



Nitsch Engineering

**Zervas Elementary School
Newton, MA**

Technical Appendix

October 2014

Prepared for:

Design Partnership of Cambridge
Hood Business Park
500 Rutherford Avenue
Charlestown, MA 02129

Submitted by:

Nitsch Engineering
2 Center Plaza, Suite 430
Boston, MA 02108

Nitsch Project #10023.1

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Section Number	DESCRIPTION
A-1	Traffic Count Data
A-2	Weekday Seasonal Adjustment Factors
A-3	Crash Data
A-4	Capacity Analysis
A-5	Traffic Signal Warrant Analysis

Section A-1

Traffic Count Data



PRECISION
DATA
INDUSTRIES, LLC

PRECISION DATA INDUSTRIES, LLC

Office: 508.481.3999 Fax: 508.545.1234

Email: datarequests@pdillc.com

Traffic Counts with Precision



Imagery Date: 8/24/2013 42°19'51.44" N 71°13'09.06" W elev. 109 ft eye alt. 2024 ft

Client:
Nitsch Engineering

Engineer:
J. Bandini

Site Code:
TBA

Date:
Wed 3/5 thru Thurs 3/6/2014

PDI Job Number:
143756

City, State:
Newton, MA

Beacon Street
 east of Paulson Road
 City, State: Newton, MA
 Client: Nitsch/ J. Bandini



P.O. Box 301 Berlin, MA 01503
 Office 508 481 3999 Fax 508 545 1234
 Email: datarequests@pdilic.com

143756 A Class
 Site Code: 10023.1
 Date Start: 05-Mar-14

WB	Start Time	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
	03/05/1													
	4	0	11	0	0	0	0	0	0	0	0	0	0	11
	01:00	0	6	0	0	0	0	0	0	0	0	0	0	6
	02:00	0	1	1	0	0	0	0	0	0	0	0	0	2
	03:00	0	2	0	0	0	0	0	0	0	0	0	0	2
	04:00	0	4	1	0	2	0	0	0	0	0	0	0	7
	05:00	0	15	1	0	0	1	0	0	1	0	0	0	18
	06:00	0	93	9	0	1	0	0	0	0	0	0	0	103
	07:00	2	295	22	0	4	4	0	0	0	0	0	0	327
	08:00	6	401	16	2	7	1	0	0	0	0	0	0	433
	09:00	1	249	19	0	5	1	0	1	1	0	0	0	277
	10:00	0	213	23	0	5	1	0	0	0	0	0	0	242
	11:00	1	270	21	0	1	0	0	1	0	0	0	0	294
	12 PM	0	280	24	1	5	1	0	1	0	0	0	0	312
	13:00	0	276	25	0	5	0	0	0	0	0	0	0	306
	14:00	3	343	15	1	6	2	0	0	0	0	0	0	370
	15:00	5	416	35	2	4	4	0	0	0	0	0	0	466
	16:00	3	495	27	0	2	1	0	0	0	0	0	0	528
	17:00	0	466	15	0	4	1	0	0	0	0	0	0	486
	18:00	4	298	19	0	1	1	0	1	0	0	0	0	324
	19:00	0	214	6	0	0	0	0	0	0	0	0	0	220
	20:00	0	190	2	0	1	0	0	0	1	0	0	0	194
	21:00	0	135	1	0	1	0	0	0	0	0	0	0	137
	22:00	1	60	2	0	0	0	0	1	0	0	0	0	64
	23:00	0	32	2	0	0	0	0	0	0	0	0	0	34
	Total	26	4765	286	6	54	18	0	5	3	0	0	0	5163
	Percent	0.5%	92.3%	5.5%	0.1%	1.0%	0.3%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	
	AM Peak	08:00	08:00	10:00	08:00	08:00	07:00		09:00	05:00				08:00
	Vol.	6	401	23	2	7	4		1	1				433
	PM Peak	15:00	16:00	15:00	15:00	14:00	15:00		12:00	20:00				16:00
	Vol.	5	495	35	2	6	4		1	1				528

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WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
03/06/1														
4	0	6	0	0	0	0	0	0	0	0	0	0	0	6
01:00	0	1	3	0	1	0	0	0	0	0	0	0	0	5
02:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
05:00	0	15	0	0	1	0	0	0	0	0	0	0	0	16
06:00	0	86	5	0	2	1	0	1	0	0	0	0	0	95
07:00	2	293	20	1	3	3	0	0	0	0	0	0	0	322
08:00	8	388	23	2	5	1	0	0	0	0	0	0	0	427
09:00	2	277	24	0	1	0	0	1	2	0	0	0	0	307
10:00	0	234	27	0	5	3	0	0	0	0	0	0	0	269
11:00	0	253	19	1	4	1	0	1	0	0	0	0	0	279
12 PM	1	288	29	1	8	1	0	0	0	0	0	0	0	328
13:00	2	262	20	0	4	2	0	0	1	0	0	0	0	291
14:00	1	291	18	0	3	0	0	2	0	0	0	0	0	315
15:00	1	435	27	0	2	0	0	0	0	0	0	0	0	465
16:00	5	440	30	2	3	0	0	0	0	0	0	0	0	480
17:00	4	456	20	0	3	1	0	0	0	0	0	0	0	484
18:00	1	341	8	0	1	0	0	0	0	0	0	0	0	351
19:00	0	221	6	0	0	0	0	0	0	0	0	0	0	227
20:00	1	168	2	0	0	0	0	0	0	0	0	0	0	171
21:00	0	159	1	0	1	0	0	0	0	0	0	0	0	161
22:00	0	70	3	0	0	0	0	1	0	0	0	0	0	74
23:00	0	35	3	0	1	0	0	0	0	0	0	0	0	39
Total	28	4734	289	7	48	13	0	6	3	0	0	0	0	5128
Percent	0.5%	92.3%	5.6%	0.1%	0.9%	0.3%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	10:00	08:00	08:00	07:00		06:00	09:00					08:00
Vol.	8	388	27	2	5	3		1	2					427
PM Peak	16:00	17:00	16:00	16:00	12:00	13:00		14:00	13:00					17:00
Vol.	5	456	30	2	8	2		2	1					484
Total		9499	575	13	102	31	0	11	6	0	0	0	0	10291

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03/05/1														
4	0	5	1	0	0	0	0	0	0	0	0	0	0	6
01:00	0	7	0	0	0	0	0	0	1	0	0	0	0	8
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
04:00	0	9	1	1	0	0	0	0	0	0	0	0	0	11
05:00	0	25	1	0	1	1	0	0	0	0	0	0	0	28
06:00	0	147	24	0	5	0	0	0	0	0	0	0	0	176
07:00	1	446	33	1	7	2	0	0	1	0	0	0	0	491
08:00	3	385	24	1	5	0	1	1	0	0	0	0	0	420
09:00	1	303	29	0	9	2	0	0	0	0	0	0	0	344
10:00	0	278	22	0	4	0	0	1	0	0	0	0	0	305
11:00	1	296	19	0	1	2	0	0	0	0	0	0	0	319
12 PM	1	292	20	0	4	0	0	0	0	0	1	0	0	318
13:00	1	282	19	1	3	1	0	0	0	0	0	0	0	307
14:00	2	303	23	0	0	0	0	0	0	0	0	0	0	328
15:00	5	323	16	0	3	3	0	0	0	0	0	0	0	350
16:00	2	348	18	1	2	1	0	1	0	0	0	0	0	373
17:00	4	421	13	0	1	0	0	0	0	0	0	0	0	439
18:00	1	396	7	0	2	0	0	1	0	0	0	0	0	407
19:00	1	214	3	0	2	0	0	0	1	0	0	0	0	221
20:00	1	134	4	0	0	0	0	0	0	0	0	0	0	139
21:00	1	74	1	0	0	0	0	0	0	0	0	0	0	76
22:00	0	37	1	0	0	0	0	0	0	0	0	0	0	38
23:00	0	23	1	0	0	0	0	0	0	0	0	0	0	24
Total	25	4756	280	5	49	12	1	4	3	0	1	0	0	5136
Percent	0.5%	92.6%	5.5%	0.1%	1.0%	0.2%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	07:00	04:00	09:00	07:00	08:00	08:00	01:00					07:00
Vol.	3	446	33	1	9	2	1	1	1					491
PM Peak	15:00	17:00	14:00	13:00	12:00	15:00		16:00	19:00		12:00			17:00
Vol.	5	421	23	1	4	3		1	1		1			439

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03/06/1														
4	0	5	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
04:00	0	5	1	0	1	0	0	0	0	0	0	0	0	7
05:00	0	32	4	0	2	0	0	1	0	0	0	0	0	39
06:00	0	133	25	0	1	1	0	0	0	0	0	0	0	160
07:00	1	448	35	1	8	0	0	1	2	0	1	0	0	497
08:00	5	425	18	2	4	1	0	0	0	0	0	0	0	455
09:00	1	335	32	0	1	0	0	0	0	0	0	0	0	369
10:00	0	249	24	2	3	0	0	0	0	0	0	0	0	278
11:00	0	276	29	1	6	2	0	0	0	0	0	0	0	314
12 PM	1	317	19	2	4	1	0	0	0	0	0	0	0	344
13:00	0	291	13	1	5	0	0	1	0	0	0	0	0	311
14:00	0	270	12	0	2	0	0	0	0	0	0	0	0	284
15:00	2	343	18	0	5	1	0	0	0	0	0	0	0	369
16:00	5	363	15	0	1	0	0	0	0	0	0	0	0	384
17:00	4	483	15	1	3	0	0	0	0	0	0	0	0	506
18:00	2	360	11	0	0	0	0	0	0	0	0	0	0	373
19:00	1	217	6	0	0	0	0	0	0	0	0	0	0	224
20:00	0	134	2	0	0	0	0	0	1	0	0	0	0	137
21:00	1	82	0	0	1	0	0	0	0	0	0	0	0	84
22:00	0	41	1	0	0	0	0	0	0	0	0	0	0	42
23:00	0	26	1	0	0	0	0	0	0	0	0	0	0	27
Total	23	4845	281	10	48	6	0	3	3	0	1	0	0	5220
Percent	0.4%	92.8%	5.4%	0.2%	0.9%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	07:00	08:00	07:00	11:00		05:00	07:00		07:00			07:00
Vol.	5	448	35	2	8	2		1	2		1			497
PM Peak	16:00	17:00	12:00	12:00	13:00	12:00		13:00	20:00					17:00
Vol.	5	483	19	2	5	1		1	1					506
Total		9601	561	15	97	18	1	7	6	0	2	0	0	10356

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WB	Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th %ile	Ave Speed
		14	19	24	29	34	39	44	49	54	59	64	69	9999			
03/05/	14	0	2	1	2	5	1	0	0	0	0	0	0	0	11	33	27
	01:00	0	0	3	2	0	1	0	0	0	0	0	0	0	6	33	26
	02:00	0	0	0	0	1	0	1	0	0	0	0	0	0	2	42	37
	03:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2	27	24
	04:00	0	1	0	3	3	0	0	0	0	0	0	0	0	7	32	27
	05:00	0	0	1	4	7	4	2	0	0	0	0	0	0	18	38	33
	06:00	0	3	9	26	48	15	1	1	0	0	0	0	0	103	34	30
	07:00	6	15	55	110	116	22	3	0	0	0	0	0	0	327	33	27
	08:00	26	52	115	149	80	10	1	0	0	0	0	0	0	433	30	23
	09:00	6	11	49	94	97	20	0	0	0	0	0	0	0	277	32	27
	10:00	2	8	25	102	82	23	0	0	0	0	0	0	0	242	33	28
	11:00	5	9	42	111	107	17	3	0	0	0	0	0	0	294	32	28
	12 PM	9	22	59	114	84	23	1	0	0	0	0	0	0	312	32	26
	13:00	8	14	43	124	95	20	2	0	0	0	0	0	0	306	32	27
	14:00	3	24	72	119	117	32	3	0	0	0	0	0	0	370	33	27
	15:00	55	56	92	152	93	16	2	0	0	0	0	0	0	466	30	22
	16:00	25	50	106	190	132	22	3	0	0	0	0	0	0	528	31	25
	17:00	18	41	111	184	122	10	0	0	0	0	0	0	0	486	31	25
	18:00	8	30	81	118	82	4	1	0	0	0	0	0	0	324	31	25
	19:00	0	17	32	93	64	13	1	0	0	0	0	0	0	220	32	27
	20:00	0	14	43	65	66	4	2	0	0	0	0	0	0	194	32	27
	21:00	0	4	29	43	50	10	0	1	0	0	0	0	0	137	33	28
	22:00	0	6	4	16	32	5	1	0	0	0	0	0	0	64	33	28
	23:00	0	0	5	11	12	6	0	0	0	0	0	0	0	34	34	30

