1451	0	0		
Flt Permitted		0.834			0.950	0.959				
Satd. Flow (perm)	0	1287	1348	0	1516	1438	0	0		
Right Turn on Red				No				Yes		
Satd. Flow (RTOR)						127				
Link Speed (mph)		30				30				
Link Distance (ft)		644				580				
Travel Time (s)		14.6				13.2				
Confl. Peds. (#/hr)	2			3		7	2			
Peak Hour Factor	0.70	0.79	0.91	0.81	0.63	0.91	0.63	0.67		
Heavy Vehicles (%)	7%	3%	6%	0%	0%	7%	3%	0%		
Adj. Flow (vph)	21	177	262	110	17	425	62	13		
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	198	372	0	17	500	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Right	Left	Left	Right	Right		
Median Width(ft)		0				21				
Link Offset(ft)		0				0				
Crosswalk Width(ft)		16				16				
Two way Left Turn Lane										
Headway Factor	1.14	1.25	1.19	1.14	1.25	1.19	1.19	1.19		
Turning Speed (mph)	15		9	9	15	15	9	9		
Number of Detectors	1	2	1		1	1				
Detector Template	Left	Thru	Right		Left	Left				
Leading Detector (ft)	20	100	20		20	20				
Trailing Detector (ft)	0	0	0		0	0				
Detector 1 Position(ft)	0	0	0		0	0				
Detector 1 Size(ft)	20	6	20		20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)		94								
Detector 2 Size(ft)		6								
Detector 2 Type		Cl+Ex								
Detector 2 Channel										

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Detector Phase	8	8			7	7	4		6	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0			2.0	2.0	6.0		6.0	6.0	6.0	
Minimum Split (s)	11.0	11.0			6.0	6.0	11.0		11.0	11.0	11.0	
Total Split (s)	40.0	40.0			6.0	6.0	46.0		26.0	26.0	26.0	
Total Split (%)	33.3%	33.3%			5.0%	5.0%	38.3%		21.7%	21.7%	21.7%	
Maximum Green (s)	35.0	35.0			3.0	3.0	41.0		21.0	21.0	21.0	
Yellow Time (s)	4.0	4.0			2.0	2.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0				0.0	
Total Lost Time (s)		5.0					5.0				5.0	
Lead/Lag	Lead	Lead			Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None			None	None	None		Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		41.2					41.2				21.1	
Actuated g/C Ratio		0.40					0.40				0.20	
v/c Ratio		0.87					1.01				0.93	
Control Delay		51.3					77.5				75.8	
Queue Delay		0.0					0.0				0.0	
Total Delay		51.3					77.5				75.8	
LOS		D					E				E	
Approach Delay		51.3					77.5				75.8	
Approach LOS		D					E				E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 104			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay: 71.1		Intersection LOS: E	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Chapel St & Highland Ave & May St



Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Detector 2 Extend (s)		0.0								
Turn Type	Perm	NA	custom		Prot	Prot				
Protected Phases		2	2 3		1	1 3			3	9
Permitted Phases	2									
Detector Phase	2	2	2 3		1	1 3				
Switch Phase										
Minimum Initial (s)	6.0	6.0			1.0				4.0	5.0
Minimum Split (s)	11.0	11.0			6.0				9.0	20.0
Total Split (s)	26.0	26.0			9.0				19.0	20.0
Total Split (%)	21.7%	21.7%			7.5%				16%	17%
Maximum Green (s)	21.0	21.0			6.0				14.0	18.0
Yellow Time (s)	4.0	4.0			2.0				4.0	2.0
All-Red Time (s)	1.0	1.0			1.0				1.0	0.0
Lost Time Adjust (s)		0.0			0.0					
Total Lost Time (s)		5.0			3.0					
Lead/Lag					Lead				Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0
Recall Mode	Min	Min			None				None	None
Walk Time (s)										7.0
Flash Dont Walk (s)										11.0
Pedestrian Calls (#/hr)										12
Act Effct Green (s)		21.1	40.2		6.0	25.1				
Actuated g/C Ratio		0.20	0.39		0.06	0.24				
v/c Ratio		0.76	0.71		0.20	1.12				
Control Delay		59.8	37.5		55.0	108.0				
Queue Delay		0.0	0.0		0.0	0.0				
Total Delay		59.8	37.5		55.0	108.0				
LOS		E	D		D	F				
Approach Delay		45.2				106.3				
Approach LOS		D				F				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR	NEL2	NEL
Lane Group Flow (vph)	402	461	335	198	372	17	500
v/c Ratio	0.87	1.01	0.93	0.76	0.71	0.20	1.12
Control Delay	51.3	77.5	75.8	59.8	37.5	55.0	108.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	77.5	75.8	59.8	37.5	55.0	108.0
Queue Length 50th (ft)	227	279	210	119	193	11	~297
Queue Length 95th (ft)	266	#362	#266	#233	#429	26	#615
Internal Link Dist (ft)	373	843	865	564			500
Turn Bay Length (ft)					120		
Base Capacity (vph)	460	456	359	261	521	87	447
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	1.01	0.93	0.76	0.71	0.20	1.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	86	135	36	13	31	39	165	53	2	10	172	20
Future Volume (vph)	86	135	36	13	31	39	165	53	2	10	175	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12	10	12	12	12	16	12
Total Lost time (s)		5.0					5.0				5.0	
Lane Util. Factor		1.00					1.00				1.00	
Frpb, ped/bikes		1.00					0.99				1.00	
Flpb, ped/bikes		1.00					1.00				1.00	
Frt		0.98					0.97				0.98	
Flt Protected		0.99					0.99				1.00	
Satd. Flow (prot)		1666					1494				1822	
Flt Permitted		0.69					0.75				0.97	
Satd. Flow (perm)		1160					1133				1771	
Peak-hour factor, PHF	0.72	0.62	0.92	0.50	0.64	0.55	0.65	0.60	0.50	0.56	0.64	0.50
Adj. Flow (vph)	119	218	39	26	48	71	254	88	4	18	273	40
RTOR Reduction (vph)	0	0	0	0	0	0	7	0	0	0	0	0
Lane Group Flow (vph)	0	402	0	0	0	0	454	0	0	0	335	0
Confl. Peds. (#/hr)	7							7		3		2
Heavy Vehicles (%)	0%	3%	0%	8%	0%	0%	4%	0%	0%	0%	4%	6%
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Actuated Green, G (s)		41.2					41.2				21.1	
Effective Green, g (s)		41.2					41.2				21.1	
Actuated g/C Ratio		0.39					0.39				0.20	
Clearance Time (s)		5.0					5.0				5.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		453					442				354	
v/s Ratio Prot												
v/s Ratio Perm		0.35					c0.40				c0.19	
v/c Ratio		0.89					1.03				0.95	
Uniform Delay, d1		30.0					32.1				41.6	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		18.5					50.1				33.8	
Delay (s)		48.5					82.3				75.4	
Level of Service		D					F				E	
Approach Delay (s)		48.5					82.3				75.4	
Approach LOS		D					F				E	

Intersection Summary			
HCM 2000 Control Delay	86.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	105.5	Sum of lost time (s)	23.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	15	129	189	89	11	268	39	9
Future Volume (vph)	15	140	238	89	11	387	39	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	10	11	11	11
Total Lost time (s)		5.0	5.0		3.0	3.0		
Lane Util. Factor		1.00	1.00		1.00	1.00		
Frpb, ped/bikes		1.00	1.00		1.00	1.00		
Flpb, ped/bikes		1.00	1.00		1.00	1.00		
Frt		1.00	0.85		1.00	0.98		
Flt Protected		0.99	1.00		0.95	0.96		
Satd. Flow (prot)		1535	1348		1516	1452		
Flt Permitted		0.83	1.00		0.95	0.96		
Satd. Flow (perm)		1287	1348		1516	1452		
Peak-hour factor, PHF	0.70	0.79	0.91	0.81	0.63	0.91	0.63	0.67
Adj. Flow (vph)	21	177	262	110	17	425	62	13
RTOR Reduction (vph)	0	0	0	0	0	99	0	0
Lane Group Flow (vph)	0	198	372	0	17	401	0	0
Confl. Peds. (#/hr)	2			3		7	2	
Heavy Vehicles (%)	7%	3%	6%	0%	0%	7%	3%	0%
Turn Type	Perm	NA	custom		Prot	Prot		
Protected Phases		2	2 3		1	1 3		
Permitted Phases	2							
Actuated Green, G (s)		21.1	40.2		6.0	23.1		
Effective Green, g (s)		21.1	40.2		6.0	23.1		
Actuated g/C Ratio		0.20	0.38		0.06	0.22		
Clearance Time (s)		5.0			3.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		257	513		86	317		
v/s Ratio Prot			0.28		0.01	c0.28		
v/s Ratio Perm		0.15						
v/c Ratio		0.77	0.73		0.20	1.26		
Uniform Delay, d1		39.9	27.9		47.5	41.2		
Progression Factor		1.00	1.00		1.00	1.00		
Incremental Delay, d2		13.3	5.1		1.1	141.8		
Delay (s)		53.2	33.0		48.6	183.0		
Level of Service		D	C		D	F		
Approach Delay (s)		40.0				178.5		
Approach LOS		D				F		

Intersection Summary

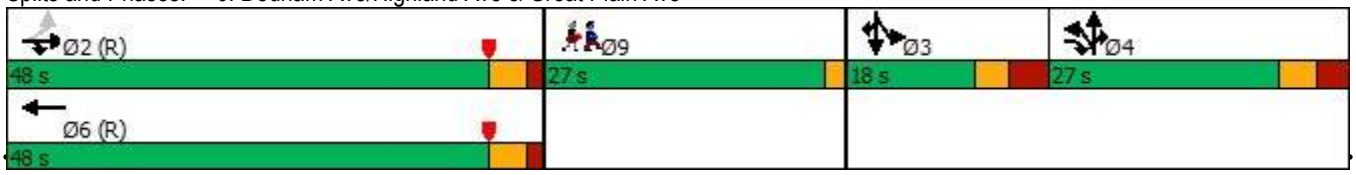
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Future Volume (vph)	55	271	289	0	329	73	269	164	24	30	97	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	10	10	10	10	10	10	10	10	12
Storage Length (ft)	0		0	0		0	0		35	0		90
Storage Lanes	0		1	0		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt			0.850		0.966				0.850			0.850
Flt Protected		0.992					0.950				0.987	
Satd. Flow (prot)	0	1557	1338	0	2783	0	1458	1565	1292	0	1497	1358
Flt Permitted		0.772					0.950				0.987	
Satd. Flow (perm)	0	1210	1338	0	2783	0	1456	1565	1292	0	1494	1358
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									95			95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		238			434			312			945	
Travel Time (s)		5.4			9.9			7.1			21.5	
Confl. Peds. (#/hr)	11		4	4		11	1		2	2		1
Peak Hour Factor	0.68	0.62	0.77	0.92	0.92	0.71	0.87	0.81	0.69	0.65	0.73	0.52
Heavy Vehicles (%)	0%	2%	5%	0%	4%	6%	4%	2%	5%	0%	7%	7%
Adj. Flow (vph)	81	437	375	0	358	103	309	202	35	46	133	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	518	375	0	461	0	309	202	35	0	179	60
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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1		2		1	2	1	1	2	1
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20		100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20		6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Detector Phase	2	2	2 4		6		4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0			10.0		11.5	11.5	11.5	11.5	11.5	11.5
Total Split (s)	48.0	48.0			48.0		27.0	27.0	27.0	18.0	18.0	18.0
Total Split (%)	40.0%	40.0%			40.0%		22.5%	22.5%	22.5%	15.0%	15.0%	15.0%
Maximum Green (s)	43.0	43.0			43.0		20.5	20.5	20.5	11.5	11.5	11.5
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5			1.5		3.0	3.0	3.0	3.5	3.5	3.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Lead/Lag							Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Min	C-Min			C-Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		43.0	77.3		43.0		27.8	27.8	27.8		20.4	20.4
Actuated g/C Ratio		0.36	0.64		0.36		0.23	0.23	0.23		0.17	0.17
v/c Ratio		1.20	0.44		0.46		0.92	0.56	0.09		0.70	0.19
Control Delay		130.1	12.6		31.5		77.7	49.1	0.5		64.9	4.5
Queue Delay		1.2	10.3		5.6		9.1	0.0	0.0		0.0	0.1
Total Delay		131.3	22.9		37.1		86.8	49.1	0.5		64.9	4.6
LOS		F	C		D		F	D	A		E	A
Approach Delay		85.8			37.1			67.4			49.8	
Approach LOS		F			D			E			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 66.6		Intersection LOS: E	
Intersection Capacity Utilization 74.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Dedham Ave/Highland Ave & Great Plain Ave



Lane Group	Ø9
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	15
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	518	375	461	309	202	35	179	60
v/c Ratio	1.20	0.44	0.46	0.92	0.56	0.09	0.70	0.19
Control Delay	130.1	12.6	31.5	77.7	49.1	0.5	64.9	4.5
Queue Delay	1.2	10.3	5.6	9.1	0.0	0.0	0.0	0.1
Total Delay	131.3	22.9	37.1	86.8	49.1	0.5	64.9	4.6
Queue Length 50th (ft)	~476	91	143	215	127	0	127	0
Queue Length 95th (ft)	#369	m157	193	#454	209	0	#237	0
Internal Link Dist (ft)	158		354		232		865	
Turn Bay Length (ft)						35		90
Base Capacity (vph)	433	862	997	337	362	372	254	309
Starvation Cap Reductn	50	451	0	0	0	0	0	0
Spillback Cap Reductn	0	0	466	20	0	0	0	22
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.35	0.91	0.87	0.97	0.56	0.09	0.70	0.21

Intersection Summary

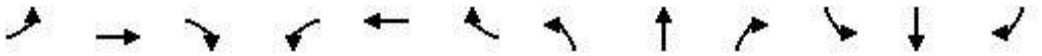
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	271	270	0	329	73	263	161	24	30	86	31
Future Volume (vph)	55	271	289	0	329	73	269	164	24	30	97	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	11	10	10	10	10	10	10	10	10	12
Total Lost time (s)		5.0	5.0		5.0		6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00		1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)		1555	1338		2784		1458	1565	1292		1498	1358
Flt Permitted		0.77	1.00		1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)		1211	1338		2784		1458	1565	1292		1498	1358
Peak-hour factor, PHF	0.68	0.62	0.77	0.92	0.92	0.71	0.87	0.81	0.69	0.65	0.73	0.52
Adj. Flow (vph)	81	437	375	0	358	103	309	202	35	46	133	60
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	27	0	0	50
Lane Group Flow (vph)	0	518	375	0	461	0	309	202	8	0	179	10
Confl. Peds. (#/hr)	11		4	4		11	1		2	2		1
Heavy Vehicles (%)	0%	2%	5%	0%	4%	6%	4%	2%	5%	0%	7%	7%
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Actuated Green, G (s)		41.8	76.1		41.8		27.8	27.8	27.8		20.4	20.4
Effective Green, g (s)		41.8	69.6		41.8		27.8	27.8	27.8		20.4	20.4
Actuated g/C Ratio		0.35	0.58		0.35		0.23	0.23	0.23		0.17	0.17
Clearance Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		2.0			2.0		2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		421	776		969		337	362	299		254	230
v/s Ratio Prot			0.28		0.17		c0.21	0.13	0.01		c0.12	0.01
v/s Ratio Perm		c0.43										
v/c Ratio		1.23	0.48		0.48		0.92	0.56	0.03		0.70	0.04
Uniform Delay, d1		39.1	14.7		30.5		45.0	40.7	35.6		47.0	41.6
Progression Factor		0.73	0.98		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		116.2	0.1		1.7		28.2	1.1	0.0		7.1	0.0
Delay (s)		144.6	14.5		32.2		73.1	41.7	35.7		54.0	41.7
Level of Service		F	B		C		E	D	D		D	D
Approach Delay (s)		90.0			32.2			59.1			50.9	
Approach LOS		F			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	65.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