%	3.3%	7.3%	18.9%	35.5%	29.0%	5.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00	08:00	07:00	07:00	07:00	06:00							08:00
Vol.	26	52	115	149	116	22	3	1							433
Midday Peak	12:00	14:00	14:00	13:00	14:00	14:00	11:00								14:00
Vol.	9	24	72	124	117	32	3								370
PM Peak	15:00	15:00	17:00	16:00	16:00	16:00	16:00	21:00							16:00
Vol.	55	56	111	190	132	22	3	1							528

%iles			15th Percentile :	18 MPH
			50th Percentile :	26 MPH
			85th Percentile :	32 MPH
			95th Percentile :	35 MPH

Stats	10 MPH Pace Speed :	24-33 MPH
	Number in Pace :	2964
	Percent in Pace :	57.4%
	Number of Vehicles > 25 MPH :	3115
	Percent of Vehicles > 25 MPH :	60.3%
	Mean Speed(Average) :	26 MPH

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WB	Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
		14	19	24	29	34	39	44	49	54	59	64	69	9999			
03/06/																	
14	0	0	3	1	2	0	0	0	0	0	0	0	0	0	6	31	26
01:00	0	0	0	2	1	2	0	0	0	0	0	0	0	0	5	37	32
02:00	0	1	2	0	3	0	1	0	0	0	0	0	0	0	7	34	27
03:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2	32	22
04:00	0	0	0	2	2	1	2	0	0	0	0	0	0	0	7	41	34
05:00	0	1	1	3	5	6	0	0	0	0	0	0	0	0	16	36	31
06:00	0	1	12	28	39	11	4	0	0	0	0	0	0	0	95	34	30
07:00	5	24	38	103	119	29	4	0	0	0	0	0	0	0	322	33	28
08:00	26	58	110	140	77	15	1	0	0	0	0	0	0	0	427	30	23
09:00	2	9	52	96	120	22	5	1	0	0	0	0	0	0	307	33	28
10:00	1	8	29	104	96	28	3	0	0	0	0	0	0	0	269	33	29
11:00	1	12	23	104	113	24	2	0	0	0	0	0	0	0	279	33	29
12 PM	2	13	36	125	122	28	1	1	0	0	0	0	0	0	328	33	28
13:00	5	9	53	99	93	28	4	0	0	0	0	0	0	0	291	33	28
14:00	4	9	51	79	130	36	6	0	0	0	0	0	0	0	315	34	29
15:00	27	55	105	149	106	22	1	0	0	0	0	0	0	0	465	31	24
16:00	15	42	105	157	138	22	1	0	0	0	0	0	0	0	480	32	25
17:00	26	66	135	163	78	16	0	0	0	0	0	0	0	0	484	30	23
18:00	8	35	72	133	98	5	0	0	0	0	0	0	0	0	351	31	25
19:00	1	11	47	90	56	21	1	0	0	0	0	0	0	0	227	32	27
20:00	0	7	16	75	62	11	0	0	0	0	0	0	0	0	171	32	28
21:00	1	24	31	53	48	4	0	0	0	0	0	0	0	0	161	31	25
22:00	0	2	8	25	28	9	1	1	0	0	0	0	0	0	74	34	30
23:00	0	1	5	16	13	1	2	1	0	0	0	0	0	0	39	33	29

%	2.4%	7.6%	18.2%	34.1%	30.2%	6.6%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AM Peak	08:00	08:00	08:00	08:00	09:00	07:00	09:00	09:00						
Vol.	26	58	110	140	120	29	5	1						08:00
Midda y Peak	13:00	12:00	13:00	12:00	14:00	14:00	14:00	12:00						12:00
Vol.	5	13	53	125	130	36	6	1						328
PM Peak	15:00	17:00	17:00	17:00	16:00	15:00	23:00	22:00						17:00
Vol.	27	66	135	163	138	22	2	1						484

% ile	15th Percentile :	18 MPH
	50th Percentile :	26 MPH
	85th Percentile :	32 MPH
	95th Percentile :	35 MPH

Stats	10 MPH Pace Speed :	24-33 MPH
	Number in Pace :	2932
	Percent in Pace :	57.2%
	Number of Vehicles > 25 MPH :	3206
	Percent of Vehicles > 25 MPH :	62.5%
	Mean Speed(Average) :	26 MPH

Beacon Street
east of Paulson Road
City, State: Newton, MA
Client: Nitsch/ J. Bandini



PO Box 301 Berlin, MA 01503
Office: 508 481 3999 Fax: 508 545 1234
Email: datarequests@pdilc.com

143756 A Speed
Site Code: 10023.1
Date Start: 05-Mar-14

EB	Start Time	14	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
03/05/																	
14	0	0	2	2	1	0	1	0	0	0	0	0	0	0	6	38	29
01:00	0	0	0	0	5	1	2	0	0	0	0	0	0	0	8	41	35
02:00	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	42	35
03:00	0	0	1	1	1	3	0	0	0	0	0	0	0	0	6	37	32
04:00	1	0	0	3	2	3	2	0	0	0	0	0	0	0	11	39	30
05:00	0	1	3	5	8	8	2	0	1	0	0	0	0	0	28	38	32
06:00	0	1	6	59	78	30	1	1	0	0	0	0	0	0	176	35	31
07:00	2	14	83	205	152	29	5	1	0	0	0	0	0	0	491	32	28
08:00	12	26	66	210	92	14	0	0	0	0	0	0	0	0	420	31	26
09:00	1	4	36	148	125	30	0	0	0	0	0	0	0	0	344	33	29
10:00	0	8	38	120	110	25	4	0	0	0	0	0	0	0	305	33	29
11:00	1	4	28	131	125	28	2	0	0	0	0	0	0	0	319	33	29
12 PM	0	8	43	133	111	19	4	0	0	0	0	0	0	0	318	33	28
13:00	1	9	38	123	109	25	2	0	0	0	0	0	0	0	307	33	28
14:00	1	3	28	154	122	18	2	0	0	0	0	0	0	0	328	32	29
15:00	1	18	62	168	92	8	1	0	0	0	0	0	0	0	350	31	27
16:00	0	7	49	168	131	18	0	0	0	0	0	0	0	0	373	32	28
17:00	2	7	50	227	133	20	0	0	0	0	0	0	0	0	439	32	28
18:00	2	12	75	236	73	9	0	0	0	0	0	0	0	0	407	30	27
19:00	2	6	20	94	85	14	0	0	0	0	0	0	0	0	221	33	28
20:00	0	1	22	50	51	12	2	1	0	0	0	0	0	0	139	33	29
21:00	0	5	5	31	27	7	1	0	0	0	0	0	0	0	76	33	28
22:00	0	0	3	14	18	3	0	0	0	0	0	0	0	0	38	33	30
23:00	1	1	1	4	12	4	1	0	0	0	0	0	0	0	24	35	29

%	0.5%	2.6%	12.8%	44.5%	32.4%	6.4%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AM Peak	08:00	08:00	07:00	08:00	07:00	06:00	07:00	06:00	05:00					
Vol.	12	26	83	210	152	30	5	1	1					07:00
Midday Peak	11:00	13:00	12:00	14:00	11:00	11:00	12:00							14:00
Vol.	1	9	43	154	125	28	4							328
PM Peak	17:00	15:00	18:00	18:00	17:00	17:00	20:00	20:00						17:00
Vol.	2	18	75	236	133	20	2	1						439

%iles
15th Percentile : 22 MPH
50th Percentile : 27 MPH
85th Percentile : 32 MPH
95th Percentile : 35 MPH

Stats
10 MPH Pace Speed : 24-33 MPH
Number in Pace : 3571
Percent in Pace : 69.5%
Number of Vehicles > 25 MPH : 3690
Percent of Vehicles > 25 MPH : 71.8%
Mean Speed(Average) : 28 MPH

Beacon Street
 east of Paulson Road
 City, State: Newton, MA
 Client: Nilsch/ J. Bandini



PO Box 301 Berlin, MA 01503
 Office: 508 481 1999 Fax 508 545 1234
 Email: datarequests@pdtilc.com

143756 A Speed
 Site Code: 10023.1
 Date Start: 05-Mar-14

EB	Start Time	14	15	19	20	24	25	29	30	34	35	39	40	44	45	49	50	54	55	59	60	64	65	69	70	9999	Total	85th % ile	Ave Speed
03/06/	14	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	35	33	
	01:00	0	0	0	0	0	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	45	40	
	02:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	33	32	
	03:00	0	0	0	1	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	37	32	
	04:00	0	0	0	0	1	3	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7	40	36	
	05:00	0	2	3	7	21	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	34	30	
	06:00	0	5	7	47	74	24	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	160	34	30	
	07:00	2	11	62	184	199	35	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	497	33	29	
	08:00	10	21	98	179	126	17	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	455	32	26	
	09:00	0	6	26	125	174	35	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	369	33	30	
	10:00	1	12	16	79	136	30	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	278	34	30	
	11:00	0	4	20	140	126	20	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	314	33	29	
	12 PM	2	7	44	165	92	29	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	344	33	28	
	13:00	1	12	45	126	100	26	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	311	33	28	
	14:00	0	3	37	121	99	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	284	33	29	
	15:00	3	20	76	151	93	24	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	369	32	27	
	16:00	0	9	42	155	142	33	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	384	33	29	
	17:00	0	12	79	269	129	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	506	31	27	
	18:00	0	4	48	164	140	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	373	32	28	
	19:00	0	4	22	104	80	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	224	32	29	
	20:00	2	2	6	47	61	18	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	137	34	30	
	21:00	0	2	8	32	27	11	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	35	30	
	22:00	0	0	4	12	14	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	36	31	
	23:00	0	2	0	5	12	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	37	31	

%	0.4%	2.6%	12.3%	40.5%	35.6%	7.7%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AM Peak	08:00	08:00	08:00	07:00	07:00	07:00	07:00	01:00	08:00	04:00				07:00
Vol.	10	21	98	184	199	35	4	1	1	1				497
Midday Peak	12:00	13:00	13:00	12:00	11:00	12:00	12:00							12:00
Vol.	2	12	45	165	126	29	5							344
PM Peak	15:00	15:00	17:00	17:00	16:00	16:00	21:00	20:00						17:00
Vol.	3	20	79	269	142	33	4	1						506

% ile	15th Percentile :	22 MPH
	50th Percentile :	28 MPH
	85th Percentile :	33 MPH
	95th Percentile :	36 MPH

Stats	10 MPH Pace Speed :	25-34 MPH
	Number in Pace :	3561
	Percent in Pace :	68.2%
	Number of Vehicles > 25 MPH :	3880
	Percent of Vehicles > 25 MPH :	74.3%
	Mean Speed(Average) :	28 MPH

Beacon Street
east of Paulson Road
City, State: Newton, MA
Client: Nitsch/ J. Bandini



P.O. Box 301 Berlin, MA 01503
Office 508.481.3999 Fax 508.545.1234
Email: datarequests@pdilic.com