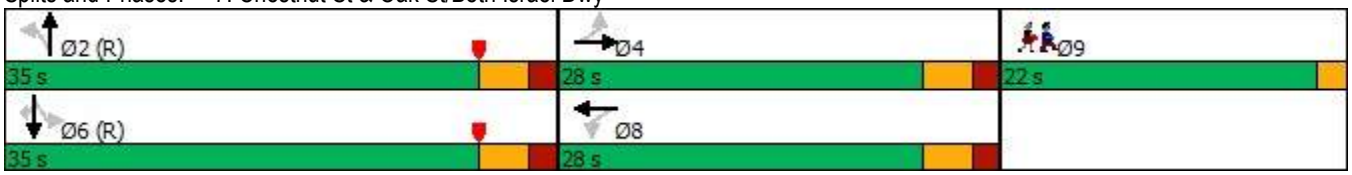
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Future Volume (vph)	81	9	74	8	6	14	116	692	10	23	322	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	8	8	11	11	11	9	9	12	12	9	9
Storage Length (ft)	0		0	0		0	80		0	0		150
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.939			0.935			0.998				0.850
Flt Protected		0.976			0.986		0.950				0.997	
Satd. Flow (prot)	0	1332	0	0	1494	0	1433	1506	0	0	1504	1283
Flt Permitted		0.834			0.920		0.458				0.744	
Satd. Flow (perm)	0	1138	0	0	1394	0	691	1506	0	0	1123	1283
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								1				78
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			314			227			439	
Travel Time (s)		13.8			7.1			5.2			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	10	80	9	7	15	126	752	11	25	350	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	178	0	0	31	0	126	763	0	0	375	78
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			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.19	1.19	1.19	1.30	1.30	1.14	1.14	1.30	1.30
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	28.0	28.0		28.0	28.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	32.9%	32.9%		32.9%	32.9%		41.2%	41.2%		41.2%	41.2%	41.2%
Maximum Green (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	30.0
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		23.0			23.0		43.2	43.2			43.2	43.2
Actuated g/C Ratio		0.27			0.27		0.51	0.51			0.51	0.51
v/c Ratio		0.58			0.08		0.36	1.00			0.66	0.11
Control Delay		35.6			24.0		21.0	57.8			27.7	5.3
Queue Delay		0.0			0.0		0.0	0.0			0.0	0.0
Total Delay		35.6			24.0		21.0	57.8			27.7	5.3
LOS		D			C		C	E			C	A
Approach Delay		35.6			24.0			52.6			23.8	
Approach LOS		D			C			D			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 41.7		Intersection LOS: D	
Intersection Capacity Utilization 79.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Chestnut St & Oak St/Beth Israel Dwy



Lane Group	Ø9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	22.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	178	31	126	763	375	78
v/c Ratio	0.58	0.08	0.36	1.00	0.66	0.11
Control Delay	35.6	24.0	21.0	57.8	27.7	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	24.0	21.0	57.8	27.7	5.3
Queue Length 50th (ft)	82	12	29	290	106	0
Queue Length 95th (ft)	151	34	111	#784	#367	28
Internal Link Dist (ft)	526	234		147	359	
Turn Bay Length (ft)			80			150
Base Capacity (vph)	307	377	350	765	571	690
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.08	0.36	1.00	0.66	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	9	74	8	6	14	116	541	10	23	271	72
Future Volume (vph)	81	9	74	8	6	14	116	692	10	23	322	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	11	11	11	9	9	12	12	9	9
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	1.00
Frt		0.94			0.93		1.00	1.00			1.00	0.85
Flt Protected		0.98			0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1332			1493		1433	1506			1504	1282
Flt Permitted		0.83			0.92		0.46	1.00			0.74	1.00
Satd. Flow (perm)		1138			1394		691	1506			1122	1282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	10	80	9	7	15	126	752	11	25	350	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	39
Lane Group Flow (vph)	0	178	0	0	31	0	126	762	0	0	375	39
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		23.0			23.0		42.0	42.0			42.0	42.0
Effective Green, g (s)		23.0			23.0		42.0	42.0			42.0	42.0
Actuated g/C Ratio		0.27			0.27		0.49	0.49			0.49	0.49
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		307			377		341	744			554	633
v/s Ratio Prot								c0.51				
v/s Ratio Perm		c0.16			0.02		0.18				0.33	0.03
v/c Ratio		0.58			0.08		0.37	1.02			0.68	0.06
Uniform Delay, d1		26.8			23.1		13.3	21.5			16.3	11.2
Progression Factor		1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		7.8			0.4		3.1	39.5			6.5	0.2
Delay (s)		34.6			23.6		16.4	61.0			22.9	11.4
Level of Service		C			C		B	E			C	B
Approach Delay (s)		34.6			23.6			54.6			20.9	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

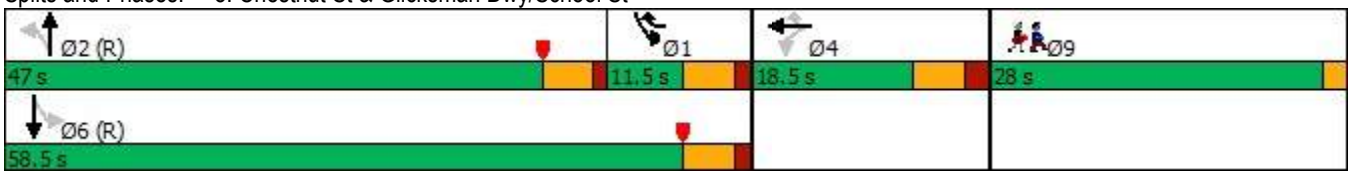
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Future Volume (vph)	0	0	0	166	4	53	6	612	234	51	254	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	9	13	9	12	12	9	12	12
Storage Length (ft)	0		0	0		150	40		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			70			70			100		
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						0.850		0.959			0.998	
Flt Protected					0.953		0.950			0.950		
Satd. Flow (prot)	0	0	0	0	1438	1473	1433	1608	0	1433	1673	0
Flt Permitted					0.953		0.576			0.107		
Satd. Flow (perm)	0	0	0	0	1438	1473	869	1608	0	161	1673	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						58		22			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		162			420			439			782	
Travel Time (s)		3.7			9.5			10.0			17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	180	4	58	7	665	254	55	276	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	184	58	7	919	0	55	280	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.30	1.30	1.10	1.30	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2		1	2	
Detector Template				Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)				20	100	20	20	100		20	100	
Trailing Detector (ft)				0	0	0	0	0		0	0	
Detector 1 Position(ft)				0	0	0	0	0		0	0	
Detector 1 Size(ft)				20	6	20	20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				4		4	2			6		
Detector Phase				4	4	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)				6.0	6.0	1.0	2.0	2.0		1.0	10.0	
Minimum Split (s)				12.0	12.0	11.5	7.0	7.0		11.5	15.5	
Total Split (s)				18.5	18.5	11.5	47.0	47.0		11.5	58.5	
Total Split (%)				17.6%	17.6%	11.0%	44.8%	44.8%		11.0%	55.7%	
Maximum Green (s)				12.5	12.5	6.0	42.0	42.0		6.0	53.0	
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)				2.0	2.0	1.5	1.0	1.0		1.5	1.5	
Lost Time Adjust (s)					0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lead/Lag						Lag	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode				None	None	None	C-Min	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					12.5	22.0	61.3	61.3		70.9	69.8	
Actuated g/C Ratio					0.12	0.21	0.58	0.58		0.68	0.66	
v/c Ratio					1.08	0.16	0.01	0.97		0.31	0.25	
Control Delay					135.6	9.8	17.5	47.8		25.6	10.7	
Queue Delay					0.0	0.0	0.0	41.3		0.0	0.0	
Total Delay					135.6	9.8	17.5	89.1		25.6	10.7	
LOS					F	A	B	F		C	B	
Approach Delay					105.5			88.6			13.2	
Approach LOS					F			F			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 74.5		Intersection LOS: E	
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Chestnut St & Glicksman Dwy/School St



Lane Group	Ø9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	27%
Maximum Green (s)	26.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	184	58	7	919	55	280
v/c Ratio	1.08	0.16	0.01	0.97	0.31	0.25
Control Delay	135.6	9.8	17.5	47.8	25.6	10.7
Queue Delay	0.0	0.0	0.0	41.3	0.0	0.0
Total Delay	135.6	9.8	17.5	89.1	25.6	10.7
Queue Length 50th (ft)	~138	0	1	412	7	42
Queue Length 95th (ft)	#279	32	12	#1071	39	166
Internal Link Dist (ft)	340			359		702
Turn Bay Length (ft)		150	40		115	
Base Capacity (vph)	171	327	507	947	181	1112
Starvation Cap Reductn	0	0	0	187	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.18	0.01	1.21	0.30	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	166	4	53	6	461	234	51	203	4
Future Volume (vph)	0	0	0	166	4	53	6	612	234	51	254	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	9	9	13	9	12	12	9	12	12
Total Lost time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frt					1.00	0.85	1.00	0.96		1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1438	1472	1433	1607		1433	1673	
Flt Permitted					0.95	1.00	0.58	1.00		0.11	1.00	
Satd. Flow (perm)					1438	1472	869	1607		161	1673	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	180	4	58	7	665	254	55	276	4
RTOR Reduction (vph)	0	0	0	0	0	49	0	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	184	9	7	909	0	55	280	0
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Actuated Green, G (s)					12.5	17.1	59.0	59.0		68.6	68.6	
Effective Green, g (s)					12.5	17.1	59.0	59.0		68.6	68.6	
Actuated g/C Ratio					0.12	0.16	0.56	0.56		0.65	0.65	
Clearance Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Vehicle Extension (s)					3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)					171	316	488	902		160	1093	
v/s Ratio Prot						0.00		c0.57		0.01	c0.17	
v/s Ratio Perm					0.13	0.01	0.01			0.21		
v/c Ratio					1.08	0.03	0.01	1.01		0.34	0.26	
Uniform Delay, d1					46.2	37.0	10.2	23.0		33.8	7.6	
Progression Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2					90.5	0.0	0.1	32.0		1.3	0.6	
Delay (s)					136.8	37.0	10.2	55.0		35.1	8.1	
Level of Service					F	D	B	D		D	A	
Approach Delay (s)		0.0			112.9			54.6			12.6	
Approach LOS		A			F			D			B	

Intersection Summary			
HCM 2000 Control Delay	54.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	154	651	599	30	4	142
Future Volume (vph)	154	659	624	30	4	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.993		0.871	
Flt Protected		0.990			0.998	
Satd. Flow (prot)	0	2932	2944	0	1371	0
Flt Permitted		0.990			0.998	
Satd. Flow (perm)	0	2932	2944	0	1371	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		180	394		416	
Travel Time (s)		4.1	9.0		9.5	
Confl. Peds. (#/hr)	23			23		
Peak Hour Factor	0.75	0.77	0.84	0.81	0.50	0.78
Heavy Vehicles (%)	4%	2%	2%	8%	0%	5%
Adj. Flow (vph)	205	856	743	37	8	182
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1061	780	0	190	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.25	1.25	1.25	1.19	1.19
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	154	651	599	30	4	142
Future Vol, veh/h	154	659	624	30	4	142
Conflicting Peds, #/hr	23	0	0	23	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	77	84	81	50	78
Heavy Vehicles, %	4	2	2	8	0	5
Mvmt Flow	205	856	743	37	8	182

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	803	0	-	0	1623	413
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	838	-
Critical Hdwy	4.18	-	-	-	6.8	7
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.24	-	-	-	3.5	3.35
Pot Cap-1 Maneuver	804	-	-	-	95	580
Stage 1	-	-	-	-	415	-
Stage 2	-	-	-	-	390	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	788	-	-	-	46	568
Mov Cap-2 Maneuver	-	-	-	-	46	-
Stage 1	-	-	-	-	205	-
Stage 2	-	-	-	-	382	-

Approach	EB	WB	SB
HCM Control Delay, s	3.7	0	23.2
HCM LOS			C

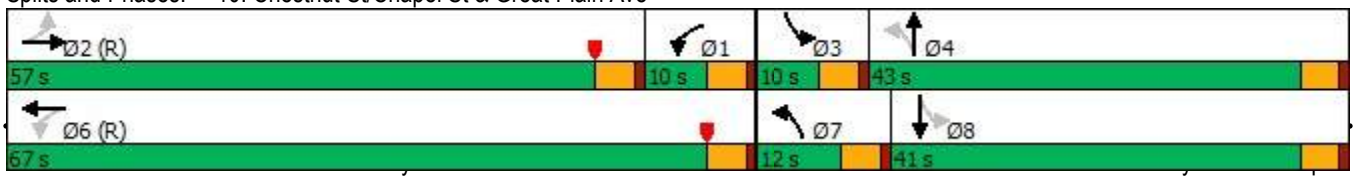
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	788	-	-	-	384
HCM Lane V/C Ratio	0.261	-	-	-	0.495
HCM Control Delay (s)	11.2	1.9	-	-	23.2
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	1	-	-	-	2.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Future Volume (vph)	62	522	79	89	497	43	112	387	74	18	189	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	175		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.982			0.989			0.976			0.959	
Flt Protected		0.995			0.992		0.950			0.950		
Satd. Flow (prot)	0	2856	0	0	2873	0	1444	1528	0	1430	1484	0
Flt Permitted		0.696			0.596		0.383			0.214		
Satd. Flow (perm)	0	1998	0	0	1726	0	582	1528	0	322	1484	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			238			782			424	
Travel Time (s)		9.0			5.4			17.8			9.6	
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.66	0.76	0.76	0.75	0.83	0.75	0.81	0.88	0.89	0.50	0.91	0.57
Heavy Vehicles (%)	8%	2%	9%	3%	4%	0%	5%	6%	2%	6%	4%	13%
Adj. Flow (vph)	94	687	104	119	599	57	138	440	83	36	208	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	885	0	0	775	0	138	523	0	36	285	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.19	1.19	1.25	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	34.5	34.5		9.5	34.5		9.5	34.5		9.5	34.5	
Total Split (s)	57.0	57.0		10.0	67.0		12.0	43.0		10.0	41.0	
Total Split (%)	47.5%	47.5%		8.3%	55.8%		10.0%	35.8%		8.3%	34.2%	
Maximum Green (s)	52.5	52.5		5.5	62.5		7.5	38.5		5.5	36.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lead		Lag			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0			8.0			8.0	
Flash Dont Walk (s)	16.0	16.0			16.0			22.0			22.0	
Pedestrian Calls (#/hr)	2	2			2			2			2	
Act Effct Green (s)		60.6			60.6		48.9	44.4		43.3	37.6	
Actuated g/C Ratio		0.50			0.50		0.41	0.37		0.36	0.31	
v/c Ratio		0.88			0.89		0.47	0.93		0.21	0.61	
Control Delay		37.5			36.8		29.7	61.8		25.2	42.3	
Queue Delay		10.2			38.1		0.0	47.8		1.0	0.0	
Total Delay		47.8			75.0		29.7	109.6		26.2	42.3	
LOS		D			E		C	F		C	D	
Approach Delay		47.8			75.0			92.9			40.5	
Approach LOS		D			E			F			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 10 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 66.2		Intersection LOS: E	
Intersection Capacity Utilization 79.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 10: Chestnut St/Chapel St & Great Plain Ave



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	885	775	138	523	36	285
v/c Ratio	0.88	0.89	0.47	0.93	0.21	0.61
Control Delay	37.5	36.8	29.7	61.8	25.2	42.3
Queue Delay	10.2	38.1	0.0	47.8	1.0	0.0
Total Delay	47.8	75.0	29.7	109.6	26.2	42.3
Queue Length 50th (ft)	299	333	69	~448	17	190
Queue Length 95th (ft)	293	m370	104	#640	21	288
Internal Link Dist (ft)	314	158		702		344
Turn Bay Length (ft)			175		100	
Base Capacity (vph)	1009	898	296	565	168	467
Starvation Cap Reductn	0	176	0	0	0	0
Spillback Cap Reductn	113	0	0	178	47	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.99	1.07	0.47	1.35	0.30	0.61

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	522	74	83	497	43	96	271	55	18	149	35
Future Volume (vph)	62	522	79	89	497	43	112	387	74	18	189	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	11	11	10	11	11
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.98		1.00	0.96	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2856			2874		1444	1528		1430	1485	
Flt Permitted		0.70			0.60		0.38	1.00		0.21	1.00	
Satd. Flow (perm)		1998			1726		582	1528		322	1485	
Peak-hour factor, PHF	0.66	0.76	0.76	0.75	0.83	0.75	0.81	0.88	0.89	0.50	0.91	0.57
Adj. Flow (vph)	94	687	104	119	599	57	138	440	83	36	208	77
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	885	0	0	775	0	138	523	0	36	285	0
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	8%	2%	9%	3%	4%	0%	5%	6%	2%	6%	4%	13%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		58.8			58.8		52.2	44.4		42.7	39.4	
Effective Green, g (s)		58.8			58.8		52.2	44.4		42.7	39.4	
Actuated g/C Ratio		0.49			0.49		0.44	0.37		0.36	0.33	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		979			845		312	565		145	487	
v/s Ratio Prot							c0.03	c0.34		0.01	0.19	
v/s Ratio Perm		0.44			c0.45		0.16			0.08		
v/c Ratio		0.90			0.92		0.44	0.93		0.25	0.59	
Uniform Delay, d1		28.0			28.3		22.3	36.2		27.6	33.5	
Progression Factor		1.00			0.95		1.00	1.00		1.00	1.00	
Incremental Delay, d2		13.2			12.3		1.0	21.2		0.9	1.8	
Delay (s)		41.3			39.1		23.3	57.4		28.5	35.3	
Level of Service		D			D		C	E		C	D	
Approach Delay (s)		41.3			39.1			50.3			34.5	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	42.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	128	8	157	105	6	8	2	135	10	1	4
Future Volume (vph)	1	128	8	157	105	6	8	2	135	10	1	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	14	12	12	13	12	12	10	12
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
Ped Bike Factor												
Frt		0.994			0.997			0.881			0.964	
Flt Protected		0.999			0.972			0.995			0.971	
Satd. Flow (prot)	0	1738	0	0	1721	0	0	1503	0	0	1494	0
Flt Permitted		0.999			0.972			0.995			0.971	
Satd. Flow (perm)	0	1738	0	0	1721	0	0	1503	0	0	1494	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		521			453			566			491	
Travel Time (s)		11.8			10.3			12.9			11.2	
Confl. Peds. (#/hr)	1		3	3		1						
Peak Hour Factor	0.25	0.71	0.88	0.70	0.66	0.63	0.44	0.50	0.80	0.56	0.25	0.50
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	14%	0%	2%	0%	0%	0%
Adj. Flow (vph)	4	180	9	224	159	10	18	4	169	18	4	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	393	0	0	191	0	0	30	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	1.14	1.10	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	128	8	157	105	6	8	2	135	10	1	4
Future Vol, veh/h	1	128	8	157	105	6	8	2	135	10	1	4
Conflicting Peds, #/hr	1	0	3	3	0	1	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	25	71	88	70	66	63	44	50	80	56	25	50
Heavy Vehicles, %	0	1	0	4	1	0	14	0	2	0	0	0
Mvmt Flow	4	180	9	224	159	10	18	4	169	18	4	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	170	0	0	192	0	0	814	814	188	892	813	165
Stage 1	-	-	-	-	-	-	196	196	-	613	613	-
Stage 2	-	-	-	-	-	-	618	618	-	279	200	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.24	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.24	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.24	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.626	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1420	-	-	1370	-	-	283	315	854	265	315	885
Stage 1	-	-	-	-	-	-	779	742	-	483	486	-
Stage 2	-	-	-	-	-	-	457	484	-	732	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1419	-	-	1366	-	-	237	256	851	180	256	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	237	256	-	180	256	-
Stage 1	-	-	-	-	-	-	774	738	-	481	398	-
Stage 2	-	-	-	-	-	-	367	396	-	582	735	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	4.7	12.7	22
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	657	1419	-	-	1366	-	-	241
HCM Lane V/C Ratio	0.291	0.003	-	-	0.164	-	-	0.124
HCM Control Delay (s)	12.7	7.5	0	-	8.2	0	-	22
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.6	-	-	0.4

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	176	148	130	65	68	53
Future Volume (vph)	176	148	130	68	79	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.962		0.946	
Flt Protected		0.979			0.971	
Satd. Flow (prot)	0	1667	1516	0	1630	0
Flt Permitted		0.979			0.971	
Satd. Flow (perm)	0	1667	1516	0	1630	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		525	1036		802	
Travel Time (s)		11.9	23.5		18.2	
Confl. Peds. (#/hr)	4			4		1
Peak Hour Factor	0.90	0.56	0.59	0.78	0.74	0.75
Heavy Vehicles (%)	1%	0%	1%	2%	2%	4%
Adj. Flow (vph)	196	264	220	87	107	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	460	307	0	178	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.25	1.25	1.05	1.05
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	176	148	130	65	68	53
Future Vol, veh/h	176	148	130	68	79	53
Conflicting Peds, #/hr	4	0	0	4	0	1
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	90	56	59	78	74	75
Heavy Vehicles, %	1	0	1	2	2	4
Mvmt Flow	196	264	220	87	107	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	311	0	-	0	924	269
Stage 1	-	-	-	-	268	-
Stage 2	-	-	-	-	656	-
Critical Hdwy	4.11	-	-	-	6.42	6.24
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.209	-	-	-	3.518	3.336
Pot Cap-1 Maneuver	1255	-	-	-	299	765
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	516	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1249	-	-	-	242	761
Mov Cap-2 Maneuver	-	-	-	-	242	-
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	514	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	27.6
HCM LOS			D

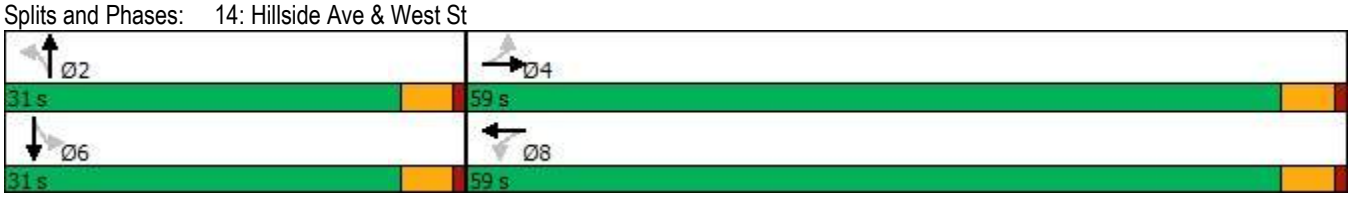
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1249	-	-	-	332
HCM Lane V/C Ratio	0.157	-	-	-	0.534
HCM Control Delay (s)	8.4	0	-	-	27.6
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.6	-	-	-	3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	350	24	99	228	32	9	67	86	9	72	18
Future Volume (vph)	28	350	24	107	228	32	9	68	113	9	72	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	12	12	14	12	12	13	12	12	13	12
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
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.990			0.985			0.919			0.973	
Flt Protected		0.995			0.985			0.998			0.996	
Satd. Flow (prot)	0	1482	0	0	1719	0	0	1565	0	0	1606	0
Flt Permitted		0.932			0.767			0.984			0.961	
Satd. Flow (perm)	0	1386	0	0	1335	0	0	1543	0	0	1549	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			12			85			14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		459			455			883			496	
Travel Time (s)		10.4			10.3			20.1			11.3	
Confl. Peds. (#/hr)	14		7	7		14	2		3	3		2
Peak Hour Factor	0.63	0.90	0.69	0.70	0.81	0.60	0.67	0.66	0.65	0.67	0.63	0.57
Heavy Vehicles (%)	0%	2%	5%	2%	3%	0%	0%	2%	3%	25%	2%	13%
Adj. Flow (vph)	44	389	35	153	281	53	13	103	174	13	114	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	468	0	0	487	0	0	290	0	0	159	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	1.14	1.30	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	59.0	59.0		59.0	59.0		31.0	31.0		31.0	31.0	
Total Split (%)	65.6%	65.6%		65.6%	65.6%		34.4%	34.4%		34.4%	34.4%	
Maximum Green (s)	54.5	54.5		54.5	54.5		26.5	26.5		26.5	26.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	20	20		20	20		20	20		20	20	
Act Effct Green (s)		24.7			24.7			13.2			13.2	
Actuated g/C Ratio		0.51			0.51			0.27			0.27	
v/c Ratio		0.66			0.71			0.60			0.37	
Control Delay		13.6			15.3			18.4			18.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		13.6			15.3			18.4			18.3	
LOS		B			B			B			B	
Approach Delay		13.6			15.3			18.4			18.3	
Approach LOS		B			B			B			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 48.2			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 15.7		Intersection LOS: B	
Intersection Capacity Utilization 69.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 14: Hillside Ave & West St

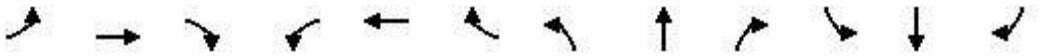


Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	468	487	290	159
v/c Ratio	0.66	0.71	0.60	0.37
Control Delay	13.6	15.3	18.4	18.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.6	15.3	18.4	18.3
Queue Length 50th (ft)	72	78	43	29
Queue Length 95th (ft)	214	192	96	68
Internal Link Dist (ft)	379	375	803	416
Turn Bay Length (ft)				
Base Capacity (vph)	1297	1250	1001	978
Starvation Cap Reductn	0	18	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	0.40	0.29	0.16

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	350	24	99	228	32	9	67	86	9	72	18
Future Volume (vph)	28	350	24	107	228	32	9	68	113	9	72	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	12	12	14	12	12	13	12	12	13	12
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.92			0.97	
Flt Protected		1.00			0.98			1.00			1.00	
Satd. Flow (prot)		1482			1719			1567			1606	
Flt Permitted		0.93			0.77			0.98			0.96	
Satd. Flow (perm)		1388			1339			1545			1550	
Peak-hour factor, PHF	0.63	0.90	0.69	0.70	0.81	0.60	0.67	0.66	0.65	0.67	0.63	0.57
Adj. Flow (vph)	44	389	35	153	281	53	13	103	174	13	114	32
RTOR Reduction (vph)	0	4	0	0	6	0	0	61	0	0	10	0
Lane Group Flow (vph)	0	464	0	0	481	0	0	229	0	0	149	0
Confl. Peds. (#/hr)	14		7	7		14	2		3	3		2
Heavy Vehicles (%)	0%	2%	5%	2%	3%	0%	0%	2%	3%	25%	2%	13%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		24.7			24.7			13.2			13.2	
Effective Green, g (s)		24.7			24.7			13.2			13.2	
Actuated g/C Ratio		0.53			0.53			0.28			0.28	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		730			705			434			436	
v/s Ratio Prot												
v/s Ratio Perm		0.33			c0.36			c0.15			0.10	
v/c Ratio		0.64			0.68			0.53			0.34	
Uniform Delay, d1		7.9			8.2			14.2			13.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.8			2.7			1.2			0.5	
Delay (s)		9.7			10.9			15.4			13.9	
Level of Service		A			B			B			B	
Approach Delay (s)		9.7			10.9			15.4			13.9	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	46.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	134	28	23	187	32	39	89	21	25	51	10
Future Volume (vph)	18	154	28	23	199	32	40	89	21	25	51	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	15	12	12	13	12
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
Ped Bike Factor												
Frt		0.977			0.979			0.982			0.981	
Flt Protected		0.995			0.994			0.987			0.983	
Satd. Flow (prot)	0	1651	0	0	1517	0	0	1775	0	0	1639	0
Flt Permitted		0.995			0.994			0.987			0.983	
Satd. Flow (perm)	0	1651	0	0	1517	0	0	1775	0	0	1639	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			695			637			578	
Travel Time (s)		9.3			15.8			14.5			13.1	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.67	0.82	0.63	0.66	0.88	0.66	0.67	0.65	0.68	0.58	0.77	0.56
Heavy Vehicles (%)	0%	0%	4%	5%	1%	7%	0%	2%	11%	4%	2%	11%
Adj. Flow (vph)	27	188	44	35	226	48	60	137	31	43	66	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	259	0	0	309	0	0	228	0	0	127	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	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.01	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	9.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	134	28	23	187	32	39	89	21	25	51	10
Future Vol, veh/h	18	154	28	23	199	32	40	89	21	25	51	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	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	67	82	63	66	88	66	67	65	68	58	77	56
Heavy Vehicles, %	0	0	4	5	1	7	0	2	11	4	2	11
Mvmt Flow	27	188	44	35	226	48	60	137	31	43	66	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	274	0	0	232	0	0	626	608	212	670	606	250
Stage 1	-	-	-	-	-	-	264	264	-	320	320	-
Stage 2	-	-	-	-	-	-	362	344	-	350	286	-
Critical Hdwy	4.1	-	-	4.15	-	-	7.1	6.52	6.31	7.14	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.14	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.14	5.52	-
Follow-up Hdwy	2.2	-	-	2.245	-	-	3.5	4.018	3.399	3.536	4.018	3.399
Pot Cap-1 Maneuver	1301	-	-	1318	-	-	400	410	806	368	411	767
Stage 1	-	-	-	-	-	-	746	690	-	687	652	-
Stage 2	-	-	-	-	-	-	661	637	-	662	675	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1301	-	-	1318	-	-	326	387	805	246	388	767
Mov Cap-2 Maneuver	-	-	-	-	-	-	326	387	-	246	388	-
Stage 1	-	-	-	-	-	-	728	673	-	671	631	-
Stage 2	-	-	-	-	-	-	559	617	-	494	659	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.9	25.8	21.4
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	395	1301	-	-	1318	-	-	345
HCM Lane V/C Ratio	0.576	0.021	-	-	0.026	-	-	0.369
HCM Control Delay (s)	25.8	7.8	0	-	7.8	0	-	21.4
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	3.5	0.1	-	-	0.1	-	-	1.7

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	64	59	70	504	330	133	
Future Volume (vph)	64	59	70	504	330	133	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.99			1.00	0.99		
Frt	0.930				0.960		
Flt Protected	0.976			0.992			
Satd. Flow (prot)	1536	0	0	1642	1599	0	
Flt Permitted	0.976			0.750			
Satd. Flow (perm)	1520	0	0	1241	1599	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	52				41		
Link Speed (mph)	30			30	30		
Link Distance (ft)	756			591	599		
Travel Time (s)	17.2			13.4	13.6		
Confl. Peds. (#/hr)	3		2			2	
Confl. Bikes (#/hr)						1	
Peak Hour Factor	0.85	0.74	0.63	0.83	0.63	0.60	
Heavy Vehicles (%)	0%	2%	5%	3%	2%	2%	
Adj. Flow (vph)	75	80	111	607	524	222	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	155	0	0	718	746	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	1		1	2	2		
Detector Template	Left		Left	Thru	Thru		
Leading Detector (ft)	20		20	100	100		
Trailing Detector (ft)	0		0	0	0		
Detector 1 Position(ft)	0		0	0	0		
Detector 1 Size(ft)	20		20	6	6		
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		
Detector 2 Position(ft)				94	94		
Detector 2 Size(ft)				6	6		
Detector 2 Type				Cl+Ex	Cl+Ex		
Detector 2 Channel							
Detector 2 Extend (s)				0.0	0.0		
Turn Type	Prot		Perm	NA	NA		
Protected Phases	4			2	6		3

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Permitted Phases			2				
Detector Phase	4		2	2	6		
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0		5.0
Minimum Split (s)	9.5		9.5	9.5	9.5		22.5
Total Split (s)	10.0		47.5	47.5	47.5		22.5
Total Split (%)	12.5%		59.4%	59.4%	59.4%		28%
Maximum Green (s)	5.5		43.0	43.0	43.0		18.0
Yellow Time (s)	3.5		3.5	3.5	3.5		3.5
All-Red Time (s)	1.0		1.0	1.0	1.0		1.0
Lost Time Adjust (s)	0.0			0.0	0.0		
Total Lost Time (s)	4.5			4.5	4.5		
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0
Recall Mode	None		Min	Min	Min		None
Walk Time (s)							7.0
Flash Dont Walk (s)							11.0
Pedestrian Calls (#/hr)							10
Act Effct Green (s)	5.6			50.6	50.6		
Actuated g/C Ratio	0.08			0.73	0.73		
v/c Ratio	0.91			0.79	0.63		
Control Delay	73.5			17.9	10.4		
Queue Delay	0.0			0.0	0.0		
Total Delay	73.5			17.9	10.4		
LOS	E			B	B		
Approach Delay	73.5			17.9	10.4		
Approach LOS	E			B	B		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 80			
Actuated Cycle Length: 69.1			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 19.8		Intersection LOS: B	
Intersection Capacity Utilization 81.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 16: Webster St & May St