143756 A Volume
Site Code: 10023.1
Date Start: 05-Mar-14

Start Time	WB		EB		Combin ed	05-Mar-14 Wed	
	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.
12:00	1	62	0	92	1	154	
12:15	6	89	3	66	9	155	
12:30	1	83	1	89	2	172	
12:45	3	11 78	312	2	6 71	318	5 17 149 630
01:00	3	74	1	82	4	156	
01:15	1	73	4	66	5	139	
01:30	1	85	1	68	2	153	
01:45	1	6 74	306	2	8 91	307	3 14 165 613
02:00	0	87	2	87	2	174	
02:15	1	82	0	82	1	164	
02:30	0	90	0	80	0	170	
02:45	1	2 111	370	0	2 79	328	1 4 190 698
03:00	0	112	0	70	0	182	
03:15	1	106	0	113	1	219	
03:30	1	118	1	79	2	197	
03:45	0	2 130	466	5	6 88	350	5 8 218 816
04:00	2	126	1	90	3	216	
04:15	1	127	1	103	2	230	
04:30	1	130	2	96	3	226	
04:45	3	7 145	528	7	11 84	373	10 18 229 901
05:00	0	127	1	100	1	227	
05:15	1	115	7	102	8	217	
05:30	11	116	5	130	16	246	
05:45	6	18 128	486	15	28 107	439	21 46 235 925
06:00	7	104	10	116	17	220	
06:15	25	74	35	121	60	195	
06:30	31	75	53	92	84	167	
06:45	40	103 71	324	78	176 78	407	118 279 149 731
07:00	57	73	100	60	157	133	
07:15	56	67	133	66	189	133	
07:30	85	41	145	57	230	98	
07:45	129	327 39	220	113	491 38	221	242 818 77 441
08:00	112	69	118	43	230	112	
08:15	102	47	78	35	180	82	
08:30	113	39	106	26	219	65	
08:45	106	433 39	194	118	420 35	139	224 853 74 333
09:00	68	40	97	20	165	60	
09:15	81	33	78	17	159	50	
09:30	59	43	77	21	136	64	
09:45	69	277 21	137	92	344 18	76	161 621 39 213
10:00	56	23	62	11	118	34	
10:15	72	13	76	15	148	28	
10:30	65	14	66	8	131	22	
10:45	49	242 14	64	101	305 4	38	150 547 18 102
11:00	71	12	84	5	155	17	
11:15	78	11	79	10	157	21	
11:30	79	5	69	7	148	12	
11:45	66	294 6	34	87	319 2	24	153 613 8 58
Total	1722	3441	2116	3020	3838	6461	
Percent	44.9%	53.3%	55.1%	46.7%			
Day Total		5163		5136		10299	
Peak	07:45	- 04:15	- 07:15	- 05:30	- 07:15	- 05:00	- - -
Vol.	456	- 529	- 509	- 474	- 891	- 925	- - -
P.H.F.	0.884	0.912	0.878	0.912	0.920	0.940	

Beacon Street
 east of Paulson Road
 City, State: Newton, MA
 Client: Nitsch/ J. Bandini



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143756 A Volume
 Site Code: 10023.1
 Date Start: 05-Mar-14

Start Time	WB		EB		Combin ed	06-Mar-14 Thu		
	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	
12:00	2	80	1	81	3	161		
12:15	2	88	2	80	4	168		
12:30	0	93	1	102	1	195		
12:45	2	67	328	1	5	81	344	
01:00	2	80	1	75	3	155		
01:15	1	75	1	79	2	154		
01:30	2	66	2	74	4	140		
01:45	0	5	70	291	1	5	83	311
02:00	1	78	1	64	2	142		
02:15	5	71	0	68	5	139		
02:30	1	71	0	66	1	137		
02:45	0	7	95	315	0	1	86	284
03:00	1	103	1	83	2	186		
03:15	0	112	0	109	0	221		
03:30	0	114	0	85	0	199		
03:45	1	2	136	465	4	5	92	369
04:00	2	134	0	84	2	218		
04:15	2	108	1	107	3	215		
04:30	0	114	2	96	2	210		
04:45	3	7	124	480	4	7	97	384
05:00	3	124	4	93	7	217		
05:15	3	115	7	146	10	261		
05:30	4	130	12	132	16	262		
05:45	6	16	115	484	16	39	135	506
06:00	12	105	18	121	30	226		
06:15	20	97	28	102	48	199		
06:30	31	89	46	74	77	163		
06:45	32	95	60	351	68	160	76	373
07:00	69	54	96	80	165	134		
07:15	60	74	133	53	193	127		
07:30	94	48	137	56	231	104		
07:45	99	322	51	227	131	497	35	224
08:00	141	40	122	44	263	84		
08:15	107	53	101	27	208	80		
08:30	86	41	121	36	207	77		
08:45	93	427	37	171	111	455	30	137
09:00	85	49	91	15	176	64		
09:15	89	38	81	32	170	70		
09:30	79	31	109	22	188	53		
09:45	54	307	43	161	88	369	15	84
10:00	61	23	69	7	130	30		
10:15	63	23	72	15	135	38		
10:30	71	17	66	13	137	30		
10:45	74	269	11	74	71	278	7	42
11:00	57	18	73	6	130	24		
11:15	62	7	92	9	154	16		
11:30	65	7	63	9	128	16		
11:45	95	279	7	39	86	314	3	27
Total	1742	3386	2135	3085	3877	6471		
Percent	44.9%	52.3%	55.1%	47.7%				
Day Total		5128		5220		10348		
Peak	07:30	-	03:15	-	07:15	-	05:15	-
Vol.	441	-	496	-	523	-	932	-
P.H.F.	0.782	-	0.912	-	0.954	-	0.886	-

Beacon Street
 west of Evelyn Road
 City, State: Newton, MA
 Client: Nitsch/ J. Bandini



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 Office 508 481 3999 Fax 508 545 1234
 Email: dotarequests@pdilic.com

143756 B Class
 Site Code: 10023.1
 Date Start: 05-Mar-14

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
03/05/1														
4	0	8	0	0	0	0	0	0	0	0	0	0	0	8
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
05:00	0	15	1	0	1	1	0	0	1	0	0	0	0	19
06:00	0	84	6	0	0	0	0	0	0	0	0	0	0	90
07:00	1	269	10	1	3	1	1	1	0	0	0	0	0	287
08:00	3	398	17	0	5	0	0	0	0	0	0	0	0	423
09:00	3	244	13	0	2	1	0	1	1	0	0	0	0	265
10:00	1	216	16	0	2	2	0	0	0	0	0	0	0	237
11:00	0	257	11	0	0	0	0	1	0	0	0	0	0	269
12 PM	0	264	19	1	6	1	0	1	0	0	0	0	0	292
13:00	1	255	20	0	3	1	0	0	0	0	0	0	0	280
14:00	6	316	11	0	3	0	0	0	0	0	0	0	0	336
15:00	2	404	32	0	1	1	0	0	0	0	0	0	0	440
16:00	5	437	18	0	3	0	0	0	0	0	0	0	0	463
17:00	3	394	6	0	3	1	0	1	1	0	0	0	0	409
18:00	1	264	14	0	1	0	0	0	0	0	0	0	0	280
19:00	2	194	2	0	0	0	0	0	0	0	0	0	0	198
20:00	1	163	1	0	0	0	0	0	1	0	0	0	0	166
21:00	0	104	3	0	0	0	0	0	0	0	0	0	0	107
22:00	1	52	2	0	0	0	0	1	0	0	0	0	0	56
23:00	0	24	0	0	0	0	0	0	0	0	0	0	0	24
Total	30	4374	203	2	34	9	1	6	4	0	0	0	0	4663
Percent	0.6%	93.8%	4.4%	0.0%	0.7%	0.2%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00	07:00	08:00	10:00	07:00	07:00	05:00					08:00
Vol.	3	398	17	1	5	2	1	1	1					423
PM Peak	14:00	16:00	15:00	12:00	12:00	12:00		12:00	17:00					16:00
Vol.	6	437	32	1	6	1		1	1					463

Beacon Street
west of Evelyn Road
City, State: Newton, MA
Client: Nitsch/ J. Bandini



P.O. Box 301 Berlin, MA 01503
Office 508.481.3999 Fax 508.545.1234
Email: datarequests@pdillc.com

143756 B Class
Site Code: 10023.1
Date Start: 05-Mar-14

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
03/06/1														
4	0	5	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	3	2	0	1	0	0	0	0	0	0	0	0	6
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
05:00	0	15	0	0	1	0	0	0	0	0	0	0	0	16
06:00	1	82	3	0	1	1	0	1	0	0	0	0	0	89
07:00	2	286	12	1	3	0	0	0	0	0	0	0	0	304
08:00	6	395	10	1	6	3	0	1	0	0	0	0	0	422
09:00	1	279	11	0	1	0	0	1	1	0	0	0	0	294
10:00	0	221	17	1	4	2	0	0	0	0	0	0	0	245
11:00	0	243	13	1	2	1	0	0	0	0	0	0	0	260
12 PM	1	276	23	0	7	1	0	0	0	0	0	0	0	308
13:00	1	262	16	0	1	0	0	1	1	0	0	0	0	282
14:00	2	279	12	0	1	0	0	2	0	0	0	0	0	296
15:00	2	415	18	0	1	0	0	1	0	0	0	0	0	437
16:00	4	403	17	0	3	0	0	0	0	0	0	0	0	427
17:00	7	392	8	0	3	0	0	0	0	0	0	0	0	410
18:00	3	312	5	0	0	0	0	0	0	0	0	0	0	320
19:00	0	209	1	0	0	0	0	0	0	0	0	0	0	210
20:00	0	145	2	0	0	0	0	0	0	0	0	0	0	147
21:00	0	135	1	0	0	0	0	0	0	0	0	0	0	136
22:00	1	67	2	0	0	0	0	1	0	0	0	0	0	71
23:00	0	28	2	0	0	0	0	0	0	0	0	0	0	30
Total	31	4465	175	4	35	8	0	8	2	0	0	0	0	4728
Percent	0.7%	94.4%	3.7%	0.1%	0.7%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	10:00	07:00	08:00	08:00		06:00	09:00					08:00
Vol.	6	395	17	1	6	3		1	1					422
PM Peak	17:00	15:00	12:00		12:00	12:00		14:00	13:00					15:00
Vol.	7	415	23		7	1		2	1					437
Total		8839	378	6	69	17	1	14	6	0	0	0	0	9391

Beacon Street
west of Evelyn Road
City, State: Newton, MA
Client: Nitsch/ J. Bandini



P.O. Box 301 Berlin, MA 01503
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143756 B Class
Site Code: 10023.1
Date Start: 05-Mar-14

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
03/05/1														
4	0	5	1	0	0	0	0	0	0	0	0	0	0	6
01:00	0	6	0	0	0	0	0	0	1	0	0	0	0	7
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
04:00	0	9	1	1	0	0	0	0	0	0	0	0	0	11
05:00	0	22	1	0	1	1	0	0	0	0	0	0	0	25
06:00	2	135	17	0	5	0	0	0	0	0	0	0	0	159
07:00	3	412	27	1	4	4	0	0	0	0	0	0	0	451
08:00	4	322	17	1	2	0	0	1	0	0	0	0	0	347
09:00	3	279	17	1	5	2	0	0	0	0	0	0	0	307
10:00	0	271	16	0	1	0	0	0	0	0	0	0	0	288
11:00	1	266	19	0	1	1	0	0	0	0	0	0	0	288
12 PM	2	270	18	0	1	0	0	0	0	0	1	0	0	292
13:00	3	264	10	1	4	3	0	0	0	0	0	0	0	285
14:00	4	282	17	0	0	1	0	0	0	0	0	0	0	304
15:00	2	261	12	0	4	0	0	0	0	0	0	0	0	279
16:00	3	323	14	1	2	1	0	0	0	0	0	0	0	344
17:00	1	396	12	0	1	0	0	0	0	0	0	0	0	410
18:00	1	380	10	0	0	0	0	1	0	0	0	0	0	392
19:00	1	205	4	0	0	0	0	0	0	0	0	0	0	210
20:00	0	120	1	0	0	0	0	0	0	0	0	0	0	121
21:00	0	68	0	0	0	0	0	0	0	0	0	0	0	68
22:00	0	35	0	0	0	0	0	0	0	0	0	0	0	35
23:00	0	24	0	0	0	0	0	0	0	0	0	0	0	24
Total	30	4362	214	6	31	13	0	2	1	0	1	0	0	4660
Percent	0.6%	93.6%	4.6%	0.1%	0.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	07:00	04:00	06:00	07:00		08:00	01:00					07:00
Vol.	4	412	27	1	5	4		1	1					451
PM Peak	14:00	17:00	12:00	13:00	13:00	13:00		18:00			12:00			17:00
Vol.	4	396	18	1	4	3		1			1			410