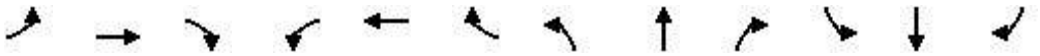
Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	155	718	746
v/c Ratio	0.91	0.79	0.63
Control Delay	73.5	17.9	10.4
Queue Delay	0.0	0.0	0.0
Total Delay	73.5	17.9	10.4
Queue Length 50th (ft)	40	102	75
Queue Length 95th (ft)	#156	#537	224
Internal Link Dist (ft)	676	511	519
Turn Bay Length (ft)			
Base Capacity (vph)	171	908	1181
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.91	0.79	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	64	59	70	504	330	133
Future Volume (vph)	64	59	70	504	330	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.99	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	0.93			1.00	0.96	
Flt Protected	0.98			0.99	1.00	
Satd. Flow (prot)	1537			1642	1599	
Flt Permitted	0.98			0.75	1.00	
Satd. Flow (perm)	1537			1242	1599	
Peak-hour factor, PHF	0.85	0.74	0.63	0.83	0.63	0.60
Adj. Flow (vph)	75	80	111	607	524	222
RTOR Reduction (vph)	48	0	0	0	13	0
Lane Group Flow (vph)	107	0	0	718	733	0
Confl. Peds. (#/hr)	3		2			2
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	0%	2%	5%	3%	2%	2%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	5.6			50.6	50.6	
Effective Green, g (s)	5.6			50.6	50.6	
Actuated g/C Ratio	0.08			0.70	0.70	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	118			863	1111	
v/s Ratio Prot	c0.07				0.46	
v/s Ratio Perm				c0.58		
v/c Ratio	0.91			0.83	0.66	
Uniform Delay, d1	33.3			8.0	6.3	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	54.3			6.9	1.5	
Delay (s)	87.7			14.9	7.7	
Level of Service	F			B	A	
Approach Delay (s)	87.7			14.9	7.7	
Approach LOS	F			B	A	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



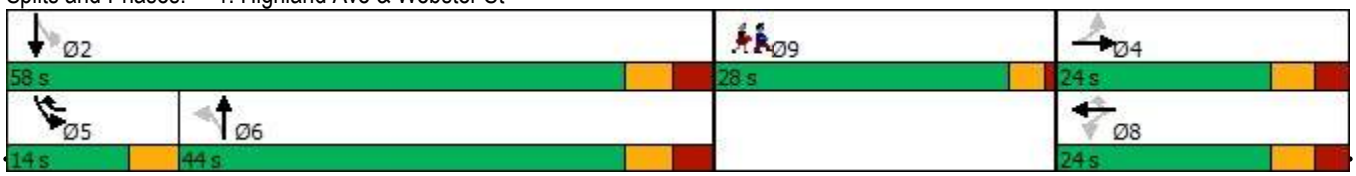
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	261	40	25	173	237	32	427	42	282	622	70
Future Volume (vph)	72	261	40	25	173	237	32	518	42	282	771	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	10	10	12	10	10	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		0.99			1.00	0.97	1.00	1.00		1.00	1.00	
Frt		0.983				0.850		0.989			0.987	
Flt Protected		0.990			0.994		0.950			0.950		
Satd. Flow (prot)	0	3243	0	0	1739	1507	1636	1752	0	3268	1727	0
Flt Permitted		0.698			0.786		0.107			0.097		
Satd. Flow (perm)	0	2282	0	0	1374	1459	184	1752	0	334	1727	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								4				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			193			991			1083	
Travel Time (s)		8.6			4.4			22.5			24.6	
Confl. Peds. (#/hr)	6		3	3		6	8		2	2		8
Confl. Bikes (#/hr)			3						2			1
Peak Hour Factor	0.93	0.95	0.91	0.88	0.84	0.66	0.80	0.78	0.80	0.52	0.88	0.85
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	3%	0%	0%	0%	1%	2%
Adj. Flow (vph)	77	275	44	28	206	359	40	664	53	542	876	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	396	0	0	234	359	40	717	0	542	958	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			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.09	1.09	1.09	1.09	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phase	4	4		8	8	5	6	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	10.0	10.0		6.0	10.0	
Minimum Split (s)	12.5	12.5		12.5	12.5	11.0	17.5	17.5		11.0	17.5	
Total Split (s)	24.0	24.0		24.0	24.0	14.0	44.0	44.0		14.0	58.0	
Total Split (%)	21.8%	21.8%		21.8%	21.8%	12.7%	40.0%	40.0%		12.7%	52.7%	
Maximum Green (s)	17.5	17.5		17.5	17.5	10.0	36.5	36.5		10.0	50.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	0.0	3.5	3.5		0.0	3.5	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		-2.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0	7.5	7.5		2.0	7.5	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		17.9			17.9	30.6	37.3	37.3		57.2	51.6	
Actuated g/C Ratio		0.18			0.18	0.31	0.38	0.38		0.58	0.52	
v/c Ratio		0.96			0.94	0.79	0.58	1.08		0.97	1.06	
Control Delay		78.8			88.5	45.6	67.3	91.6		58.6	75.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		78.8			88.5	45.6	67.3	91.6		58.6	75.7	
LOS		E			F	D	E	F		E	E	
Approach Delay		78.8			62.5			90.3			69.5	
Approach LOS		E			E			F			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 98.8			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 74.2		Intersection LOS: E	
Intersection Capacity Utilization 89.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Highland Ave & Webster St



Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	25%
Maximum Green (s)	24.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	44
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

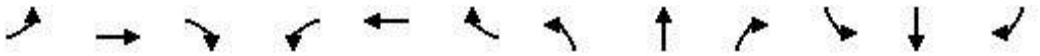
Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	396	234	359	40	717	542	958
v/c Ratio	0.96	0.94	0.79	0.58	1.08	0.97	1.06
Control Delay	78.8	88.5	45.6	67.3	91.6	58.6	75.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.8	88.5	45.6	67.3	91.6	58.6	75.7
Queue Length 50th (ft)	~166	~184	229	24	~628	~173	~827
Queue Length 95th (ft)	#266	#307	225	#73	#686	88	#1035
Internal Link Dist (ft)	299	113			911		1003
Turn Bay Length (ft)				60			
Base Capacity (vph)	413	248	457	69	663	557	900
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.94	0.79	0.58	1.08	0.97	1.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	261	40	25	173	237	32	427	42	282	622	70
Future Volume (vph)	72	261	40	25	173	237	32	518	42	282	771	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	12	10	10	10	10	12	10	10	12
Total Lost time (s)		6.5			6.5	4.0	7.5	7.5		2.0	7.5	
Lane Util. Factor		0.95			1.00	1.00	1.00	1.00		0.97	1.00	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3240			1738	1478	1633	1752		3268	1728	
Flt Permitted		0.70			0.79	1.00	0.11	1.00		0.10	1.00	
Satd. Flow (perm)		2285			1374	1478	184	1752		332	1728	
Peak-hour factor, PHF	0.93	0.95	0.91	0.88	0.84	0.66	0.80	0.78	0.80	0.52	0.88	0.85
Adj. Flow (vph)	77	275	44	28	206	359	40	664	52	542	876	82
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	396	0	0	234	359	40	714	0	542	958	0
Confl. Peds. (#/hr)	6		3	3		6	8		2	2		8
Confl. Bikes (#/hr)			3						2			1
Heavy Vehicles (%)	0%	1%	0%	4%	1%	0%	3%	0%	0%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		17.9			17.9	28.1	37.4	37.4		51.6	51.6	
Effective Green, g (s)		17.9			17.9	28.1	37.4	37.4		53.6	51.6	
Actuated g/C Ratio		0.18			0.18	0.28	0.37	0.37		0.53	0.51	
Clearance Time (s)		6.5			6.5	4.0	7.5	7.5		4.0	7.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		407			244	413	68	652		534	888	
v/s Ratio Prot						0.09		0.41		0.12	c0.55	
v/s Ratio Perm		c0.17			0.17	0.15	0.22			0.42		
v/c Ratio		0.97			0.96	0.87	0.59	1.10		1.01	1.08	
Uniform Delay, d1		41.0			40.9	34.4	25.3	31.5		29.9	24.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		37.1			45.4	16.8	8.1	64.3		42.8	53.8	
Delay (s)		78.2			86.3	51.3	33.4	95.8		72.6	78.2	
Level of Service		E			F	D	C	F		E	E	
Approach Delay (s)		78.2			65.1			92.5			76.2	
Approach LOS		E			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	78.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	100.4	Sum of lost time (s)	22.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

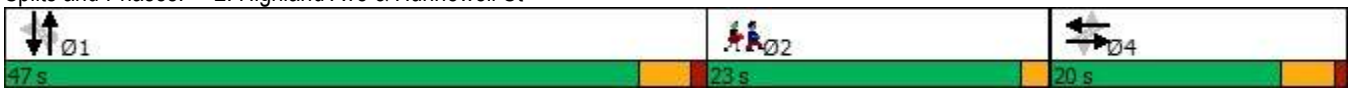
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	89	83	2	24	1	128	422	12	13	611	66
Future Volume (vph)	46	89	93	2	24	1	139	506	12	13	748	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	11	12	12	13	12	12	13	12
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.950			0.989			0.996			0.984	
Flt Protected		0.990			0.996		0.950				0.999	
Satd. Flow (prot)	0	1628	0	0	1622	0	1608	1725	0	0	1706	0
Flt Permitted		0.921			0.971		0.268				0.975	
Satd. Flow (perm)	0	1508	0	0	1582	0	453	1725	0	0	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			4			2			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		695			444			621			443	
Travel Time (s)		15.8			10.1			14.1			10.1	
Confl. Peds. (#/hr)	8					8	11		9	9		11
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.71	0.66	0.80	0.50	0.61	0.25	0.62	0.81	0.69	0.50	0.98	0.74
Heavy Vehicles (%)	3%	0%	4%	0%	0%	0%	1%	2%	0%	0%	1%	5%
Adj. Flow (vph)	65	135	116	4	39	4	224	625	17	26	763	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	316	0	0	47	0	224	642	0	0	894	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.19	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			1			1	
Permitted Phases	4			4			1			1		
Detector Phase	4	4		4	4		1	1		1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	9.5		9.5	9.5		9.5	9.5		9.5	9.5	
Total Split (s)	20.0	20.0		20.0	20.0		47.0	47.0		47.0	47.0	
Total Split (%)	22.2%	22.2%		22.2%	22.2%		52.2%	52.2%		52.2%	52.2%	
Maximum Green (s)	15.5	15.5		15.5	15.5		42.5	42.5		42.5	42.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5			4.5	
Lead/Lag							Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.8			15.8		43.9	43.9			43.9	
Actuated g/C Ratio		0.21			0.21		0.57	0.57			0.57	
v/c Ratio		0.95			0.14		0.86	0.65			0.94	
Control Delay		70.8			28.3		53.1	18.2			37.2	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		70.8			28.3		53.1	18.2			37.2	
LOS		E			C		D	B			D	
Approach Delay		70.8			28.3			27.3			37.2	
Approach LOS		E			C			C			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 76.7			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 37.9		Intersection LOS: D	
Intersection Capacity Utilization 97.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Highland Ave & Hunnewell St



Lane Group	Ø2
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	21.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	316	47	224	642	894
v/c Ratio	0.95	0.14	0.86	0.65	0.94
Control Delay	70.8	28.3	53.1	18.2	37.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	70.8	28.3	53.1	18.2	37.2
Queue Length 50th (ft)	114	14	57	131	245
Queue Length 95th (ft)	#213	34	#154	367	#829
Internal Link Dist (ft)	615	364		541	363
Turn Bay Length (ft)			60		
Base Capacity (vph)	332	329	259	987	956
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.95	0.14	0.86	0.65	0.94

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	89	83	2	24	1	128	422	12	13	611	66
Future Volume (vph)	46	89	93	2	24	1	139	506	12	13	748	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	11	12	12	13	12	12	13	12
Total Lost time (s)		4.5			4.5		4.5	4.5			4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Frt		0.95			0.99		1.00	1.00			0.98	
Flt Protected		0.99			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1622			1622		1605	1725			1706	
Flt Permitted		0.92			0.97		0.27	1.00			0.97	
Satd. Flow (perm)		1509			1582		453	1725			1665	
Peak-hour factor, PHF	0.71	0.66	0.80	0.50	0.61	0.25	0.62	0.81	0.69	0.50	0.98	0.74
Adj. Flow (vph)	65	135	116	4	39	4	224	625	17	26	763	105
RTOR Reduction (vph)	0	22	0	0	3	0	0	1	0	0	4	0
Lane Group Flow (vph)	0	294	0	0	44	0	224	641	0	0	890	0
Confl. Peds. (#/hr)	8					8	11		9	9		11
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	3%	0%	4%	0%	0%	0%	1%	2%	0%	0%	1%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			1			1	
Permitted Phases	4			4			1			1		
Actuated Green, G (s)		15.8			15.8		43.9	43.9			43.9	
Effective Green, g (s)		15.8			15.8		43.9	43.9			43.9	
Actuated g/C Ratio		0.20			0.20		0.56	0.56			0.56	
Clearance Time (s)		4.5			4.5		4.5	4.5			4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		306			320		255	972			938	
v/s Ratio Prot								0.37				
v/s Ratio Perm		c0.19			0.03		0.49				c0.53	
v/c Ratio		0.96			0.14		0.88	0.66			0.95	
Uniform Delay, d1		30.7			25.5		14.7	11.8			15.9	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		40.1			0.2		27.0	1.6			18.0	
Delay (s)		70.9			25.7		41.7	13.4			33.9	
Level of Service		E			C		D	B			C	
Approach Delay (s)		70.9			25.7			20.8			33.9	
Approach LOS		E			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	97.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

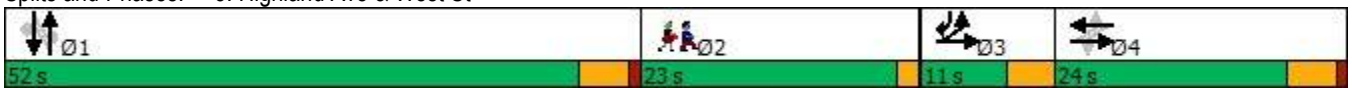
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Future Volume (vph)	141	213	45	62	173	38	25	496	47	48	536	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	9	10	12	12	13	12	12	13	12
Storage Length (ft)	0		0	150		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.98	0.99			0.99			1.00	0.97
Frt		0.972			0.970			0.984				0.850
Flt Protected	0.950			0.950				0.998			0.996	
Satd. Flow (prot)	1433	1473	0	1462	1535	0	0	1712	0	0	1725	1439
Flt Permitted	0.352			0.584				0.826			0.903	
Satd. Flow (perm)	527	1473	0	880	1535	0	0	1416	0	0	1563	1389
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		455			303			836			621	
Travel Time (s)		10.3			6.9			19.0			14.1	
Confl. Peds. (#/hr)	7		11	11		7	14		21	21		14
Confl. Bikes (#/hr)						1			1			1
Peak Hour Factor	0.69	0.92	0.83	0.66	0.84	0.73	0.82	0.96	0.64	0.81	0.88	0.89
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	0%	1%	0%	2%	2%	1%
Adj. Flow (vph)	204	232	54	94	206	52	30	517	73	59	609	290
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	286	0	94	258	0	0	620	0	0	668	290
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)		9			9			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.14	1.30	1.25	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	3 4			4			1			1	3
Permitted Phases	4			4			1			1		1
Detector Phase	3	3 4		4	4		1	1		1	1	3
Switch Phase												
Minimum Initial (s)	6.0			6.0	6.0		10.0	10.0		10.0	10.0	6.0
Minimum Split (s)	10.0			11.0	11.0		15.0	15.0		15.0	15.0	10.0
Total Split (s)	11.0			24.0	24.0		52.0	52.0		52.0	52.0	11.0
Total Split (%)	10.0%			21.8%	21.8%		47.3%	47.3%		47.3%	47.3%	10.0%
Maximum Green (s)	7.0			19.0	19.0		47.0	47.0		47.0	47.0	7.0
Yellow Time (s)	4.0			4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0			1.0	1.0		1.0	1.0		1.0	1.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0			5.0	5.0			5.0			5.0	4.0
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0			4.0	4.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None			None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	27.3	31.3		19.2	19.2			47.5			47.5	55.6
Actuated g/C Ratio	0.29	0.33		0.20	0.20			0.50			0.50	0.58
v/c Ratio	0.94	0.59		0.53	0.83			0.88			0.86	0.36
Control Delay	80.1	34.9		49.7	62.5			39.8			36.4	9.6
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	80.1	34.9		49.7	62.5			39.8			36.4	9.6
LOS	F	C		D	E			D			D	A
Approach Delay		53.7			59.1			39.8			28.3	
Approach LOS		D			E			D			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 95.4			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 40.9		Intersection LOS: D	
Intersection Capacity Utilization 82.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Highland Ave & West St