Beacon Street
 west of Evelyn Road
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 Client: Nitsch/ J. Bandini



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 Office: 508 481 1999 Fax: 508 545 1234
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143756 B Class
 Site Code: 10023.1
 Date Start: 05-Mar-14

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
03/06/1														
4	0	5	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	5	0	0	1	0	0	0	0	0	0	0	0	6
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	6	1	0	1	0	0	0	0	0	0	0	0	8
05:00	0	29	3	0	2	0	0	1	0	0	0	0	0	35
06:00	1	117	19	0	2	1	0	0	0	0	0	0	0	140
07:00	4	411	23	0	6	2	0	1	1	0	0	0	0	448
08:00	4	337	8	1	1	2	0	0	0	0	0	0	0	353
09:00	0	307	27	0	1	0	0	0	0	0	0	0	0	335
10:00	0	224	16	0	3	0	0	0	0	0	0	0	0	243
11:00	1	259	22	0	4	1	0	0	0	0	0	0	0	287
12 PM	1	297	15	0	2	1	0	0	0	0	0	0	0	316
13:00	0	265	17	0	2	1	0	1	0	0	0	0	0	286
14:00	3	243	10	0	1	0	0	0	0	0	0	0	0	257
15:00	1	284	9	0	3	0	0	0	0	0	0	0	0	297
16:00	3	345	10	0	1	0	0	0	0	0	0	0	0	359
17:00	1	448	9	1	2	3	0	0	0	0	0	0	0	464
18:00	4	338	12	0	0	1	0	0	0	0	0	0	0	355
19:00	1	206	3	0	1	0	0	0	0	0	0	0	0	211
20:00	0	126	1	0	0	0	0	0	1	0	0	0	0	128
21:00	1	78	1	0	0	0	0	0	0	0	0	0	0	80
22:00	0	42	1	0	0	0	0	0	0	0	0	0	0	43
23:00	0	28	0	0	1	0	0	0	0	0	0	0	0	29
Total	25	4406	207	2	34	12	0	3	2	0	0	0	0	4691
Percent	0.5%	93.9%	4.4%	0.0%	0.7%	0.3%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	09:00	08:00	07:00	07:00		05:00	07:00					07:00
Vol.	4	411	27	1	6	2		1	1					448
PM Peak	18:00	17:00	13:00	17:00	15:00	17:00		13:00	20:00					17:00
Vol.	4	448	17	1	3	3		1	1					464
Total		8768	421	8	65	25	0	5	3	0	1	0	0	9351

Beacon Street
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143756 B Speed
Site Code: 10023.1
Date Start: 05-Mar-14

WB	Start Time	14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
03/05/	14	0	0	3	1	3	1	0	0	0	0	0	0	0	8	34	28
	01:00	0	0	1	3	0	1	0	0	0	0	0	0	0	5	35	28
	02:00	0	0	0	1	0	0	1	0	0	0	0	0	0	2	42	35
	03:00	0	0	0	2	0	0	0	0	0	0	0	0	0	2	28	27
	04:00	0	0	2	1	2	0	0	0	0	0	0	0	0	5	32	27
	05:00	1	1	2	8	5	2	0	0	0	0	0	0	0	19	33	26
	06:00	0	0	16	39	29	6	0	0	0	0	0	0	0	90	32	28
	07:00	1	8	106	116	52	4	0	0	0	0	0	0	0	287	30	26
	08:00	8	100	177	104	33	1	0	0	0	0	0	0	0	423	27	21
	09:00	1	5	74	126	54	5	0	0	0	0	0	0	0	265	30	26
	10:00	1	9	56	111	57	3	0	0	0	0	0	0	0	237	31	26
	11:00	4	13	87	116	45	4	0	0	0	0	0	0	0	269	30	25
	12 PM	3	27	85	130	45	2	0	0	0	0	0	0	0	292	29	25
	13:00	3	23	98	118	32	6	0	0	0	0	0	0	0	280	29	24
	14:00	2	15	114	150	44	10	1	0	0	0	0	0	0	336	29	25
	15:00	26	61	186	142	22	3	0	0	0	0	0	0	0	440	27	21
	16:00	7	31	169	193	59	4	0	0	0	0	0	0	0	463	29	24
	17:00	2	12	143	198	52	2	0	0	0	0	0	0	0	409	29	25
	18:00	2	19	89	135	31	3	1	0	0	0	0	0	0	280	29	25
	19:00	1	8	65	90	32	2	0	0	0	0	0	0	0	198	29	25
	20:00	1	3	40	83	37	2	0	0	0	0	0	0	0	166	30	27
	21:00	0	2	18	53	33	0	0	1	0	0	0	0	0	107	31	28
	22:00	0	3	14	14	23	1	1	0	0	0	0	0	0	56	32	27
	23:00	0	0	4	9	8	3	0	0	0	0	0	0	0	24	34	29

%	1.4%	7.3%	33.2%	41.7%	15.0%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00	09:00	09:00	06:00	02:00								08:00
Vol.	8	100	177	126	54	6	1								423
Midda y Peak	11:00	12:00	14:00	14:00	11:00	14:00	14:00								14:00
Vol.	4	27	114	150	45	10	1								336
PM Peak	15:00	15:00	15:00	17:00	16:00	16:00	18:00	21:00							16:00
Vol.	26	61	186	198	59	4	1	1							463

% ile	15th Percentile :	18 MPH
	50th Percentile :	24 MPH
	85th Percentile :	29 MPH
	95th Percentile :	32 MPH

Stats	10 MPH Pace Speed :	21-30 MPH
	Number in Pace :	3082
	Percent in Pace :	66.1%
	Number of Vehicles > 25 MPH :	2096
	Percent of Vehicles > 25 MPH :	45.0%
	Mean Speed(Average) :	25 MPH

Beacon Street
west of Evelyn Road
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Client: Nitsch/ J. Bandini



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143756 B Speed
Site Code: 10023.1
Date Start: 05-Mar-14

WB	Start Time	14	15	19	20	24	25	29	30	34	35	39	40	44	45	49	50	54	55	59	60	64	65	69	70	9999	Total	85th % ile	Ave Speed
03/06/																													
14	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	35	29	
01:00	0	0	1	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	31	28	
02:00	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	41	31	
03:00	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	31	25	
04:00	0	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	37	33	
05:00	0	0	1	7	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	34	30	
06:00	0	5	9	50	20	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	31	27	
07:00	2	5	74	153	62	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	304	30	27	
08:00	5	47	201	132	35	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	422	27	23	
09:00	0	11	80	127	67	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	294	31	26	
10:00	0	5	78	100	56	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	245	31	26	
11:00	2	7	63	135	45	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	260	30	26	
12 PM	0	12	105	124	58	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	308	30	26
13:00	0	1	101	119	53	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	282	30	26
14:00	1	14	80	112	79	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	296	31	26
15:00	9	46	188	148	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	437	28	23
16:00	10	18	170	173	53	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	427	29	24
17:00	9	32	173	157	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	410	28	23
18:00	1	10	102	170	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	320	29	25
19:00	1	11	69	92	36	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210	29	25
20:00	0	2	47	66	31	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	147	30	26
21:00	0	2	26	79	28	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	136	30	27
22:00	0	3	10	32	23	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	71	32	28
23:00	0	0	3	15	9	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	33	30

%	0.8%	4.9%	33.5%	42.2%	16.7%	1.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.	08:00	08:00	08:00	07:00	09:00	07:00	02:00								08:00
Midday Peak Vol.	11:00	14:00	12:00	11:00	14:00	14:00									12:00
PM Peak Vol.	16:00	15:00	15:00	16:00	16:00	16:00	23:00								15:00
	10	46	188	173	53	3	3								437

%iles	15th Percentile :	19 MPH
	50th Percentile :	25 MPH
	85th Percentile :	30 MPH
	95th Percentile :	33 MPH

Stats	10 MPH Pace Speed :	21-30 MPH
	Number in Pace :	3223
	Percent in Pace :	68.2%
	Number of Vehicles > 25 MPH :	2268
	Percent of Vehicles > 25 MPH :	48.0%
	Mean Speed(Average) :	25 MPH

Beacon Street
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143756 B Speed
 Site Code: 10023.1
 Date Start: 05-Mar-14

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
03/05/																
14	0	0	1	4	1	0	0	0	0	0	0	0	0	6	30	27
01:00	1	0	2	0	2	0	2	0	0	0	0	0	0	7	41	27
02:00	0	0	0	1	0	1	0	0	0	0	0	0	0	2	37	32
03:00	0	0	0	1	2	2	0	0	0	0	0	0	0	5	37	33
04:00	0	1	1	3	2	2	1	1	0	0	0	0	0	11	40	31
05:00	0	2	1	7	9	4	1	0	0	1	0	0	0	25	36	30
06:00	1	21	29	38	53	14	2	1	0	0	0	0	0	159	33	26
07:00	50	71	92	137	84	14	3	0	0	0	0	0	0	451	30	22
08:00	53	66	115	83	24	6	0	0	0	0	0	0	0	347	27	19
09:00	27	38	71	80	76	15	0	0	0	0	0	0	0	307	31	23
10:00	23	42	54	85	70	14	0	0	0	0	0	0	0	288	31	23
11:00	12	29	70	99	62	15	1	0	0	0	0	0	0	288	31	25
12 PM	25	34	71	83	66	13	0	0	0	0	0	0	0	292	31	23
13:00	19	38	82	72	57	17	0	0	0	0	0	0	0	285	31	23
14:00	25	43	85	87	58	6	0	0	0	0	0	0	0	304	30	22
15:00	34	37	86	80	40	2	0	0	0	0	0	0	0	279	28	21
16:00	38	52	91	93	64	5	1	0	0	0	0	0	0	344	29	21
17:00	29	58	114	137	63	9	0	0	0	0	0	0	0	410	29	22
18:00	38	73	110	110	53	8	0	0	0	0	0	0	0	392	28	21
19:00	10	25	49	64	56	6	0	0	0	0	0	0	0	210	31	24
20:00	3	17	27	35	29	8	2	0	0	0	0	0	0	121	32	25
21:00	0	6	18	20	17	6	1	0	0	0	0	0	0	68	33	27
22:00	4	2	6	11	8	4	0	0	0	0	0	0	0	35	32	24
23:00	1	1	3	6	10	2	1	0	0	0	0	0	0	24	34	28

%	8.4%	14.1%	25.3%	28.7%	19.4%	3.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
AM Peak	08:00	07:00	08:00	07:00	07:00	09:00	07:00	04:00		05:00					07:00	
Vol.	53	71	115	137	84	15	3	1		1					451	
Midday Peak	12:00	14:00	14:00	11:00	12:00	13:00	11:00								14:00	
Vol.	25	43	85	99	66	17	1								304	
PM Peak	16:00	18:00	17:00	17:00	16:00	17:00	20:00								17:00	
Vol.	38	73	114	137	64	9	2								410	

%iles
 15th Percentile : 12 MPH
 50th Percentile : 23 MPH
 85th Percentile : 30 MPH
 95th Percentile : 34 MPH