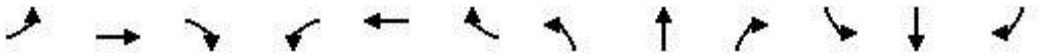
Lane Group	Ø2
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	21.0
Total Split (s)	23.0
Total Split (%)	21%
Maximum Green (s)	21.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	24
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	204	286	94	258	620	668	290
v/c Ratio	0.94	0.59	0.53	0.83	0.88	0.86	0.36
Control Delay	80.1	34.9	49.7	62.5	39.8	36.4	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.1	34.9	49.7	62.5	39.8	36.4	9.6
Queue Length 50th (ft)	83	123	45	134	260	276	55
Queue Length 95th (ft)	#176	273	82	#304	#668	#669	106
Internal Link Dist (ft)		375		223	756	541	
Turn Bay Length (ft)			150				50
Base Capacity (vph)	218	483	177	309	705	778	813
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.59	0.53	0.83	0.88	0.86	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	211	45	47	170	36	25	418	38	47	413	235
Future Volume (vph)	141	213	45	62	173	38	25	496	47	48	536	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	12	9	10	12	12	13	12	12	13	12
Total Lost time (s)	4.0	4.0		5.0	5.0			5.0			5.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00			1.00	0.97
Flpb, ped/bikes	1.00	1.00		0.98	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.97			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1430	1473		1435	1536			1712			1724	1398
Flt Permitted	0.35	1.00		0.58	1.00			0.83			0.90	1.00
Satd. Flow (perm)	530	1473		883	1536			1417			1563	1398
Peak-hour factor, PHF	0.69	0.92	0.83	0.66	0.84	0.73	0.82	0.96	0.64	0.81	0.88	0.89
Adj. Flow (vph)	204	232	54	94	206	52	30	517	73	59	609	290
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	204	286	0	94	258	0	0	620	0	0	668	290
Confl. Peds. (#/hr)	7		11	11		7	14		21	21		14
Confl. Bikes (#/hr)						1			1			1
Heavy Vehicles (%)	2%	1%	0%	0%	0%	0%	0%	1%	0%	2%	2%	1%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	3 4			4			1			1	3
Permitted Phases	4			4			1			1		1
Actuated Green, G (s)	26.3	30.3		19.2	19.2			47.5			47.5	54.6
Effective Green, g (s)	26.3	30.3		19.2	19.2			47.5			47.5	54.6
Actuated g/C Ratio	0.27	0.31		0.20	0.20			0.49			0.49	0.57
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	4.0
Vehicle Extension (s)	2.0			4.0	4.0			2.0			2.0	2.0
Lane Grp Cap (vph)	210	462		175	305			697			769	790
v/s Ratio Prot	c0.07	0.19			0.17							0.03
v/s Ratio Perm	c0.19			0.11				c0.44			0.43	0.18
v/c Ratio	0.97	0.62		0.54	0.85			0.89			0.87	0.37
Uniform Delay, d1	33.6	28.2		34.7	37.2			22.1			21.7	11.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	53.5	1.7		4.0	19.6			12.9			9.9	0.1
Delay (s)	87.1	29.9		38.7	56.8			35.1			31.6	11.6
Level of Service	F	C		D	E			D			C	B
Approach Delay (s)		53.7			52.0			35.1			25.6	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	96.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

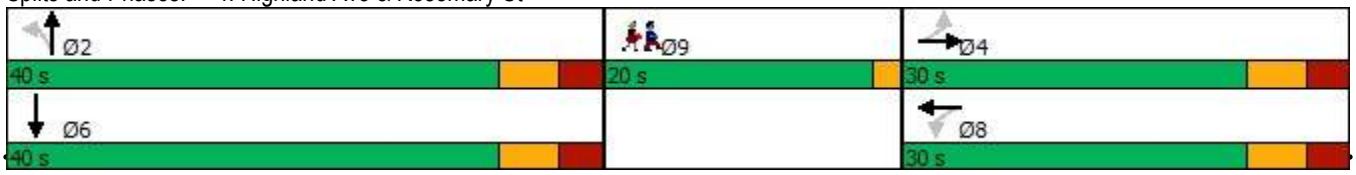
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Future Volume (vph)	45	0	192	93	49	40	100	556	0	0	626	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	9	11	9	12	11	13	12	12	16	12
Storage Length (ft)	0		25	50		0	60		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97		0.99	0.98		1.00				1.00	
Frt		0.888			0.924						0.993	
Flt Protected		0.991		0.950			0.950					
Satd. Flow (prot)	0	1313	0	1570	1399	0	1570	1750	0	0	1902	0
Flt Permitted		0.914		0.418			0.168					
Satd. Flow (perm)	0	1208	0	685	1399	0	276	1750	0	0	1902	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		258			55							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1036			474			1055			1271	
Travel Time (s)		23.5			10.8			24.0			28.9	
Confl. Peds. (#/hr)	6		9	9		6	19		20	20		19
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.83	0.92	0.74	0.93	0.90	0.73	0.79	0.91	0.92	0.92	0.87	0.84
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	54	0	259	100	54	55	127	611	0	0	720	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	313	0	100	109	0	127	611	0	0	757	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)		11			11			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.30	1.30	1.19	1.30	1.14	1.19	1.10	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2			2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	20	100		20	100		20	100			100	
Trailing Detector (ft)	0	0		0	0		0	0			0	
Detector 1 Position(ft)	0	0		0	0		0	0			0	
Detector 1 Size(ft)	20	6		20	6		20	6			6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0			12.0	
Total Split (s)	30.0	30.0		30.0	30.0		40.0	40.0			40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		44.4%	44.4%			44.4%	
Maximum Green (s)	23.0	23.0		23.0	23.0		33.0	33.0			33.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Recall Mode	None	None		None	None		Max	Max			Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.4		14.4	14.4		34.6	34.6			34.6	
Actuated g/C Ratio		0.21		0.21	0.21		0.49	0.49			0.49	
v/c Ratio		0.69		0.71	0.33		0.93	0.71			0.81	
Control Delay		15.4		55.4	17.3		91.8	25.1			29.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		15.4		55.4	17.3		91.8	25.1			29.0	
LOS		B		E	B		F	C			C	
Approach Delay		15.4			35.5			36.6			29.0	
Approach LOS		B			D			D			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 70			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 30.3		Intersection LOS: C	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Highland Ave & Rosemary St



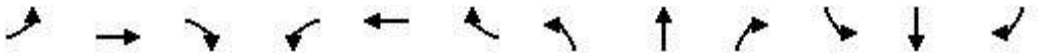
Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	10.0
Flash Dont Walk (s)	8.0
Pedestrian Calls (#/hr)	27
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	313	100	109	127	611	757
v/c Ratio	0.69	0.71	0.33	0.93	0.71	0.81
Control Delay	15.4	55.4	17.3	91.8	25.1	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	55.4	17.3	91.8	25.1	29.0
Queue Length 50th (ft)	16	33	16	35	140	188
Queue Length 95th (ft)	110	#115	67	#170	#550	#667
Internal Link Dist (ft)	956		394		975	1191
Turn Bay Length (ft)		50		60		
Base Capacity (vph)	585	236	518	136	865	940
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.42	0.21	0.93	0.71	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	186	93	49	40	89	468	0	0	488	31
Future Volume (vph)	45	0	192	93	49	40	100	556	0	0	626	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	9	9	9	11	9	12	11	13	12	12	16	12
Total Lost time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		0.97		1.00	0.98		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		0.99	1.00		1.00	1.00			1.00	
Frt		0.89		1.00	0.92		1.00	1.00			0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1306		1555	1398		1563	1750			1903	
Flt Permitted		0.91		0.42	1.00		0.17	1.00			1.00	
Satd. Flow (perm)		1204		684	1398		277	1750			1903	
Peak-hour factor, PHF	0.83	0.92	0.74	0.93	0.90	0.73	0.79	0.91	0.92	0.92	0.87	0.84
Adj. Flow (vph)	54	0	259	100	54	55	127	611	0	0	720	37
RTOR Reduction (vph)	0	205	0	0	44	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	108	0	100	65	0	127	611	0	0	757	0
Confl. Peds. (#/hr)	6		9	9		6	19		20	20		19
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		14.4		14.4	14.4		34.6	34.6			34.6	
Effective Green, g (s)		14.4		14.4	14.4		34.6	34.6			34.6	
Actuated g/C Ratio		0.20		0.20	0.20		0.49	0.49			0.49	
Clearance Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		245		139	284		135	856			931	
v/s Ratio Prot					0.05			0.35			0.40	
v/s Ratio Perm		0.09		c0.15			c0.46					
v/c Ratio		0.44		0.72	0.23		0.94	0.71			0.81	
Uniform Delay, d1		24.6		26.3	23.5		17.1	14.2			15.3	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.3		16.3	0.4		63.0	5.0			7.7	
Delay (s)		25.9		42.6	23.9		80.1	19.2			23.0	
Level of Service		C		D	C		F	B			C	
Approach Delay (s)		25.9			32.8			29.7			23.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

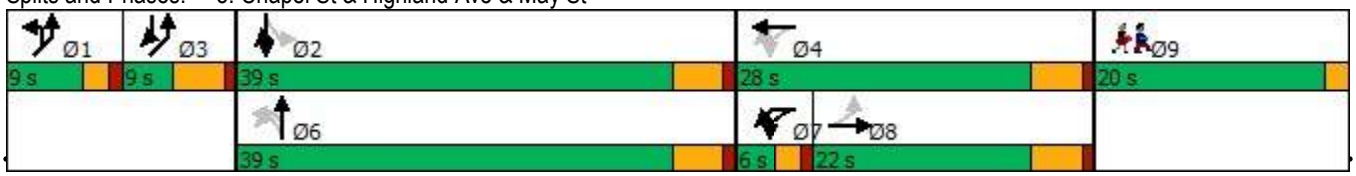
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Future Volume (vph)	61	104	28	23	10	42	129	24	4	19	161	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12	10	12	12	12	16	12
Storage Length (ft)	0		0			0		0		0		0
Storage Lanes	0		0			0		0		0		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98					0.99				0.99	
Frt		0.962					0.985				0.981	
Flt Protected		0.987					0.984				0.995	
Satd. Flow (prot)	0	1629	0	0	0	0	1542	0	0	0	1870	0
Flt Permitted		0.774					0.704				0.948	
Satd. Flow (perm)	0	1275	0	0	0	0	1100	0	0	0	1780	0
Right Turn on Red				No				Yes				No
Satd. Flow (RTOR)							6					
Link Speed (mph)		30					30				30	
Link Distance (ft)		453					923				945	
Travel Time (s)		10.3					21.0				21.5	
Confl. Peds. (#/hr)	4		5	3	3	5		4	3	12		13
Confl. Bikes (#/hr)			1	1				1				2
Peak Hour Factor	0.81	0.81	0.63	0.66	0.56	0.63	0.84	0.79	1.00	0.85	0.76	0.64
Heavy Vehicles (%)	2%	1%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	75	128	44	35	18	67	154	30	4	22	212	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	282	0	0	0	0	269	0	0	0	277	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Right	Left	Left	Left	Right
Median Width(ft)		0					0				0	
Link Offset(ft)		0					0				0	
Crosswalk Width(ft)		16					16				16	
Two way Left Turn Lane												
Headway Factor	1.14	1.10	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.14	0.97	1.14
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2		1	1	2	
Detector Template	Left	Thru			Left	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100		20	20	100	
Trailing Detector (ft)	0	0			0	0	0		0	0	0	
Detector 1 Position(ft)	0	0			0	0	0		0	0	0	
Detector 1 Size(ft)	20	6			20	20	6		20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	

Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Lane Configurations										
Traffic Volume (vph)	41	215	355	162	18	182	19	10		
Future Volume (vph)	41	221	473	162	18	263	19	10		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	12	10	11	12	10	11	11	11		
Storage Length (ft)	0		120			0	60			
Storage Lanes	0		1			2	0			
Taper Length (ft)	25					25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor		1.00			0.96	0.98				
Frt			0.850			0.982				
Flt Protected		0.990			0.950	0.958				
Satd. Flow (prot)	0	1571	1391	0	1516	1514	0	0		
Flt Permitted		0.883			0.950	0.958				
Satd. Flow (perm)	0	1398	1391	0	1454	1506	0	0		
Right Turn on Red				No				Yes		
Satd. Flow (RTOR)						125				
Link Speed (mph)		30				30				
Link Distance (ft)		644				580				
Travel Time (s)		14.6				13.2				
Confl. Peds. (#/hr)	13		3	12	12	4	13	5		
Confl. Bikes (#/hr)			1	1						
Peak Hour Factor	0.62	0.81	0.96	0.86	0.50	0.83	0.85	0.45		
Heavy Vehicles (%)	3%	0%	1%	1%	0%	1%	0%	11%		
Adj. Flow (vph)	66	273	493	188	36	317	22	22		
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	339	681	0	36	361	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Right	Left	Left	Right	Right		
Median Width(ft)		0				21				
Link Offset(ft)		0				0				
Crosswalk Width(ft)		16				16				
Two way Left Turn Lane										
Headway Factor	1.14	1.25	1.19	1.14	1.25	1.19	1.19	1.19		
Turning Speed (mph)	15		9	9	15	15	9	9		
Number of Detectors	1	2	1		1	1				
Detector Template	Left	Thru	Right		Left	Left				
Leading Detector (ft)	20	100	20		20	20				
Trailing Detector (ft)	0	0	0		0	0				
Detector 1 Position(ft)	0	0	0		0	0				
Detector 1 Size(ft)	20	6	20		20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)		94								
Detector 2 Size(ft)		6								
Detector 2 Type		Cl+Ex								

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Detector Phase	8	8			7	7	4		6	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0			2.0	2.0	6.0		6.0	6.0	6.0	
Minimum Split (s)	11.0	11.0			6.0	6.0	11.0		11.0	11.0	11.0	
Total Split (s)	22.0	22.0			6.0	6.0	28.0		39.0	39.0	39.0	
Total Split (%)	21.0%	21.0%			5.7%	5.7%	26.7%		37.1%	37.1%	37.1%	
Maximum Green (s)	17.0	17.0			3.0	3.0	23.0		34.0	34.0	34.0	
Yellow Time (s)	4.0	4.0			2.0	2.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0					0.0				0.0	
Total Lost Time (s)		5.0					5.0				5.0	
Lead/Lag	Lag	Lag			Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None			None	None	None		Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		23.2					23.2				34.4	
Actuated g/C Ratio		0.25					0.25				0.37	
v/c Ratio		0.88					0.96				0.42	
Control Delay		65.5					82.8				26.3	
Queue Delay		0.0					0.0				0.0	
Total Delay		65.5					82.8				26.3	
LOS		E					F				C	
Approach Delay		65.5					82.8				26.3	
Approach LOS		E					F				C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 93			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 63.9		Intersection LOS: E	
Intersection Capacity Utilization 79.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Chapel St & Highland Ave & May St



Lane Group	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2	Ø3	Ø9
Detector 2 Channel										
Detector 2 Extend (s)		0.0								
Turn Type	Perm	NA	custom		Prot	Prot				
Protected Phases		2	2 3		1	1 3			3	9
Permitted Phases	2									
Detector Phase	2	2	2 3		1	1 3				
Switch Phase										
Minimum Initial (s)	6.0	6.0			1.0				4.0	5.0
Minimum Split (s)	11.0	11.0			6.0				9.0	20.0
Total Split (s)	39.0	39.0			9.0				9.0	20.0
Total Split (%)	37.1%	37.1%			8.6%				9%	19%
Maximum Green (s)	34.0	34.0			6.0				4.0	18.0
Yellow Time (s)	4.0	4.0			2.0				4.0	2.0
All-Red Time (s)	1.0	1.0			1.0				1.0	0.0
Lost Time Adjust (s)		0.0			0.0					
Total Lost Time (s)		5.0			3.0					
Lead/Lag					Lead				Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0			3.0				3.0	3.0
Recall Mode	Min	Min			None				None	None
Walk Time (s)										7.0
Flash Dont Walk (s)										11.0
Pedestrian Calls (#/hr)										18
Act Effct Green (s)		34.4	43.5		6.1	15.2				
Actuated g/C Ratio		0.37	0.47		0.07	0.16				
v/c Ratio		0.66	1.05		0.36	1.03				
Control Delay		34.0	76.1		55.8	83.0				
Queue Delay		0.0	0.0		0.0	0.0				
Total Delay		34.0	76.1		55.8	83.0				
LOS		C	E		E	F				
Approach Delay		62.1				80.5				
Approach LOS		E				F				