Stats
 10 MPH Pace Speed : 21-30 MPH
 Number in Pace : 2144
 Percent in Pace : 46.0%
 Number of Vehicles > 25 MPH : 1992
 Percent of Vehicles > 25 MPH : 42.7%
 Mean Speed(Average) : 23 MPH

Beacon Street
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143756 B Speed
 Site Code: 10023.1
 Date Start: 05-Mar-14

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th %ile	Ave Speed
03/06/14	14	19	24	29	34	39	44	49	54	59	64	69	9999			
03/06/14	0	0	3	0	1	1	0	0	0	0	0	0	0	5	35	27
01:00	0	0	0	0	3	0	2	1	0	0	0	0	0	6	44	38
02:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2	27	24
03:00	0	0	0	0	2	2	0	0	0	0	0	0	0	4	37	34
04:00	0	0	1	0	5	1	0	0	0	1	0	0	0	8	38	35
05:00	1	6	6	10	8	4	0	0	0	0	0	0	0	35	32	25
06:00	0	11	22	36	56	14	1	0	0	0	0	0	0	140	33	28
07:00	55	61	100	116	96	16	4	0	0	0	0	0	0	448	31	22
08:00	47	63	123	72	44	3	1	0	0	0	0	0	0	353	28	20
09:00	27	43	71	97	82	11	4	0	0	0	0	0	0	335	31	23
10:00	6	21	40	78	75	22	1	0	0	0	0	0	0	243	33	26
11:00	12	34	69	93	65	12	2	0	0	0	0	0	0	287	31	24
12 PM	24	47	75	90	64	15	1	0	0	0	0	0	0	316	31	23
13:00	20	27	64	94	61	19	1	0	0	0	0	0	0	286	31	24
14:00	18	40	61	75	50	12	1	0	0	0	0	0	0	257	30	23
15:00	23	61	74	77	53	9	0	0	0	0	0	0	0	297	30	22
16:00	45	33	88	109	67	16	1	0	0	0	0	0	0	359	30	22
17:00	57	72	128	134	63	10	0	0	0	0	0	0	0	464	29	21
18:00	32	50	86	112	70	5	0	0	0	0	0	0	0	355	30	22
19:00	6	34	62	71	32	4	2	0	0	0	0	0	0	211	29	23
20:00	0	11	44	31	36	6	0	0	0	0	0	0	0	128	32	26
21:00	2	9	14	27	16	11	1	0	0	0	0	0	0	80	33	26
22:00	0	3	11	12	9	7	1	0	0	0	0	0	0	43	35	28
23:00	0	3	2	10	9	5	0	0	0	0	0	0	0	29	34	28

%	8.0%	13.4%	24.4%	28.7%	20.6%	4.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
AM Peak	07:00	08:00	08:00	07:00	07:00	07:00	07:00	01:00		04:00					07:00	
Vol.	55	63	123	116	96	16	4	1		1					448	
Midday Peak	12:00	12:00	12:00	13:00	11:00	13:00	11:00								12:00	
Vol.	24	47	75	94	65	19	2								316	
PM Peak	17:00	17:00	17:00	17:00	18:00	16:00	19:00								17:00	
Vol.	57	72	128	134	70	16	2								464	

%iles		15th Percentile :	12 MPH
		50th Percentile :	23 MPH
		85th Percentile :	31 MPH
		95th Percentile :	34 MPH

Stats	10 MPH Pace Speed :	21-30 MPH
	Number in Pace :	2154
	Percent in Pace :	45.9%
	Number of Vehicles > 25 MPH :	2108
	Percent of Vehicles > 25 MPH :	44.9%
	Mean Speed(Average) :	23 MPH

Beacon Street
 west of Evelyn Road
 City, State: Newton, MA
 Client: Nitsch/ J. Bandini



PRECISION
 D A T A
 INDUSTRIES, LLC

PO Box 301 Berlin, MA 01503
 Office 508.481.3999 Fax 508.545.1234
 Email: datarequests@pdilic.com

143756 B Volume
 Site Code: 10023.1
 Date Start: 05-Mar-14

Start Time	WB		EB		Combin ed		05-Mar-14 Wed	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		
12:00	1	58	0	86	1	144		
12:15	3	74	3	65	6	139		
12:30	1	86	1	80	2	166		
12:45	3	74	292	2	6	61	292	
01:00	2	67	1	79	3	146		
01:15	1	66	4	62	5	128		
01:30	1	74	1	64	2	138		
01:45	1	5	73	280	1	7	80	285
02:00	0	78	2	82	2	160		
02:15	1	75	0	74	1	149		
02:30	0	81	0	75	0	156		
02:45	1	2	102	336	0	2	73	304
03:00	0	117	0	51	0	168		
03:15	1	114	0	80	1	194		
03:30	1	102	1	70	2	172		
03:45	0	2	107	440	4	5	78	279
04:00	2	103	2	84	4	187		
04:15	1	119	1	95	2	214		
04:30	1	110	2	81	3	191		
04:45	1	5	131	463	6	11	84	344
05:00	2	102	1	92	3	194		
05:15	1	101	5	95	6	196		
05:30	9	99	4	122	13	221		
05:45	7	19	107	409	15	25	101	410
06:00	7	88	9	116	16	204		
06:15	22	67	32	110	54	177		
06:30	27	67	48	86	75	153		
06:45	34	90	58	280	70	159	80	392
07:00	54	67	91	59	145	126		
07:15	54	53	120	55	174	108		
07:30	77	45	128	55	205	100		
07:45	102	287	33	198	112	451	41	210
08:00	100	55	107	32	207	87		
08:15	98	41	56	32	154	73		
08:30	126	33	85	23	211	56		
08:45	99	423	37	166	99	347	34	121
09:00	72	27	75	19	147	46		
09:15	81	36	77	14	158	50		
09:30	52	33	68	21	120	54		
09:45	60	265	11	107	87	307	14	68
10:00	53	21	59	11	112	32		
10:15	70	11	75	12	145	23		
10:30	62	10	60	9	122	19		
10:45	52	237	14	56	94	288	3	35
11:00	68	8	80	6	148	14		
11:15	65	6	69	10	134	16		
11:30	68	5	62	5	130	10		
11:45	68	269	5	24	77	288	3	24
Total	1612	3051	1896	2764	3508	5815		
Percent	46.0%	52.5%	54.0%	47.5%				
Day Total		4663		4660		9323		
Peak	07:45	-	04:00	-	07:15	-	05:15	-
Vol.	426	-	463	-	467	-	800	-
P.H.F.	0.845	-	0.884	-	0.912	-	0.935	-

Beacon Street
west of Evelyn Road
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Email: datarequests@pdific.com

143756 B Volume
Site Code: 10023.1
Date Start: 05-Mar-14

Start Time	WB		EB		Combin ed		06-Mar-14 Thu					
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.						
12:00	2	74	1	73	3	147						
12:15	1	86	2	78	3	164						
12:30	0	83	1	88	1	171						
12:45	2	5	65	308	1	5	77	316	3	10	142	624
01:00	2	77	2	68	4	145						
01:15	1	70	1	74	2	144						
01:30	3	67	2	65	5	132						
01:45	0	6	68	282	1	6	79	286	1	12	147	568
02:00	1	72	1	61	2	133						
02:15	3	72	1	56	4	128						
02:30	0	64	0	64	0	128						
02:45	0	4	88	296	0	2	76	257	0	6	164	553
03:00	2	104	1	64	3	168						
03:15	0	107	0	74	0	181						
03:30	0	102	0	76	0	178						
03:45	1	3	124	437	3	4	83	297	4	7	207	734
04:00	2	116	1	72	3	188						
04:15	1	108	1	94	2	202						
04:30	0	101	2	93	2	194						
04:45	3	6	102	427	4	8	100	359	7	14	202	786
05:00	3	112	4	86	7	198						
05:15	2	95	5	145	7	240						
05:30	3	116	12	110	15	226						
05:45	8	16	87	410	14	35	123	464	22	51	210	874
06:00	10	93	16	115	26	208						
06:15	19	88	23	93	42	181						
06:30	28	82	40	75	68	157						
06:45	32	89	57	320	61	140	72	355	93	229	129	675
07:00	61	57	83	115	81	144	138		144		138	
07:15	59	63	115	52	174	115			174		115	
07:30	93	43	136	48	229	91			229		91	
07:45	91	304	47	210	114	448	30	211	205	752	77	421
08:00	139	32	110	45	249	77			249		77	
08:15	106	48	72	23	178	71			178		71	
08:30	94	37	68	33	162	70			162		70	
08:45	83	422	30	147	103	353	27	128	186	775	57	275
09:00	88	45	70	16	158	61			158		61	
09:15	87	28	76	26	163	54			163		54	
09:30	67	26	104	22	171	48			171		48	
09:45	52	294	37	136	85	335	16	80	137	629	53	216
10:00	57	21	52	8	109	29			109		29	
10:15	62	21	68	13	130	34			130		34	
10:30	58	19	57	15	115	34			115		34	
10:45	68	245	10	71	66	243	7	43	134	488	17	114
11:00	54	14	69	8	123	22			123		22	
11:15	54	6	84	9	138	15			138		15	
11:30	63	3	55	7	118	10			118		10	
11:45	89	260	7	30	79	287	5	29	168	547	12	59
Total	1654		3074		1866		2825		3520		5899	
Percent	47.0%		52.1%		53.0%		47.9%					
Day Total		4728		4691		9419						
Peak	07:45	-	03:30	-	07:15	-	05:15	-	07:30	-	05:15	-
Vol.	430	-	450	-	475	-	493	-	861	-	884	-
P.H.F.	0.773		0.907		0.873		0.850		0.864		0.921	

Beethoven Avenue
 south of Beacon Street
 City, State: Newton, MA
 Client: Nitsch/ J. Bandini



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 Office 508.481.3999 Fax 508.545.1734
 Email: datarequest@pdillc.com

143756 C Class
 Site Code: 10023.1
 Date Start: 05-Mar-14

SB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
	03/05/1														
	4	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	06:00	0	5	2	0	1	0	0	0	0	0	0	0	0	8
	07:00	0	21	1	0	0	1	0	0	0	0	0	0	0	23
	08:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
	09:00	0	26	3	0	0	0	0	0	0	0	0	0	0	29
	10:00	0	24	3	0	0	0	0	0	0	0	0	0	0	27
	11:00	0	31	7	0	1	0	0	0	0	0	0	0	0	39
	12 PM	0	26	3	0	0	0	0	0	0	0	0	0	0	29
	13:00	0	27	4	0	4	0	0	0	0	0	0	0	0	35
	14:00	0	20	2	0	0	0	0	0	0	0	0	0	0	22
	15:00	1	29	2	0	0	0	0	0	0	0	0	0	0	32
	16:00	0	53	3	0	0	0	0	0	0	0	0	0	0	56
	17:00	0	72	2	0	2	0	0	0	0	0	0	0	0	76
	18:00	0	62	2	0	0	0	0	0	0	0	0	0	0	64
	19:00	0	41	2	0	0	0	0	0	0	0	0	0	0	43
	20:00	0	21	2	0	0	0	0	0	0	0	0	0	0	23
	21:00	0	29	0	0	0	0	0	0	0	0	0	0	0	29
	22:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
	23:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
	Total	1	515	39	0	8	1	0	0	0	0	0	0	0	564
	Percent	0.2%	91.3%	6.9%	0.0%	1.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	AM Peak		11:00	11:00		06:00	07:00								11:00
	Vol.		31	7		1	1								39
	PM Peak	15:00	17:00	13:00		13:00									17:00
	Vol.	1	72	4		4									76

Beethoven Avenue
 south of Beacon Street
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 Client: Nitsch/ J. Bandini



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143756 C Class
 Site Code: 10023.1
 Date Start: 05-Mar-14

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
03/06/1														
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
06:00	0	10	2	0	1	0	0	0	0	0	0	0	0	13
07:00	0	20	1	0	0	0	0	0	0	0	0	0	0	21
08:00	0	12	1	0	0	0	0	0	0	0	0	0	0	13
09:00	0	32	3	0	0	0	0	0	0	0	0	0	0	35
10:00	0	30	5	0	0	0	0	0	0	0	0	0	0	35
11:00	0	24	5	0	3	0	0	0	0	0	0	0	0	32
12 PM	0	33	2	0	0	0	0	0	0	0	0	0	0	35
13:00	0	22	4	0	0	0	0	0	0	0	0	0	0	26
14:00	0	17	1	0	0	0	0	0	0	0	0	0	0	18
15:00	0	21	2	0	0	0	0	0	0	0	0	0	0	23
16:00	0	61	1	0	0	0	0	0	0	0	0	0	0	62
17:00	0	84	4	0	0	1	0	0	0	0	0	0	0	89
18:00	0	68	2	0	0	0	0	0	0	0	0	0	0	70
19:00	0	39	3	0	1	0	0	0	0	0	0	0	0	43
20:00	0	32	0	0	0	0	0	0	0	0	0	0	0	32
21:00	0	34	0	0	0	0	0	0	0	0	0	0	0	34
22:00	0	17	0	0	0	0	0	0	0	0	0	0	0	17
23:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
Total	0	575	36	0	5	1	0	0	0	0	0	0	0	617
Percent	0.0%	93.2%	5.8%	0.0%	0.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		09:00	10:00		11:00									09:00
Vol.		32	5		3									35
PM Peak		17:00	13:00		19:00	17:00								17:00
Vol.		84	4		1	1								89
Total		1090	75	0	13	2	0	0	0	0	0	0	0	1181

Beethoven Avenue
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143756 C Class
 Site Code: 10023.1
 Date Start: 05-Mar-14

NB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
	03/05/1														
	4	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	04:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
	05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	06:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
	07:00	0	100	8	0	0	1	0	0	0	0	0	0	0	109
	08:00	1	147	3	0	2	0	0	0	0	0	0	0	0	153
	09:00	0	53	5	0	0	0	0	0	0	0	0	0	0	58
	10:00	0	31	3	0	3	0	0	0	0	0	0	0	0	37
	11:00	0	37	6	0	2	0	0	0	0	0	0	0	0	45
	12 PM	0	39	5	0	1	0	0	0	0	0	0	0	0	45
	13:00	1	34	6	0	0	0	0	0	0	0	0	0	0	41
	14:00	0	42	3	0	0	0	0	0	0	0	0	0	0	45
	15:00	1	87	1	0	2	0	0	0	0	0	0	0	0	91
	16:00	0	31	1	0	0	0	0	0	0	0	0	0	0	32
	17:00	0	59	1	0	1	0	0	0	0	0	0	0	0	61
	18:00	0	35	1	0	0	0	0	0	0	0	0	0	0	36
	19:00	0	28	0	0	1	0	0	0	0	0	0	0	0	29
	20:00	0	19	1	0	0	0	0	0	0	0	0	0	0	20
	21:00	0	13	0	0	0	0	0	0	0	0	0	0	0	13
	22:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
	23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	Total	3	780	45	0	12	1	0	0	0	0	0	0	0	841
	Percent	0.4%	92.7%	5.4%	0.0%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	AM Peak	08:00	08:00	07:00		10:00	07:00								08:00
	Vol.	1	147	8		3	1								153
	PM Peak	13:00	15:00	13:00		15:00									15:00
	Vol.	1	87	6		2									91

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143756 C Class
Site Code: 10023.1
Date Start: 05-Mar-14

NB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
	03/06/1														
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	06:00	0	22	0	0	0	0	0	0	0	0	0	0	0	22
	07:00	0	85	7	0	0	1	0	0	0	0	0	0	0	93
	08:00	1	162	4	0	3	0	0	0	0	0	0	0	0	170
	09:00	0	49	3	0	0	0	0	0	0	0	0	0	0	52
	10:00	0	40	6	0	3	0	0	0	0	0	0	0	0	49
	11:00	0	34	5	0	2	0	0	0	0	0	0	0	0	41
	12 PM	1	39	2	0	3	0	0	0	0	0	0	0	0	45
	13:00	0	31	3	1	1	0	0	0	0	0	0	0	0	36
	14:00	0	40	2	0	0	0	0	0	0	0	0	0	0	42
	15:00	0	94	7	0	2	1	0	0	0	0	0	0	0	104
	16:00	0	37	2	0	0	0	0	0	0	0	0	0	0	39
	17:00	0	65	2	0	0	0	0	0	0	0	0	0	0	67
	18:00	0	51	2	0	0	0	0	0	0	0	0	0	0	53
	19:00	0	30	0	0	1	0	0	0	0	0	0	0	0	31
	20:00	0	25	0	0	0	0	0	0	0	0	0	0	0	25
	21:00	0	11	0	0	0	0	0	0	0	0	0	0	0	11
	22:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
	23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	Total	2	832	45	1	15	2	0	0	0	0	0	0	0	897
	Percent	0.2%	92.8%	5.0%	0.1%	1.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	AM Peak	08:00	08:00	07:00		08:00	07:00								08:00
	Vol.	1	162	7		3	1								170
	PM Peak	12:00	15:00	15:00	13:00	12:00	15:00								15:00
	Vol.	1	94	7	1	3	1								104
	Total		1612	90	1	27	3	0	0	0	0	0	0	0	1738

Beethoven Avenue
 south of Beacon Street
 City, State: Newton, MA
 Client: Nitsch/ J. Bandini



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 Office 508.481.3999 Fax 508.545.1234
 Email: datarequest@pdiiic.com

143756 C Speed
 Site Code: 10023.1
 Date Start: 05-Mar-14

SB	Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th %ile	Ave Speed
		14	19	24	29	34	39	44	49	54	59	64	69	9999			
03/05/																	
14	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	22	18
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	21	13
05:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	32	29
06:00	0	3	2	2	1	0	0	0	0	0	0	0	0	0	8	28	21
07:00	2	3	9	6	2	0	0	1	0	0	0	0	0	0	23	28	22
08:00	1	0	1	1	0	0	0	0	0	0	0	0	0	0	3	26	17
09:00	5	7	13	4	0	0	0	0	0	0	0	0	0	0	29	23	17
10:00	3	7	9	7	1	0	0	0	0	0	0	0	0	0	27	26	19
11:00	1	7	17	14	0	0	0	0	0	0	0	0	0	0	39	26	21
12 PM	2	5	13	9	0	0	0	0	0	0	0	0	0	0	29	26	20
13:00	2	12	14	6	1	0	0	0	0	0	0	0	0	0	35	24	19
14:00	1	7	7	6	1	0	0	0	0	0	0	0	0	0	22	26	20
15:00	1	2	16	8	5	0	0	0	0	0	0	0	0	0	32	29	23
16:00	1	4	23	24	4	0	0	0	0	0	0	0	0	0	56	28	24
17:00	0	1	37	29	8	1	0	0	0	0	0	0	0	0	76	29	25
18:00	0	1	29	29	4	1	0	0	0	0	0	0	0	0	64	28	25
19:00	1	2	16	20	4	0	0	0	0	0	0	0	0	0	43	28	24
20:00	0	0	10	9	4	0	0	0	0	0	0	0	0	0	23	29	26
21:00	0	0	4	18	6	1	0	0	0	0	0	0	0	0	29	31	28
22:00	0	0	5	6	1	0	0	0	0	0	0	0	0	0	12	28	25
23:00	0	0	1	6	1	0	0	0	0	0	0	0	0	0	8	29	27

%	3.7%	11.0%	40.4%	36.3%	7.8%	0.5%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	09:00	09:00	07:00	07:00			07:00							09:00
Vol.	5	7	13	6	2			1							29
Midda y Peak	12:00	13:00	11:00	11:00	13:00										11:00
Vol.	2	12	17	14	1										39
PM Peak	15:00	16:00	17:00	17:00	17:00	17:00									17:00
Vol.	1	4	37	29	8	1									76

% ile
 15th Percentile : 15 MPH
 50th Percentile : 22 MPH
 85th Percentile : 28 MPH
 95th Percentile : 30 MPH

Stats
 10 MPH Pace Speed : 20-29 MPH
 Number in Pace : 364
 Percent in Pace : 64.5%
 Number of Vehicles > 20 MPH : 413
 Percent of Vehicles > 20 MPH : 73.2%
 Mean Speed(Average) : 23 MPH

Beethoven Avenue
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 Client: Nitsch/ J. Bandini



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 Email: datarequests@pdillc.com

143756 C Speed
 Site Code: 10023.1
 Date Start: 05-Mar-14

SB	Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
		14	19	24	29	34	39	44	49	54	59	64	69	9999			
03/06/																	
	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
	01:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	27
	02:00	0	0	1	0	1	0	0	0	0	0	0	0	0	2	32	27
	03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
	04:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2	32	29
	05:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2	32	22
	06:00	1	1	2	5	3	1	0	0	0	0	0	0	0	13	32	25
	07:00	4	2	4	6	5	0	0	0	0	0	0	0	0	21	30	21
	08:00	0	3	9	1	0	0	0	0	0	0	0	0	0	13	23	20
	09:00	1	8	11	15	0	0	0	0	0	0	0	0	0	35	27	21
	10:00	0	1	16	11	7	0	0	0	0	0	0	0	0	35	30	25
	11:00	1	5	10	12	3	1	0	0	0	0	0	0	0	32	28	23
	12 PM	3	7	11	13	1	0	0	0	0	0	0	0	0	35	27	20
	13:00	0	3	13	10	0	0	0	0	0	0	0	0	0	26	26	23
	14:00	2	2	8	4	2	0	0	0	0	0	0	0	0	18	27	21
	15:00	4	1	7	9	2	0	0	0	0	0	0	0	0	23	28	20
	16:00	1	8	20	28	4	1	0	0	0	0	0	0	0	62	28	23
	17:00	6	5	31	41	6	0	0	0	0	0	0	0	0	89	28	23
	18:00	1	2	24	40	3	0	0	0	0	0	0	0	0	70	28	25
	19:00	2	1	14	22	4	0	0	0	0	0	0	0	0	43	28	24
	20:00	1	1	13	11	5	1	0	0	0	0	0	0	0	32	30	25
	21:00	0	1	10	20	3	0	0	0	0	0	0	0	0	34	28	25
	22:00	0	0	6	8	3	0	0	0	0	0	0	0	0	17	30	26
	23:00	0	0	5	4	3	0	0	0	0	0	0	0	0	12	31	26

%	4.4%	8.4%	34.8%	42.5%	9.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	09:00	09:00	09:00	07:00	06:00									09:00		
Vol.	4	8	11	15	5	1									35		
Midday Peak	12:00	12:00	13:00	12:00	11:00	11:00									12:00		
Vol.	3	7	13	13	3	1									35		
PM Peak	17:00	16:00	17:00	17:00	17:00	16:00									17:00		
Vol.	6	8	31	41	6	1									89		
% ile			15th Percentile :		16 MPH												
			50th Percentile :		23 MPH												
			85th Percentile :		28 MPH												
			95th Percentile :		31 MPH												

Stats	10 MPH Pace Speed :	20-29 MPH
	Number in Pace :	403
	Percent in Pace :	65.3%
	Number of Vehicles > 20 MPH :	483
	Percent of Vehicles > 20 MPH :	78.2%
	Mean Speed(Average) :	23 MPH

Beethoven Avenue
 south of Beacon Street
 City, State: Newton, MA
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PRECISION
 DATA
 INDUSTRIES, LLC

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143756 C Speed
 Site Code: 10023.1
 Date Start: 05-Mar-14