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR	NEL2	NEL
Lane Group Flow (vph)	282	269	277	339	681	36	361
v/c Ratio	0.88	0.96	0.42	0.66	1.05	0.36	1.03
Control Delay	65.5	82.8	26.3	34.0	76.1	55.8	83.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	82.8	26.3	34.0	76.1	55.8	83.0
Queue Length 50th (ft)	141	135	102	140	334	19	131
Queue Length 95th (ft)	#309	#331	184	269	#778	31	#333
Internal Link Dist (ft)	373	843	865	564			500
Turn Bay Length (ft)					120		
Base Capacity (vph)	319	279	658	516	649	99	351
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.96	0.42	0.66	1.05	0.36	1.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	61	104	28	23	10	42	129	24	4	19	150	25
Future Volume (vph)	61	104	28	23	10	42	129	24	4	19	161	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12	10	12	12	12	16	12
Total Lost time (s)		5.0					5.0				5.0	
Lane Util. Factor		1.00					1.00				1.00	
Frpb, ped/bikes		0.99					1.00				0.99	
Flpb, ped/bikes		1.00					1.00				1.00	
Frt		0.96					0.98				0.98	
Flt Protected		0.99					0.98				1.00	
Satd. Flow (prot)		1631					1538				1869	
Flt Permitted		0.77					0.70				0.95	
Satd. Flow (perm)		1280					1101				1780	
Peak-hour factor, PHF	0.81	0.81	0.63	0.66	0.56	0.63	0.84	0.79	1.00	0.85	0.76	0.64
Adj. Flow (vph)	75	128	44	35	18	67	154	30	4	22	212	39
RTOR Reduction (vph)	0	0	0	0	0	0	5	0	0	0	0	0
Lane Group Flow (vph)	0	282	0	0	0	0	264	0	0	0	277	0
Confl. Peds. (#/hr)	4		5	3	3	5		4	3	12		13
Confl. Bikes (#/hr)			1	1				1				2
Heavy Vehicles (%)	2%	1%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Turn Type	Perm	NA			pm+pt	pm+pt	NA		Perm	Perm	NA	
Protected Phases		8			7	7	4				6	
Permitted Phases	8				4	4			6	6		
Actuated Green, G (s)		23.2					23.2				34.4	
Effective Green, g (s)		23.2					23.2				34.4	
Actuated g/C Ratio		0.25					0.25				0.37	
Clearance Time (s)		5.0					5.0				5.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		315					271				650	
v/s Ratio Prot												
v/s Ratio Perm		0.22					c0.24				0.16	
v/c Ratio		0.90					0.98				0.43	
Uniform Delay, d1		34.3					35.2				22.4	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		26.0					47.6				0.5	
Delay (s)		60.2					82.7				22.9	
Level of Service		E					F				C	
Approach Delay (s)		60.2					82.7				22.9	
Approach LOS		E					F				C	

Intersection Summary			
HCM 2000 Control Delay	76.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	23.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	41	215	355	162	18	182	19	10
Future Volume (vph)	41	221	473	162	18	263	19	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	12	10	11	11	11
Total Lost time (s)		5.0	5.0		3.0	3.0		
Lane Util. Factor		1.00	1.00		1.00	1.00		
Frpb, ped/bikes		1.00	1.00		1.00	0.99		
Flpb, ped/bikes		1.00	1.00		1.00	1.00		
Frt		1.00	0.85		1.00	0.98		
Flt Protected		0.99	1.00		0.95	0.96		
Satd. Flow (prot)		1568	1391		1516	1515		
Flt Permitted		0.88	1.00		0.95	0.96		
Satd. Flow (perm)		1398	1391		1516	1515		
Peak-hour factor, PHF	0.62	0.81	0.96	0.86	0.50	0.83	0.85	0.45
Adj. Flow (vph)	66	273	493	188	36	317	22	22
RTOR Reduction (vph)	0	0	0	0	0	108	0	0
Lane Group Flow (vph)	0	339	681	0	36	253	0	0
Confl. Peds. (#/hr)	13		3	12	12	4	13	5
Confl. Bikes (#/hr)			1	1				
Heavy Vehicles (%)	3%	0%	1%	1%	0%	1%	0%	11%
Turn Type	Perm	NA	custom		Prot	Prot		
Protected Phases		2	2 3		1	1 3		
Permitted Phases	2							
Actuated Green, G (s)		34.4	43.4		6.1	13.1		
Effective Green, g (s)		34.4	43.4		6.1	13.1		
Actuated g/C Ratio		0.37	0.46		0.06	0.14		
Clearance Time (s)		5.0			3.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		511	641		98	210		
v/s Ratio Prot			c0.49		0.02	c0.17		
v/s Ratio Perm		0.24						
v/c Ratio		0.66	1.06		0.37	1.21		
Uniform Delay, d1		25.0	25.3		42.2	40.5		
Progression Factor		1.00	1.00		1.00	1.00		
Incremental Delay, d2		3.2	53.3		2.3	129.1		
Delay (s)		28.2	78.6		44.5	169.6		
Level of Service		C	E		D	F		
Approach Delay (s)		61.9				158.2		
Approach LOS		E				F		

Intersection Summary

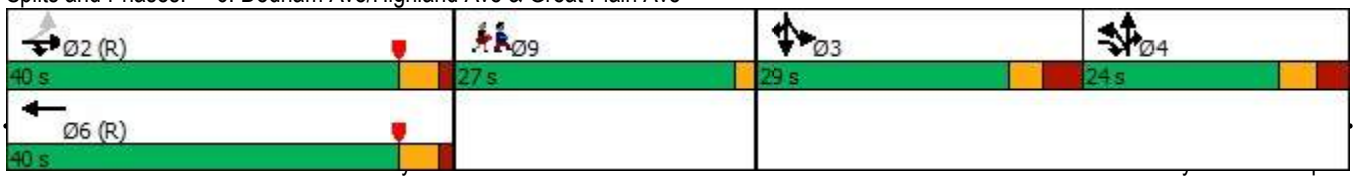
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Future Volume (vph)	34	264	300	0	320	74	208	112	72	80	192	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	10	10	10	10	10	10	10	10	12
Storage Length (ft)	0		0	0		0	0		35	0		90
Storage Lanes	0		1	0		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		0.99				0.99	
Frt			0.850		0.972				0.850			0.850
Flt Protected		0.993					0.950				0.984	
Satd. Flow (prot)	0	1569	1391	0	2887	0	1486	1596	1357	0	1560	1454
Flt Permitted		0.792					0.950				0.984	
Satd. Flow (perm)	0	1248	1391	0	2887	0	1469	1596	1357	0	1545	1454
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									95			95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		238			434			312			945	
Travel Time (s)		5.4			9.9			7.1			21.5	
Confl. Peds. (#/hr)	27		39	39		27	9		14	14		9
Confl. Bikes (#/hr)			3			2			1			
Peak Hour Factor	0.63	0.82	0.93	0.25	0.85	0.87	0.86	0.77	0.80	0.74	0.84	0.84
Heavy Vehicles (%)	7%	0%	1%	0%	1%	0%	2%	0%	0%	0%	1%	0%
Adj. Flow (vph)	54	322	323	0	376	85	242	145	90	108	229	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	376	323	0	461	0	242	145	90	0	337	76
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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.19	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1		2		1	2	1	1	2	1
Detector Template	Left	Thru	Right		Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20		100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0		0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20		6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Detector Phase	2	2	2 4		6		4	4	4	3	3	3
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0			10.0		11.5	11.5	11.5	11.5	11.5	11.5
Total Split (s)	40.0	40.0			40.0		24.0	24.0	24.0	29.0	29.0	29.0
Total Split (%)	33.3%	33.3%			33.3%		20.0%	20.0%	20.0%	24.2%	24.2%	24.2%
Maximum Green (s)	35.0	35.0			35.0		17.5	17.5	17.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5			1.5		3.0	3.0	3.0	3.5	3.5	3.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Lead/Lag							Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	C-Min	C-Min			C-Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		35.0	59.0		35.0		17.5	17.5	17.5		22.5	22.5
Actuated g/C Ratio		0.29	0.49		0.29		0.15	0.15	0.15		0.19	0.19
v/c Ratio		1.03	0.47		0.55		1.12	0.62	0.32		1.15	0.22
Control Delay		79.6	13.6		38.8		144.1	61.1	11.6		144.7	6.6
Queue Delay		24.3	2.5		1.9		0.2	0.0	0.0		0.0	0.0
Total Delay		103.9	16.0		40.7		144.3	61.1	11.6		144.7	6.6
LOS		F	B		D		F	E	B		F	A
Approach Delay		63.3			40.7			94.0			119.3	
Approach LOS		E			D			F			F	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow, Master Intersection			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.15			
Intersection Signal Delay: 76.6		Intersection LOS: E	
Intersection Capacity Utilization 77.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Dedham Ave/Highland Ave & Great Plain Ave



Lane Group	Ø9
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	100
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	376	323	461	242	145	90	337	76
v/c Ratio	1.03	0.47	0.55	1.12	0.62	0.32	1.15	0.22
Control Delay	79.6	13.6	38.8	144.1	61.1	11.6	144.7	6.6
Queue Delay	24.3	2.5	1.9	0.2	0.0	0.0	0.0	0.0
Total Delay	103.9	16.0	40.7	144.3	61.1	11.6	144.7	6.6
Queue Length 50th (ft)	~315	76	158	~215	107	0	~307	0
Queue Length 95th (ft)	#427	131	198	#356	149	31	#445	23
Internal Link Dist (ft)	158		354		232		865	
Turn Bay Length (ft)						35		90
Base Capacity (vph)	364	683	842	216	232	279	292	349
Starvation Cap Reductn	40	240	0	0	0	0	0	0
Spillback Cap Reductn	0	0	232	3	0	0	0	9
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.73	0.76	1.14	0.63	0.32	1.15	0.22

Intersection Summary

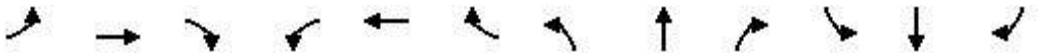
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	264	289	0	320	74	190	101	72	80	186	64
Future Volume (vph)	34	264	300	0	320	74	208	112	72	80	192	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	11	10	10	10	10	10	10	10	10	12
Total Lost time (s)		5.0	5.0		5.0		6.5	6.5	6.5		6.5	6.5
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected		0.99	1.00		1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)		1564	1391		2888		1486	1596	1357		1560	1454
Flt Permitted		0.79	1.00		1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (perm)		1248	1391		2888		1486	1596	1357		1560	1454
Peak-hour factor, PHF	0.63	0.82	0.93	0.25	0.85	0.87	0.86	0.77	0.80	0.74	0.84	0.84
Adj. Flow (vph)	54	322	323	0	376	85	242	145	90	108	229	76
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	77	0	0	62
Lane Group Flow (vph)	0	376	323	0	461	0	242	145	13	0	337	14
Confl. Peds. (#/hr)	27		39	39		27	9		14	14		9
Confl. Bikes (#/hr)			3			2			1			
Heavy Vehicles (%)	7%	0%	1%	0%	1%	0%	2%	0%	0%	0%	1%	0%
Turn Type	Perm	NA	pt+ov		NA		Split	NA	Prot	Split	NA	Prot
Protected Phases		2	2 4		6		4	4	4	3	3	3
Permitted Phases	2											
Actuated Green, G (s)		35.0	59.0		35.0		17.5	17.5	17.5		22.5	22.5
Effective Green, g (s)		35.0	52.5		35.0		17.5	17.5	17.5		22.5	22.5
Actuated g/C Ratio		0.29	0.44		0.29		0.15	0.15	0.15		0.19	0.19
Clearance Time (s)		5.0			5.0		6.5	6.5	6.5		6.5	6.5
Vehicle Extension (s)		2.0			2.0		2.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		364	608		842		216	232	197		292	272
v/s Ratio Prot			0.23		0.16		c0.16	0.09	0.01		c0.22	0.01
v/s Ratio Perm		c0.30										
v/c Ratio		1.03	0.53		0.55		1.12	0.62	0.07		1.15	0.05
Uniform Delay, d1		42.5	24.7		35.8		51.2	48.2	44.2		48.8	40.0
Progression Factor		0.61	0.56		1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		51.0	0.4		2.6		97.3	3.7	0.1		101.0	0.0
Delay (s)		77.1	14.3		38.4		148.6	51.9	44.3		149.8	40.0
Level of Service		E	B		D		F	D	D		F	D
Approach Delay (s)		48.0			38.4			99.5			129.6	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	74.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



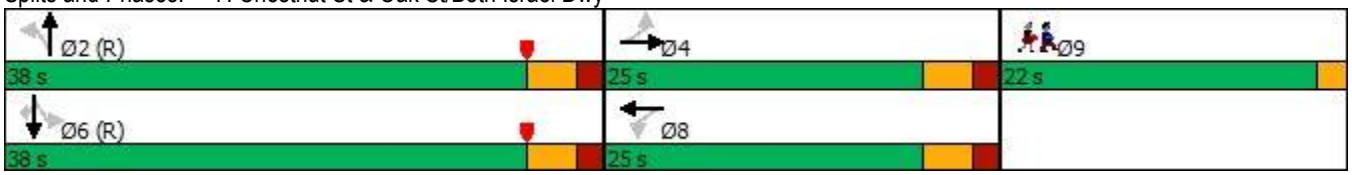
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Future Volume (vph)	57	1	128	6	2	9	102	458	12	4	641	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	8	8	11	11	11	9	9	12	12	9	9
Storage Length (ft)	0		0	0		0	80		0	0		150
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.907			0.929			0.996				0.850
Flt Protected		0.985			0.982		0.950					
Satd. Flow (prot)	0	1298	0	0	1478	0	1433	1503	0	0	1509	1283
Flt Permitted		0.899			0.899		0.217				0.998	
Satd. Flow (perm)	0	1185	0	0	1353	0	327	1503	0	0	1506	1283
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								2				59
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			314			227			439	
Travel Time (s)		13.8			7.1			5.2			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	1	139	7	2	10	111	498	13	4	697	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	202	0	0	19	0	111	511	0	0	701	85
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			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.37	1.37	1.37	1.19	1.19	1.19	1.30	1.30	1.14	1.14	1.30	1.30
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	25.0	25.0		25.0	25.0		38.0	38.0		38.0	38.0	38.0
Total Split (%)	29.4%	29.4%		29.4%	29.4%		44.7%	44.7%		44.7%	44.7%	44.7%
Maximum Green (s)	20.0	20.0		20.0	20.0		33.0	33.0		33.0	33.0	33.0
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	3.2
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		20.0			20.0		46.2	46.2			46.2	46.2
Actuated g/C Ratio		0.24			0.24		0.54	0.54			0.54	0.54
v/c Ratio		0.73			0.06		0.63	0.63			0.86	0.12
Control Delay		47.1			26.0		40.3	21.9			34.5	15.7
Queue Delay		0.0			0.0		0.0	0.0			0.6	0.0
Total Delay		47.1			26.0		40.3	21.9			35.1	15.7
LOS		D			C		D	C			D	B
Approach Delay		47.1			26.0			25.2			33.0	
Approach LOS		D			C			C			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 31.7		Intersection LOS: C	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Chestnut St & Oak St/Beth Israel Dwy



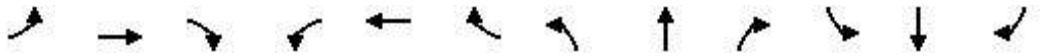
Lane Group	Ø9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	22.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	14.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	202	19	111	511	701	85
v/c Ratio	0.73	0.06	0.63	0.63	0.86	0.12
Control Delay	47.1	26.0	40.3	21.9	34.5	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.6	0.0
Total Delay	47.1	26.0	40.3	21.9	35.1	15.7
Queue Length 50th (ft)	100	8	28	129	112	1
Queue Length 95th (ft)	#202	25	#156	#436	m#619	m42
Internal Link Dist (ft)	526	234		147	359	
Turn Bay Length (ft)			80			150
Base Capacity (vph)	278	318	177	817	818	724
Starvation Cap Reductn	0	0	0	0	16	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.06	0.63	0.63	0.87	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1	128	6	2	9	102	366	12	4	494	78
Future Volume (vph)	57	1	128	6	2	9	102	458	12	4	641	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	11	11	11	9	9	12	12	9	9
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	1.00
Frt		0.91			0.93		1.00	1.00			1.00	0.85
Flt Protected		0.98			0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1298			1478		1433	1503			1508	1282
Flt Permitted		0.90			0.90		0.22	1.00			1.00	1.00
Satd. Flow (perm)		1185			1353		327	1503			1506	1282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	1	139	7	2	10	111	498	13	4	697	85
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	28
Lane Group Flow (vph)	0	202	0	0	19	0	111	510	0	0	701	57
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		20.0			20.0		45.0	45.0			45.0	45.0
Effective Green, g (s)		20.0			20.0		45.0	45.0			45.0	45.0
Actuated g/C Ratio		0.24			0.24		0.53	0.53			0.53	0.53
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		278			318		173	795			797	678
v/s Ratio Prot								0.34				
v/s Ratio Perm		c0.17			0.01		0.34				c0.47	0.04
v/c Ratio		0.73			0.06		0.64	0.64			0.88	0.08
Uniform Delay, d1		30.0			25.2		14.3	14.3			17.6	9.9
Progression Factor		1.00			1.00		1.00	1.00			1.31	2.29
Incremental Delay, d2		15.3			0.4		16.9	4.0			9.4	0.2
Delay (s)		45.3			25.6		31.1	18.2			32.5	22.7
Level of Service		D			C		C	B			C	C
Approach Delay (s)		45.3			25.6			20.5			31.4	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