NB	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th %ile	Ave Speed
Start Time	14	19	24	29	34	39	44	49	54	59	64	69	9999			
03/05/																
14	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11	8
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	27
04:00	0	0	0	3	0	0	0	0	0	0	0	0	0	3	28	27
05:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2	27	24
06:00	0	0	3	6	4	1	0	0	0	0	0	0	0	14	32	28
07:00	3	13	46	38	7	2	0	0	0	0	0	0	0	109	28	23
08:00	77	33	32	10	1	0	0	0	0	0	0	0	0	153	20	13
09:00	10	10	26	11	1	0	0	0	0	0	0	0	0	58	24	18
10:00	6	8	14	8	1	0	0	0	0	0	0	0	0	37	25	18
11:00	3	7	23	9	2	1	0	0	0	0	0	0	0	45	26	21
12 PM	5	12	17	8	3	0	0	0	0	0	0	0	0	45	25	19
13:00	6	5	15	15	0	0	0	0	0	0	0	0	0	41	26	20
14:00	8	12	21	3	1	0	0	0	0	0	0	0	0	45	23	17
15:00	40	19	17	11	3	1	0	0	0	0	0	0	0	91	22	14
16:00	3	4	9	16	0	0	0	0	0	0	0	0	0	32	27	21
17:00	2	5	30	22	2	0	0	0	0	0	0	0	0	61	27	22
18:00	0	4	19	9	4	0	0	0	0	0	0	0	0	36	28	23
19:00	0	1	8	14	6	0	0	0	0	0	0	0	0	29	30	26
20:00	0	1	6	12	0	1	0	0	0	0	0	0	0	20	28	25
21:00	0	0	8	3	2	0	0	0	0	0	0	0	0	13	29	25
22:00	0	0	0	1	1	1	0	0	0	0	0	0	0	3	36	32
23:00	0	0	1	0	1	0	0	0	0	0	0	0	0	2	32	27

%	19.5%	15.9%	35.2%	23.9%	4.6%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AM Peak Vol.	77	33	46	38	7	2							
Midda y Peak Vol.	8	12	23	15	3	1							
PM Peak Vol.	40	19	30	22	6	1							
% ile			15th Percentile :	7 MPH									
			50th Percentile :	19 MPH									
			85th Percentile :	26 MPH									
			95th Percentile :	29 MPH									

Stats	10 MPH Pace Speed :	18-27 MPH
	Number in Pace :	387
	Percent in Pace :	46.0%
	Number of Vehicles > 20 MPH :	427
	Percent of Vehicles > 20 MPH :	50.8%
	Mean Speed(Average) :	18 MPH

Beethoven Avenue
 south of Beacon Street
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 Client: Nitsch/ J. Bandini



PRECISION
 D A T A
 INDUSTRIES, LLC

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143756 C Speed
 Site Code: 10023.1
 Date Start: 05-Mar-14

NB	Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th %ile	Ave Speed
03/06/	14	14	19	24	29	34	39	44	49	54	59	64	69	9999			
	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
	01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
	02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	27
	03:00	0	0	1	0	1	0	0	0	0	0	0	0	0	2	32	27
	04:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	27
	05:00	0	0	0	0	2	0	0	0	0	0	0	0	0	2	33	32
	06:00	0	1	7	10	3	1	0	0	0	0	0	0	0	22	30	26
	07:00	7	10	30	33	12	1	0	0	0	0	0	0	0	93	29	22
	08:00	66	47	46	11	0	0	0	0	0	0	0	0	0	170	21	14
	09:00	3	12	19	14	4	0	0	0	0	0	0	0	0	52	27	21
	10:00	3	11	15	17	3	0	0	0	0	0	0	0	0	49	27	21
	11:00	2	5	16	17	1	0	0	0	0	0	0	0	0	41	27	22
	12 PM	6	15	15	8	1	0	0	0	0	0	0	0	0	45	24	18
	13:00	5	7	13	8	3	0	0	0	0	0	0	0	0	36	26	19
	14:00	7	13	14	8	0	0	0	0	0	0	0	0	0	42	24	17
	15:00	42	21	21	16	4	0	0	0	0	0	0	0	0	104	23	14
	16:00	5	6	16	10	2	0	0	0	0	0	0	0	0	39	26	20
	17:00	5	13	28	19	2	0	0	0	0	0	0	0	0	67	26	20
	18:00	0	6	22	19	6	0	0	0	0	0	0	0	0	53	28	24
	19:00	0	4	10	14	3	0	0	0	0	0	0	0	0	31	28	24
	20:00	0	0	12	11	2	0	0	0	0	0	0	0	0	25	28	25
	21:00	0	1	7	3	0	0	0	0	0	0	0	0	0	11	26	22
	22:00	0	1	3	4	1	0	0	0	0	0	0	0	0	9	28	24
	23:00	0	0	0	2	0	0	0	0	0	0	0	0	0	2	28	27

%	16.8%	19.3%	32.9%	25.2%	5.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
AM Peak	08:00	08:00	08:00	07:00	07:00	06:00										08:00	
Vol.	66	47	46	33	12	1										170	
Midday Peak	14:00	12:00	11:00	11:00	13:00											12:00	
Vol.	7	15	16	17	3											45	
PM Peak	15:00	15:00	17:00	17:00	18:00											15:00	
Vol.	42	21	28	19	6											104	

%iles
 15th Percentile : 8 MPH
 50th Percentile : 19 MPH
 85th Percentile : 26 MPH
 95th Percentile : 29 MPH

Stats
 10 MPH Pace Speed : 18-27 MPH
 Number in Pace : 412
 Percent in Pace : 45.9%
 Number of Vehicles > 20 MPH : 462
 Percent of Vehicles > 20 MPH : 51.5%
 Mean Speed(Average) : 19 MPH

Beethoven Avenue
 south of Beacon Street
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 INDUSTRIES, LLC

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143756 C Volume
 Site Code: 10023.1
 Date Start: 05-Mar-14

Start Time	SB		NB		Combin ed		05-Mar-14 Wed
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00	0	3	0	7	0	10	
12:15	2	10	1	5	3	15	
12:30	0	11	0	22	0	33	
12:45	0	2 5	29 0	1 11	45 0	16 74	
01:00	0	10	0	8	0	18	
01:15	0	6	0	11	0	17	
01:30	0	7	0	14	0	21	
01:45	0	0 12	35 0	0 8	41 0	20 76	
02:00	0	5	0	6	0	11	
02:15	0	8	0	6	0	14	
02:30	0	8	0	14	0	22	
02:45	0	0 1	22 0	0 19	45 0	20 67	
03:00	0	1	0	49	0	50	
03:15	0	8	0	27	0	35	
03:30	0	11	0	11	0	22	
03:45	0	0 12	32 1	1 4	91 1	16 123	
04:00	1	10	0	7	1	17	
04:15	1	15	0	10	1	25	
04:30	0	16	1	5	1	21	
04:45	0	2 15	56 2	3 10	32 2	25 88	
05:00	1	20	0	13	1	33	
05:15	0	19	1	14	1	33	
05:30	0	17	1	18	1	35	
05:45	1	2 20	76 0	2 16	61 1	36 137	
06:00	0	27	1	7	1	34	
06:15	1	12	2	13	3	25	
06:30	0	14	5	9	5	23	
06:45	7	8 11	64 6	14 7	36 13	18 100	
07:00	5	9	14	9	19	18	
07:15	7	14	29	9	36	23	
07:30	4	6	36	5	40	11	
07:45	7	23 14	43 30	109 6	29 37	132 20	72
08:00	1	6	28	8	29	14	
08:15	0	8	65	3	65	11	
08:30	1	2	42	4	43	6	
08:45	1	3 7	23 18	153 5	20 19	156 12	43
09:00	6	9	21	2	27	11	
09:15	8	6	12	2	20	8	
09:30	8	6	15	8	23	14	
09:45	7	29 8	29 10	58 1	13 17	87 9	42
10:00	6	5	4	1	10	6	
10:15	6	0	11	2	17	2	
10:30	6	5	6	0	12	5	
10:45	9	27 2	12 16	37 0	3 25	64 2	15
11:00	8	1	7	1	15	2	
11:15	14	5	5	0	19	5	
11:30	11	2	11	1	22	3	
11:45	6	39 0	8 22	45 0	2 28	84 0	10
Total	135	429	423	418	558	847	
Percent	24.2%	50.6%	75.8%	49.4%			
Day Total		564		841		1405	
Peak	10:45	- 05:15	- 07:45	- 02:30	- 07:45	- 05:15	- - -
Vol.	42	- 83	- 165	- 109	- 174	- 138	- - -
P.H.F.	0.750	0.769	0.635	0.556	0.669	0.958	

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143756 C Volume
 Site Code: 10023.1
 Date Start: 05-Mar-14

Start Time	SB		NB		Combin ed	06-Mar-14 Thu						
	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.					
12:00	0	11	0	0		8	19					
12:15	0	6	0	0		9	15					
12:30	0	13	0	0		16	29					
12:45	0	5	35	0	0	12	45	0	17	80		
01:00	1	11	0	0		7	1	18				
01:15	0	6	0	0		9	0	15				
01:30	0	5	0	0		12	0	17				
01:45	0	4	26	0	0	8	36	0	1	12	62	
02:00	0	6	0	0		6	0	12				
02:15	1	4	0	0		13	1	17				
02:30	1	4	1	1		7	2	11				
02:45	0	4	18	0	1	16	42	0	3	20	60	
03:00	0	0	1	1		46	1	46				
03:15	0	3	0	0		34	0	37				
03:30	0	13	0	0		10	0	23				
03:45	0	7	23	1	2	14	104	1	2	21	127	
04:00	1	16	0	0		7	1	23				
04:15	1	8	0	0		16	1	24				
04:30	0	18	1	1		9	1	27				
04:45	0	2	20	62	0	1	7	39	0	3	27	101
05:00	2	23	0	0		13	2	36				
05:15	0	21	1	1		17	1	38				
05:30	0	18	0	0		22	0	40				
05:45	0	2	27	89	1	2	15	67	1	4	42	156
06:00	3	27	2	2		16	5	43				
06:15	3	18	5	5		9	8	27				
06:30	3	15	8	8		11	11	26				
06:45	4	13	10	70	7	22	17	53	11	35	27	123
07:00	3	14	15	15		12	18	26				
07:15	6	13	17	17		11	23	24				
07:30	6	8	30	30		5	36	13				
07:45	6	21	8	43	31	93	3	31	37	114	11	74
08:00	6	10	36	36		8	42	18				
08:15	2	10	77	77		5	79	15				
08:30	2	6	39	39		7	41	13				
08:45	3	13	6	32	18	170	5	25	21	183	11	57
09:00	7	8	21	21		4	28	12				
09:15	10	8	9	9		2	19	10				
09:30	12	12	12	12		2	24	14				
09:45	6	35	6	34	10	52	3	11	16	87	9	45
10:00	9	5	18	18		1	27	6				
10:15	5	7	8	8		4	13	11				
10:30	15	4	10	10		2	25	6				
10:45	6	35	1	17	13	49	2	9	19	84	3	26
11:00	9	5	12	12		0	21	5				
11:15	12	2	10	10		1	22	3				
11:30	4	2	5	5		0	9	2				
11:45	7	32	3	12	14	41	1	2	21	73	4	14
Total	156		461		433		464		589		925	
Percent	26.5%		49.8%		73.5%		50.2%					
Day Total		617			897				1514			
Peak	10:30	-	05:15	-	07:45	-	02:45	-	07:45	-	05:15	-
Vol.	42	-	93	-	183	-	106	-	199	-	163	-
P.H.F.	0.700		0.861		0.594		0.576		0.630		0.948	

N/S: Evelyn Road/ Beethoven Avenue
 E/W: Beacon Street
 City, State: Newton, MA
 Client: Nitsch/ J. Bandini