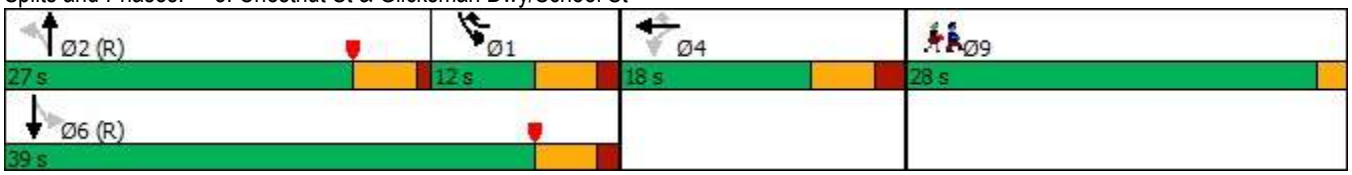
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Future Volume (vph)	0	0	0	179	6	70	6	437	215	63	584	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	9	13	9	12	12	9	12	12
Storage Length (ft)	0		0	0		150	40		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			70			70			100		
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						0.850		0.950			0.999	
Flt Protected					0.954		0.950			0.950		
Satd. Flow (prot)	0	0	0	0	1439	1473	1433	1593	0	1433	1675	0
Flt Permitted					0.954		0.269			0.173		
Satd. Flow (perm)	0	0	0	0	1439	1473	406	1593	0	261	1675	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						76		28				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		162			420			439			782	
Travel Time (s)		3.7			9.5			10.0			17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	195	7	76	7	475	234	68	635	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	202	76	7	709	0	68	638	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.30	1.30	1.10	1.30	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2		1	2	
Detector Template				Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)				20	100	20	20	100		20	100	
Trailing Detector (ft)				0	0	0	0	0		0	0	
Detector 1 Position(ft)				0	0	0	0	0		0	0	
Detector 1 Size(ft)				20	6	20	20	6		20	6	
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				4		4	2			6		
Detector Phase				4	4	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)				6.0	6.0	6.0	2.0	2.0		6.0	10.0	
Minimum Split (s)				12.0	12.0	11.5	7.0	7.0		11.5	15.5	
Total Split (s)				18.0	18.0	12.0	27.0	27.0		12.0	39.0	
Total Split (%)				21.2%	21.2%	14.1%	31.8%	31.8%		14.1%	45.9%	
Maximum Green (s)				12.0	12.0	6.5	22.0	22.0		6.5	33.5	
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)				2.0	2.0	1.5	1.0	1.0		1.5	1.5	
Lost Time Adjust (s)					0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lead/Lag						Lag	Lead	Lead		Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode				None	None	None	C-Min	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					12.0	22.1	41.4	41.4		51.5	50.3	
Actuated g/C Ratio					0.14	0.26	0.49	0.49		0.61	0.59	
v/c Ratio					1.00	0.17	0.04	0.90		0.28	0.64	
Control Delay					101.8	7.0	12.2	35.5		22.6	21.1	
Queue Delay					38.8	0.0	0.0	0.0		0.0	0.2	
Total Delay					140.6	7.0	12.2	35.5		22.6	21.3	
LOS					F	A	B	D		C	C	
Approach Delay					104.0			35.3			21.4	
Approach LOS					F			D			C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 9 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 40.8		Intersection LOS: D	
Intersection Capacity Utilization 64.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Chestnut St & Glicksman Dwy/School St



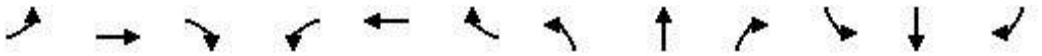
Lane Group	Ø9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	33%
Maximum Green (s)	26.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	8.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	202	76	7	709	68	638
v/c Ratio	1.00	0.17	0.04	0.90	0.28	0.64
Control Delay	101.8	7.0	12.2	35.5	22.6	21.1
Queue Delay	38.8	0.0	0.0	0.0	0.0	0.2
Total Delay	140.6	7.0	12.2	35.5	22.6	21.3
Queue Length 50th (ft)	109	0	1	270	9	126
Queue Length 95th (ft)	#245	30	m3	#740	49	#548
Internal Link Dist (ft)	340			359		702
Turn Bay Length (ft)		150	40		115	
Base Capacity (vph)	203	407	198	790	248	991
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	67	0	0	0	0	48
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.49	0.19	0.04	0.90	0.27	0.68

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	179	6	70	6	345	215	63	437	3
Future Volume (vph)	0	0	0	179	6	70	6	437	215	63	584	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	9	9	13	9	12	12	9	12	12
Total Lost time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Lane Util. Factor					1.00	1.00	1.00	1.00		1.00	1.00	
Frt					1.00	0.85	1.00	0.95		1.00	1.00	
Flt Protected					0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)					1439	1472	1433	1593		1433	1675	
Flt Permitted					0.95	1.00	0.27	1.00		0.17	1.00	
Satd. Flow (perm)					1439	1472	406	1593		261	1675	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	195	7	76	7	475	234	68	635	3
RTOR Reduction (vph)	0	0	0	0	0	61	0	15	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	202	15	7	694	0	68	638	0
Turn Type				Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases					4	1		2		1	6	
Permitted Phases				4		4	2			6		
Actuated Green, G (s)					12.0	17.0	39.1	39.1		49.1	49.1	
Effective Green, g (s)					12.0	17.0	39.1	39.1		49.1	49.1	
Actuated g/C Ratio					0.14	0.20	0.46	0.46		0.58	0.58	
Clearance Time (s)					6.0	5.5	5.0	5.0		5.5	5.5	
Vehicle Extension (s)					3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)					203	389	186	732		219	967	
v/s Ratio Prot						0.00		c0.44		0.02	c0.38	
v/s Ratio Perm					0.14	0.01	0.02			0.16		
v/c Ratio					1.00	0.04	0.04	0.95		0.31	0.66	
Uniform Delay, d1					36.5	27.4	12.6	22.0		24.5	12.2	
Progression Factor					1.00	1.00	0.53	0.61		1.00	1.00	
Incremental Delay, d2					61.4	0.0	0.3	20.8		0.8	3.5	
Delay (s)					97.9	27.5	7.0	34.2		25.3	15.8	
Level of Service					F	C	A	C		C	B	
Approach Delay (s)		0.0			78.6			33.9			16.7	
Approach LOS		A			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	89	594	589	27	14	217
Future Volume (vph)	89	619	604	27	14	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.989		0.878	
Flt Protected		0.992			0.995	
Satd. Flow (prot)	0	2978	2972	0	1433	0
Flt Permitted		0.992			0.995	
Satd. Flow (perm)	0	2978	2972	0	1433	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		180	394		416	
Travel Time (s)		4.1	9.0		9.5	
Confl. Peds. (#/hr)	23			23	1	23
Peak Hour Factor	0.79	0.98	0.92	0.52	0.54	0.90
Heavy Vehicles (%)	1%	1%	1%	0%	8%	0%
Adj. Flow (vph)	113	632	657	52	26	241
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	745	709	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.25	1.25	1.25	1.19	1.19
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	594	589	27	14	217
Future Vol, veh/h	89	619	604	27	14	217
Conflicting Peds, #/hr	23	0	0	23	1	23
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	79	98	92	52	54	90
Heavy Vehicles, %	1	1	1	0	8	0
Mvmt Flow	113	632	657	52	26	241

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	732	0	-	0	1249	401
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	543	-
Critical Hdwy	4.12	-	-	-	6.96	6.9
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	2.21	-	-	-	3.58	3.3
Pot Cap-1 Maneuver	875	-	-	-	157	604
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	530	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	857	-	-	-	120	581
Mov Cap-2 Maneuver	-	-	-	-	120	-
Stage 1	-	-	-	-	340	-
Stage 2	-	-	-	-	519	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	27
HCM LOS			D

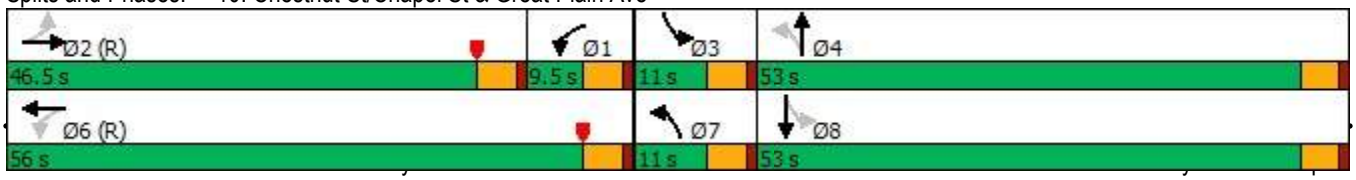
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	857	-	-	-	423
HCM Lane V/C Ratio	0.131	-	-	-	0.631
HCM Control Delay (s)	9.8	0.7	-	-	27
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.5	-	-	-	4.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	501	68	104	442	29	95	178	62	24	305	78
Future Volume (vph)	48	502	83	122	442	29	104	250	73	24	418	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	175		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.99			0.99		0.99	0.99	
Frt		0.979			0.991			0.967			0.972	
Flt Protected		0.996			0.990		0.950			0.950		
Satd. Flow (prot)	0	2866	0	0	2934	0	1501	1577	0	1516	1579	0
Flt Permitted		0.774			0.603		0.156			0.426		
Satd. Flow (perm)	0	2226	0	0	1774	0	247	1577	0	675	1579	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			238			782			424	
Travel Time (s)		9.0			5.4			17.8			9.6	
Confl. Peds. (#/hr)	18		48	48		18	29		13	13		29
Confl. Bikes (#/hr)												4
Peak Hour Factor	0.80	0.96	0.86	0.84	0.88	0.72	0.80	0.84	0.88	0.69	0.87	0.74
Heavy Vehicles (%)	0%	1%	2%	1%	1%	4%	1%	1%	0%	0%	1%	0%
Adj. Flow (vph)	60	523	97	145	502	40	130	298	83	35	480	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	680	0	0	687	0	130	381	0	35	592	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			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.19	1.19	1.25	1.19	1.19
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	39.0	39.0		9.5	50.0		11.0	34.5		11.0	34.5	
Total Split (s)	46.5	46.5		9.5	56.0		11.0	53.0		11.0	53.0	
Total Split (%)	38.8%	38.8%		7.9%	46.7%		9.2%	44.2%		9.2%	44.2%	
Maximum Green (s)	42.0	42.0		5.0	51.5		6.5	48.5		6.5	48.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lead		Lag			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0			8.0			8.0	
Flash Dont Walk (s)	16.0	16.0			16.0			22.0			22.0	
Pedestrian Calls (#/hr)	33	33			33			21			21	
Act Effct Green (s)		51.9			51.9		56.4	52.5		53.4	47.1	
Actuated g/C Ratio		0.43			0.43		0.47	0.44		0.44	0.39	
v/c Ratio		0.71			0.90		0.67	0.55		0.10	0.95	
Control Delay		33.0			25.4		37.1	29.8		16.4	62.5	
Queue Delay		1.4			6.6		0.0	0.2		0.0	0.0	
Total Delay		34.4			32.0		37.1	30.0		16.4	62.5	
LOS		C			C		D	C		B	E	
Approach Delay		34.4			32.0			31.8			59.9	
Approach LOS		C			C			C			E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 39.6		Intersection LOS: D	
Intersection Capacity Utilization 84.0%		ICU Level of Service E	
Analysis Period (min) 15			

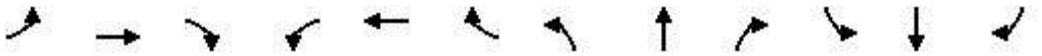
Splits and Phases: 10: Chestnut St/Chapel St & Great Plain Ave



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	680	687	130	381	35	592
v/c Ratio	0.71	0.90	0.67	0.55	0.10	0.95
Control Delay	33.0	25.4	37.1	29.8	16.4	62.5
Queue Delay	1.4	6.6	0.0	0.2	0.0	0.0
Total Delay	34.4	32.0	37.1	30.0	16.4	62.5
Queue Length 50th (ft)	223	285	54	228	14	431
Queue Length 95th (ft)	298	m319	#85	303	24	#624
Internal Link Dist (ft)	314	158		702		344
Turn Bay Length (ft)			175		100	
Base Capacity (vph)	962	772	194	690	346	638
Starvation Cap Reductn	0	59	0	0	0	0
Spillback Cap Reductn	128	0	0	30	13	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.96	0.67	0.58	0.11	0.93

Intersection Summary

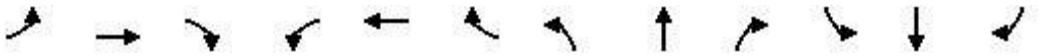
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	501	68	104	442	29	95	178	62	24	305	78
Future Volume (vph)	48	502	83	122	442	29	104	250	73	24	418	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	11	11	10	11	11
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.97		1.00	0.97	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2862			2911		1501	1577		1512	1579	
Flt Permitted		0.77			0.60		0.16	1.00		0.43	1.00	
Satd. Flow (perm)		2224			1775		246	1577		678	1579	
Peak-hour factor, PHF	0.80	0.96	0.86	0.84	0.88	0.72	0.80	0.84	0.88	0.69	0.87	0.74
Adj. Flow (vph)	60	523	97	145	502	40	130	298	83	35	480	112
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	680	0	0	687	0	130	381	0	35	592	0
Confl. Peds. (#/hr)	18		48	48		18	29		13	13		29
Confl. Bikes (#/hr)												4
Heavy Vehicles (%)	0%	1%	2%	1%	1%	4%	1%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		50.1			50.1		60.0	52.5		52.8	48.9	
Effective Green, g (s)		50.1			50.1		60.0	52.5		52.8	48.9	
Actuated g/C Ratio		0.42			0.42		0.50	0.44		0.44	0.41	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		928			741		201	689		325	643	
v/s Ratio Prot							c0.04	0.24		0.00	c0.38	
v/s Ratio Perm		0.31			c0.39		0.28			0.04		
v/c Ratio		0.73			0.93		0.65	0.55		0.11	0.92	
Uniform Delay, d1		29.3			33.2		22.3	25.0		19.7	33.7	
Progression Factor		1.00			0.39		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.1			13.3		7.0	1.0		0.1	18.6	
Delay (s)		34.4			26.4		29.3	26.0		19.8	52.3	
Level of Service		C			C		C	C		B	D	
Approach Delay (s)		34.4			26.4			26.8			50.5	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	109	9	209	120	7	14	4	105	7	0	2
Future Volume (vph)	3	109	9	209	120	7	14	4	105	7	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	14	12	12	13	12	12	10	12
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
Ped Bike Factor												
Frt		0.987			0.997			0.898			0.958	
Flt Protected		0.997			0.969			0.992			0.967	
Satd. Flow (prot)	0	1724	0	0	1751	0	0	1533	0	0	1479	0
Flt Permitted		0.997			0.969			0.992			0.967	
Satd. Flow (perm)	0	1724	0	0	1751	0	0	1533	0	0	1479	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		521			453			566			491	
Travel Time (s)		11.8			10.3			12.9			11.2	
Confl. Peds. (#/hr)	6		4	4		6	5		3	3		5
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.38	0.95	0.67	0.80	0.85	0.75	0.54	0.33	0.88	0.38	0.92	0.25
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	25%	1%	0%	0%	0%
Adj. Flow (vph)	8	115	13	261	141	9	26	12	119	18	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	136	0	0	411	0	0	157	0	0	26	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	1.14	1.10	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.25	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	109	9	209	120	7	14	4	105	7	0	2
Future Vol, veh/h	3	109	9	209	120	7	14	4	105	7	0	2
Conflicting Peds, #/hr	6	0	4	4	0	6	5	0	3	3	0	5
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	38	95	67	80	85	75	54	33	88	38	92	25
Heavy Vehicles, %	0	1	0	1	0	0	0	25	1	0	0	0
Mvmt Flow	8	115	13	261	141	9	26	12	119	18	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	156	0	0	132	0	0	819	820	129	880	822	157
Stage 1	-	-	-	-	-	-	142	142	-	674	674	-
Stage 2	-	-	-	-	-	-	677	678	-	206	148	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.1	6.75	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.75	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.75	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.5	4.225	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1436	-	-	1459	-	-	297	285	924	270	311	894
Stage 1	-	-	-	-	-	-	866	737	-	448	457	-
Stage 2	-	-	-	-	-	-	446	418	-	801	779	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1429	-	-	1453	-	-	247	226	917	189	246	885
Mov Cap-2 Maneuver	-	-	-	-	-	-	247	226	-	189	246	-
Stage 1	-	-	-	-	-	-	857	730	-	443	366	-
Stage 2	-	-	-	-	-	-	354	334	-	679	771	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	5.1	14.3	21.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	545	1429	-	-	1453	-	-	248
HCM Lane V/C Ratio	0.289	0.006	-	-	0.18	-	-	0.107
HCM Control Delay (s)	14.3	7.5	0	-	8	0	-	21.2
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.7	-	-	0.4

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	74	93	94	60	88	189
Future Volume (vph)	74	93	94	71	94	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.933		0.918	
Flt Protected		0.981			0.981	
Satd. Flow (prot)	0	1678	1418	0	1633	0
Flt Permitted		0.981			0.981	
Satd. Flow (perm)	0	1678	1418	0	1633	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		525	1036		802	
Travel Time (s)		11.9	23.5		18.2	
Confl. Peds. (#/hr)	12			12	2	1
Peak Hour Factor	0.84	0.66	0.79	0.61	0.65	0.84
Heavy Vehicles (%)	0%	0%	4%	6%	0%	1%
Adj. Flow (vph)	88	141	119	116	145	225
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	229	235	0	370	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		14	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.25	1.25	1.05	1.05
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

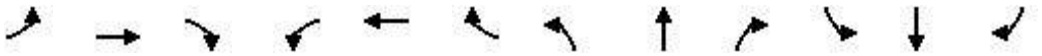
Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	93	94	60	88	189
Future Vol, veh/h	74	93	94	71	94	189
Conflicting Peds, #/hr	12	0	0	12	2	1
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	84	66	79	61	65	84
Heavy Vehicles, %	0	0	4	6	0	1
Mvmt Flow	88	141	119	116	145	225

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	247	0	-	0	508	190
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	319	-
Critical Hdwy	4.1	-	-	-	6.4	6.21
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.309
Pot Cap-1 Maneuver	1331	-	-	-	528	854
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1313	-	-	-	477	842
Mov Cap-2 Maneuver	-	-	-	-	477	-
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	731	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	17.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1313	-	-	-	648
HCM Lane V/C Ratio	0.067	-	-	-	0.57
HCM Control Delay (s)	7.9	0	-	-	17.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	3.6

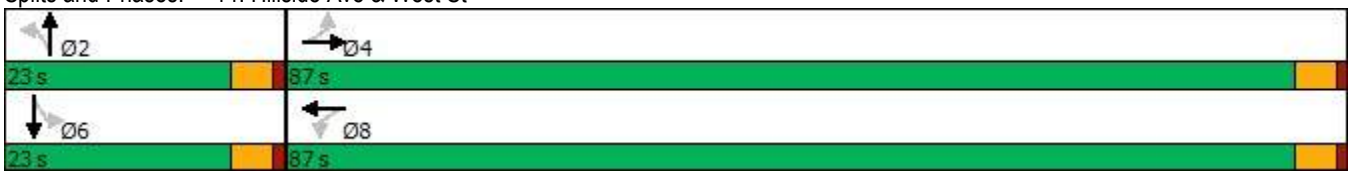


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	267	20	137	312	13	13	63	86	13	92	34
Future Volume (vph)	104	267	20	163	312	13	13	64	102	13	93	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	12	12	14	12	12	13	12	12	13	12
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
Ped Bike Factor		0.99			1.00			0.99			0.99	
Frt		0.992			0.995			0.930			0.963	
Flt Protected		0.975			0.985			0.995			0.994	
Satd. Flow (prot)	0	1478	0	0	1784	0	0	1595	0	0	1677	0
Flt Permitted		0.586			0.645			0.919			0.838	
Satd. Flow (perm)	0	883	0	0	1166	0	0	1472	0	0	1413	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			5			42			15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		459			455			883			496	
Travel Time (s)		10.4			10.3			20.1			11.3	
Confl. Peds. (#/hr)	11		8	8		11	3		4	4		3
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.26	0.77	0.45	0.97	0.85	0.60	0.60	0.75	0.89	0.60	0.87	0.71
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%
Adj. Flow (vph)	400	347	44	168	367	22	22	85	115	22	107	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	791	0	0	557	0	0	222	0	0	177	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	1.14	1.30	1.14	1.14	1.05	1.14	1.14	1.10	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	87.0	87.0		87.0	87.0		23.0	23.0		23.0	23.0	
Total Split (%)	79.1%	79.1%		79.1%	79.1%		20.9%	20.9%		20.9%	20.9%	
Maximum Green (s)	82.5	82.5		82.5	82.5		18.5	18.5		18.5	18.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	20	20		20	20		20	20		20	20	
Act Effct Green (s)		82.6			82.6			16.4			16.4	
Actuated g/C Ratio		0.76			0.76			0.15			0.15	
v/c Ratio		1.17			0.62			0.86			0.78	
Control Delay		108.8			9.9			65.5			63.5	
Queue Delay		0.0			1.7			0.0			0.0	
Total Delay		108.8			11.6			65.5			63.5	
LOS		F			B			E			E	
Approach Delay		108.8			11.6			65.5			63.5	
Approach LOS		F			B			E			E	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 110			
Actuated Cycle Length: 108			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.17			
Intersection Signal Delay: 67.7		Intersection LOS: E	
Intersection Capacity Utilization 59.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 14: Hillside Ave & West St

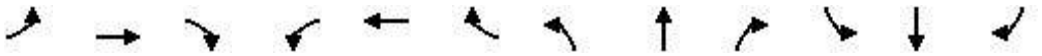


Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	791	557	222	177
v/c Ratio	1.17	0.62	0.86	0.78
Control Delay	108.8	9.9	65.5	63.5
Queue Delay	0.0	1.7	0.0	0.0
Total Delay	108.8	11.6	65.5	63.5
Queue Length 50th (ft)	~678	158	124	109
Queue Length 95th (ft)	#711	227	166	#194
Internal Link Dist (ft)	379	375	803	416
Turn Bay Length (ft)				
Base Capacity (vph)	677	892	287	254
Starvation Cap Reductn	0	181	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.17	0.78	0.77	0.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	267	20	137	312	13	13	63	86	13	92	34
Future Volume (vph)	104	267	20	163	312	13	13	64	102	13	93	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	12	12	14	12	12	13	12	12	13	12
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			0.99	
Flpb, ped/bikes		0.99			1.00			1.00			1.00	
Frt		0.99			0.99			0.93			0.96	
Flt Protected		0.98			0.99			1.00			0.99	
Satd. Flow (prot)		1470			1780			1594			1677	
Flt Permitted		0.59			0.64			0.92			0.84	
Satd. Flow (perm)		884			1165			1473			1414	
Peak-hour factor, PHF	0.26	0.77	0.45	0.97	0.85	0.60	0.60	0.75	0.89	0.60	0.87	0.71
Adj. Flow (vph)	400	347	44	168	367	22	22	85	115	22	107	48
RTOR Reduction (vph)	0	2	0	0	1	0	0	36	0	0	13	0
Lane Group Flow (vph)	0	789	0	0	556	0	0	186	0	0	164	0
Confl. Peds. (#/hr)	11		8	8		11	3		4	4		3
Confl. Bikes (#/hr)									3			1
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		82.6			82.6			16.4			16.4	
Effective Green, g (s)		82.6			82.6			16.4			16.4	
Actuated g/C Ratio		0.76			0.76			0.15			0.15	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		676			891			223			214	
v/s Ratio Prot												
v/s Ratio Perm		c0.89			0.48			c0.13			0.12	
v/c Ratio		1.17			0.62			0.84			0.77	
Uniform Delay, d1		12.7			5.7			44.5			44.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		90.7			1.4			22.8			15.1	
Delay (s)		103.4			7.1			67.3			59.1	
Level of Service		F			A			E			E	
Approach Delay (s)		103.4			7.1			67.3			59.1	
Approach LOS		F			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	63.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	168	65	30	150	39	34	71	23	19	43	12
Future Volume (vph)	13	185	66	30	173	39	35	71	23	19	43	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	12	15	12	12	13	12
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
Ped Bike Factor												
Frt		0.964			0.980			0.981			0.978	
Flt Protected		0.997			0.993			0.987			0.987	
Satd. Flow (prot)	0	1633	0	0	1526	0	0	1807	0	0	1632	0
Flt Permitted		0.997			0.993			0.987			0.987	
Satd. Flow (perm)	0	1633	0	0	1526	0	0	1807	0	0	1632	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			695			637			578	
Travel Time (s)		9.3			15.8			14.5			13.1	
Confl. Peds. (#/hr)	1		6	6		1			3	3		
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.60	0.79	0.70	0.68	0.85	0.88	0.71	0.64	0.88	0.71	0.70	0.69
Heavy Vehicles (%)	0%	1%	0%	4%	1%	3%	3%	0%	0%	12%	0%	9%
Adj. Flow (vph)	22	234	94	44	204	44	49	111	26	27	61	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	350	0	0	292	0	0	186	0	0	105	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	1.14	1.14	1.14	1.14	1.25	1.14	1.14	1.01	1.14	1.14	1.10	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	168	65	30	150	39	34	71	23	19	43	12
Future Vol, veh/h	13	185	66	30	173	39	35	71	23	19	43	12
Conflicting Peds, #/hr	1	0	6	6	0	1	0	0	3	3	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	60	79	70	68	85	88	71	64	88	71	70	69
Heavy Vehicles, %	0	1	0	4	1	3	3	0	0	12	0	9
Mvmt Flow	22	234	94	44	204	44	49	111	26	27	61	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	249	0	0	334	0	0	684	668	290	712	693	227
Stage 1	-	-	-	-	-	-	331	331	-	315	315	-
Stage 2	-	-	-	-	-	-	353	337	-	397	378	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.13	6.5	6.2	7.22	6.5	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	6.22	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	6.22	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.527	4	3.3	3.608	4	3.381
Pot Cap-1 Maneuver	1328	-	-	1214	-	-	361	382	754	335	369	795
Stage 1	-	-	-	-	-	-	680	649	-	675	659	-
Stage 2	-	-	-	-	-	-	662	645	-	609	619	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1327	-	-	1205	-	-	288	355	747	233	343	794
Mov Cap-2 Maneuver	-	-	-	-	-	-	288	355	-	233	343	-
Stage 1	-	-	-	-	-	-	661	631	-	660	630	-
Stage 2	-	-	-	-	-	-	559	617	-	473	602	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.2	25.4	20.7
HCM LOS			D	C

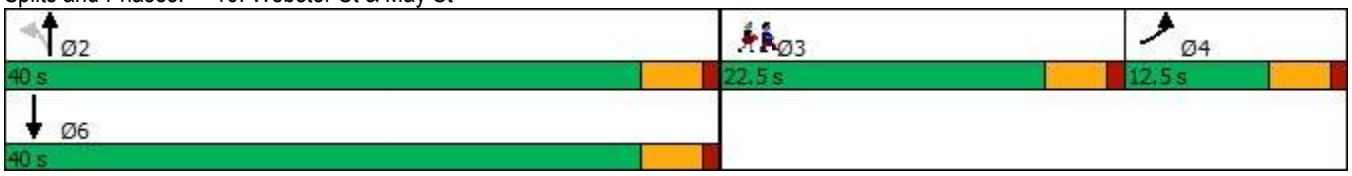
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	359	1327	-	-	1205	-	-	334
HCM Lane V/C Ratio	0.519	0.016	-	-	0.037	-	-	0.316
HCM Control Delay (s)	25.4	7.8	0	-	8.1	0	-	20.7
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	2.9	0.1	-	-	0.1	-	-	1.3

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	103	73	38	340	604	180	
Future Volume (vph)	103	73	38	340	605	180	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.98			1.00	0.99		
Frt	0.943				0.969		
Flt Protected	0.972			0.994			
Satd. Flow (prot)	1548	0	0	1700	1635	0	
Flt Permitted	0.972			0.736			
Satd. Flow (perm)	1523	0	0	1258	1635	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	39				27		
Link Speed (mph)	30			30	30		
Link Distance (ft)	756			591	599		
Travel Time (s)	17.2			13.4	13.6		
Confl. Peds. (#/hr)	6		5			5	
Peak Hour Factor	0.86	0.83	0.77	0.87	0.87	0.87	
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%	
Adj. Flow (vph)	120	88	49	391	695	207	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	208	0	0	440	902	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	1		1	2	2		
Detector Template	Left		Left	Thru	Thru		
Leading Detector (ft)	20		20	100	100		
Trailing Detector (ft)	0		0	0	0		
Detector 1 Position(ft)	0		0	0	0		
Detector 1 Size(ft)	20		20	6	6		
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		
Detector 2 Position(ft)				94	94		
Detector 2 Size(ft)				6	6		
Detector 2 Type				Cl+Ex	Cl+Ex		
Detector 2 Channel							
Detector 2 Extend (s)				0.0	0.0		
Turn Type	Prot		Perm	NA	NA		
Protected Phases	4			2	6		3
Permitted Phases			2				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3
Detector Phase	4		2	2	6		
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0		5.0
Minimum Split (s)	9.5		9.5	9.5	9.5		22.5
Total Split (s)	12.5		40.0	40.0	40.0		22.5
Total Split (%)	16.7%		53.3%	53.3%	53.3%		30%
Maximum Green (s)	8.0		35.5	35.5	35.5		18.0
Yellow Time (s)	3.5		3.5	3.5	3.5		3.5
All-Red Time (s)	1.0		1.0	1.0	1.0		1.0
Lost Time Adjust (s)	0.0			0.0	0.0		
Total Lost Time (s)	4.5			4.5	4.5		
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0
Recall Mode	None		Min	Min	Min		None
Walk Time (s)							7.0
Flash Dont Walk (s)							11.0
Pedestrian Calls (#/hr)							10
Act Effct Green (s)	8.2			40.6	40.6		
Actuated g/C Ratio	0.13			0.66	0.66		
v/c Ratio	0.87			0.53	0.83		
Control Delay	58.4			11.4	19.8		
Queue Delay	0.0			0.0	0.0		
Total Delay	58.4			11.4	19.8		
LOS	E			B	B		
Approach Delay	58.4			11.4	19.8		
Approach LOS	E			B	B		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 75			
Actuated Cycle Length: 61.6			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 22.6		Intersection LOS: C	
Intersection Capacity Utilization 73.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 16: Webster St & May St



Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	208	440	902
v/c Ratio	0.87	0.53	0.83
Control Delay	58.4	11.4	19.8
Queue Delay	0.0	0.0	0.0
Total Delay	58.4	11.4	19.8
Queue Length 50th (ft)	53	52	147
Queue Length 95th (ft)	#202	260	#680
Internal Link Dist (ft)	676	511	519
Turn Bay Length (ft)			
Base Capacity (vph)	238	828	1086
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.87	0.53	0.83

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	103	73	38	340	604	180
Future Volume (vph)	103	73	38	340	605	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.99	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	0.94			1.00	0.97	
Flt Protected	0.97			0.99	1.00	
Satd. Flow (prot)	1547			1700	1635	
Flt Permitted	0.97			0.74	1.00	
Satd. Flow (perm)	1547			1258	1635	
Peak-hour factor, PHF	0.86	0.83	0.77	0.87	0.87	0.87
Adj. Flow (vph)	120	88	49	391	695	207
RTOR Reduction (vph)	34	0	0	0	10	0
Lane Group Flow (vph)	174	0	0	440	892	0
Confl. Peds. (#/hr)	6		5			5
Heavy Vehicles (%)	0%	3%	0%	0%	1%	0%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.1			40.6	40.6	
Effective Green, g (s)	8.1			40.6	40.6	
Actuated g/C Ratio	0.12			0.62	0.62	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	192			783	1018	
v/s Ratio Prot	c0.11				c0.55	
v/s Ratio Perm				0.35		
v/c Ratio	0.91			0.56	0.88	
Uniform Delay, d1	28.2			7.1	10.2	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	39.2			0.9	8.6	
Delay (s)	67.4			8.1	18.8	
Level of Service	E			A	B	
Approach Delay (s)	67.4			8.1	18.8	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group