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File Name : 143756 A
 Site Code : 10023.1
 Start Date : 3/6/2014
 Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Evelyn Road From North				Beacon Street From East				Beethoven Avenue From South				Beacon Street From West				Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
07:00 AM	0	2	2	0	1	60	3	0	7	6	3	0	2	83	1	0	170
07:15 AM	3	4	3	0	3	52	5	0	8	6	2	0	3	109	5	0	203
07:30 AM	4	4	2	0	3	90	4	0	6	18	2	0	2	125	11	0	271
07:45 AM	1	5	1	0	2	96	3	0	11	17	1	0	4	114	7	0	262
Total	8	15	8	0	9	298	15	0	32	47	8	0	11	431	24	0	906
08:00 AM	8	3	2	0	3	126	0	0	8	12	12	0	2	108	8	0	292
08:15 AM	4	0	3	0	1	111	0	0	18	21	23	0	0	93	4	0	278
08:30 AM	8	1	6	0	2	115	0	0	20	12	20	0	0	109	1	0	294
08:45 AM	4	2	2	0	1	91	2	0	7	8	1	0	0	104	1	0	223
Total	24	6	13	0	7	443	2	0	53	53	56	0	2	414	14	0	1087
Grand Total	32	21	21	0	16	741	17	0	85	100	64	0	13	845	38	0	1993
Apprch %	43.2	28.4	28.4	0	2.1	95.7	2.2	0	34.1	40.2	25.7	0	1.5	94.3	4.2	0	
Total %	1.6	1.1	1.1	0	0.8	37.2	0.9	0	4.3	5	3.2	0	0.7	42.4	1.9	0	
Cars	32	21	20	0	16	723	17	0	83	99	62	0	12	831	38	0	1954
% Cars	100	100	95.2	0	100	97.6	100	0	97.6	99	96.9	0	92.3	98.3	100	0	98
Heavy Vehicles	0	0	1	0	0	18	0	0	2	1	2	0	1	14	0	0	39
% Heavy Vehicles	0	0	4.8	0	0	2.4	0	0	2.4	1	3.1	0	7.7	1.7	0	0	2

Start Time	Evelyn Road From North					Beacon Street From East					Beethoven Avenue From South					Beacon Street From West					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	1	5	1	0	7	2	96	3	0	101	11	17	1	0	29	4	114	7	0	125	262
08:00 AM	8	3	2	0	13	3	126	0	0	129	8	12	12	0	32	2	108	8	0	118	292
08:15 AM	4	0	3	0	7	1	111	0	0	112	18	21	23	0	62	0	93	4	0	97	278
08:30 AM	8	1	6	0	15	2	115	0	0	117	20	12	20	0	52	0	109	1	0	110	294
Total Volume	21	9	12	0	42	8	448	3	0	459	57	62	56	0	175	6	424	20	0	450	1126
% App. Total	50	21.4	28.6	0		1.7	97.6	0.7	0		32.6	35.4	32	0		1.3	94.2	4.4	0		
PHF	.656	.450	.500	.000	.700	.667	.889	.250	.000	.890	.713	.738	.609	.000	.706	.375	.930	.625	.000	.900	.957
Cars	21	9	11	0	41	8	435	3	0	446	55	62	54	0	171	6	416	20	0	442	1100
% Cars	100	100	91.7	0	97.6	100	97.1	100	0	97.2	96.5	100	96.4	0	97.7	100	98.1	100	0	98.2	97.7
Heavy Vehicles	0	0	1	0	1	0	13	0	0	13	2	0	2	0	4	0	8	0	0	8	26
% Heavy Vehicles	0	0	8.3	0	2.4	0	2.9	0	0	2.8	3.5	0	3.6	0	2.3	0	1.9	0	0	1.8	2.3

N/S: Evelyn Road/ Beethoven Avenue
 E/W: Beacon Street
 City, State: Newton, MA
 Client: Nitsch/ J. Bandini



PRECISION
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File Name : 143756 A
 Site Code : 10023.1
 Start Date : 3/6/2014
 Page No : 1

Groups Printed- Cars

Start Time	Evelyn Road From North				Beacon Street From East				Beethoven Avenue From South				Beacon Street From West				Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
07:00 AM	0	2	2	0	1	59	3	0	7	6	3	0	2	81	1	0	167
07:15 AM	3	4	3	0	3	51	5	0	8	6	2	0	2	106	5	0	198
07:30 AM	4	4	2	0	3	88	4	0	6	17	2	0	2	124	11	0	267
07:45 AM	1	5	0	0	2	93	3	0	10	17	1	0	4	110	7	0	253
Total	8	15	7	0	9	291	15	0	31	46	8	0	10	421	24	0	885
08:00 AM	8	3	2	0	3	119	0	0	8	12	12	0	2	106	8	0	283
08:15 AM	4	0	3	0	1	110	0	0	17	21	22	0	0	92	4	0	274
08:30 AM	8	1	6	0	2	113	0	0	20	12	19	0	0	108	1	0	290
08:45 AM	4	2	2	0	1	90	2	0	7	8	1	0	0	104	1	0	222
Total	24	6	13	0	7	432	2	0	52	53	54	0	2	410	14	0	1069
Grand Total	32	21	20	0	16	723	17	0	83	99	62	0	12	831	38	0	1954
Apprch %	43.8	28.8	27.4	0	2.1	95.6	2.2	0	34	40.6	25.4	0	1.4	94.3	4.3	0	
Total %	1.6	1.1	1	0	0.8	37	0.9	0	4.2	5.1	3.2	0	0.6	42.5	1.9	0	

Start Time	Evelyn Road From North					Beacon Street From East					Beethoven Avenue From South					Beacon Street From West					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	1	5	0	0	6	2	93	3	0	98	10	17	1	0	28	4	110	7	0	121	253
08:00 AM	8	3	2	0	13	3	119	0	0	122	8	12	12	0	32	2	106	8	0	116	283
08:15 AM	4	0	3	0	7	1	110	0	0	111	17	21	22	0	60	0	92	4	0	96	274
08:30 AM	8	1	6	0	15	2	113	0	0	115	20	12	19	0	51	0	108	1	0	109	290
Total Volume	21	9	11	0	41	8	435	3	0	446	55	62	54	0	171	6	416	20	0	442	1100
% App. Total	51.2	22	26.8	0		1.8	97.5	0.7	0		32.2	36.3	31.6	0		1.4	94.1	4.5	0		
PHF	.656	.450	.458	.000	.683	.667	.914	.250	.000	.914	.688	.738	.614	.000	.713	.375	.945	.625	.000	.913	.948

N/S: Evelyn Road/ Beethoven Avenue
 E/W: Beacon Street
 City, State: Newton, MA
 Client: Nitsch/ J. Bandini



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 Site Code : 10023.1
 Start Date : 3/6/2014
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Evelyn Road From North				Beacon Street From East				Beethoven Avenue From South				Beacon Street From West				Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
07:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
07:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	3	0	0	5
07:30 AM	0	0	0	0	0	2	0	0	0	1	0	0	0	1	0	0	4
07:45 AM	0	0	1	0	0	3	0	0	1	0	0	0	0	4	0	0	9
Total	0	0	1	0	0	7	0	0	1	1	0	0	1	10	0	0	21
08:00 AM	0	0	0	0	0	7	0	0	0	0	0	0	0	2	0	0	9
08:15 AM	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	4
08:30 AM	0	0	0	0	0	2	0	0	0	0	1	0	0	1	0	0	4
08:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	11	0	0	1	0	2	0	0	4	0	0	18
Grand Total	0	0	1	0	0	18	0	0	2	1	2	0	1	14	0	0	39
Apprch %	0	0	100	0	0	100	0	0	40	20	40	0	6.7	93.3	0	0	
Total %	0	0	2.6	0	0	46.2	0	0	5.1	2.6	5.1	0	2.6	35.9	0	0	

Start Time	Evelyn Road From North					Beacon Street From East					Beethoven Avenue From South					Beacon Street From West					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	3	0	0	4	5
07:30 AM	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1	4
07:45 AM	0	0	1	0	1	0	3	0	0	3	1	0	0	0	1	0	4	0	0	4	9
08:00 AM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	2	0	0	2	9
Total Volume	0	0	1	0	1	0	13	0	0	13	1	1	0	0	2	1	10	0	0	11	27
% App. Total	0	0	100	0		0	100	0	0		50	50	0	0		9.1	90.9	0	0		
PHF	.000	.000	.250	.000	.250	.000	.464	.000	.000	.464	.250	.250	.000	.000	.500	.250	.625	.000	.000	.688	.750

Section A-4

Capacity Analysis

Lanes, Volumes, Timings
1: Beethoven Ave./Evelyn Rd. & Beacon St.

Zervas School
2014 Existing AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	20	424	6	3	448	8	56	62	57	12	9	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998			0.956			0.932	
Flt Protected		0.998						0.984			0.986	
Satd. Flow (prot)	0	1857	0	0	1842	0	0	1762	0	0	1707	0
Flt Permitted		0.970			0.998			0.881			0.737	
Satd. Flow (perm)	0	1805	0	0	1839	0	0	1578	0	0	1276	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2			26			30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1505			1884			729			613	
Travel Time (s)		34.2			42.8			16.6			13.9	
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.71	0.71	0.71	0.70	0.70	0.70
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	0%	4%	0%	8%	0%	0%
Adj. Flow (vph)	22	471	7	3	503	9	79	87	80	17	13	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	500	0	0	515	0	0	246	0	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	45.0	45.0		45.0	45.0		15.0	15.0		15.0	15.0	
Total Split (s)	45.0	45.0		45.0	45.0		15.0	15.0		15.0	15.0	
Total Split (%)	57.7%	57.7%		57.7%	57.7%		19.2%	19.2%		19.2%	19.2%	
Maximum Green (s)	40.0	40.0		40.0	40.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		40.0			40.0			10.0			10.0	
Actuated g/C Ratio		0.51			0.51			0.13			0.13	
v/c Ratio		0.54			0.55			1.10			0.32	
Control Delay		15.5			15.5			121.3			23.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		15.5			15.5			121.3			23.5	

Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
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	
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)	
Turn Type	
Protected Phases	7
Permitted Phases	
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings 1: Beethoven Ave./Evelyn Rd. & Beacon St.

Zervas School
2014 Existing AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		B			B			F			C	
Approach Delay		15.5			15.5			121.3			23.5	
Approach LOS		B			B			F			C	
Queue Length 50th (ft)		153			158			~126			13	
Queue Length 95th (ft)		240			242			#182			33	
Internal Link Dist (ft)		1425			1804			649			533	
Turn Bay Length (ft)												
Base Capacity (vph)		926			944			224			189	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.54			0.55			1.10			0.32	

Intersection Summary

Area Type: Other

Cycle Length: 78

Actuated Cycle Length: 78

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 35.6

Intersection LOS: D

Intersection Capacity Utilization 58.4%

ICU Level of Service B

Analysis Period (min) 15

~ 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.

Splits and Phases: 1: Beethoven Ave./Evelyn Rd. & Beacon St.



Lane Group	Ø7
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

1: Beethoven Ave./Evelyn Rd. & Beacon St.

Zervas School
2014 Existing PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	324	2	11	426	6	41	34	33	10	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt		0.999			0.998			0.959			0.932	
Flt Protected					0.999			0.981			0.988	
Satd. Flow (prot)	0	1880	0	0	1856	0	0	1771	0	0	1750	0
Flt Permitted		0.998			0.990			0.855			0.870	
Satd. Flow (perm)	0	1876	0	0	1840	0	0	1544	0	0	1541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1			23			24	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1505			1884			729			613	
Travel Time (s)		34.2			42.8			16.6			13.9	
Peak Hour Factor	0.89	0.98	0.89	0.86	0.86	0.86	0.61	0.61	0.61	0.83	0.83	0.83
Heavy Vehicles (%)	0%	1%	0%	0%	2%	9%	0%	0%	3%	0%	0%	0%
Adj. Flow (vph)	2	331	2	13	495	7	67	56	54	12	12	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	335	0	0	515	0	0	177	0	0	48	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	45.0	45.0		45.0	45.0		15.0	15.0		15.0	15.0	
Total Split (s)	45.0	45.0		45.0	45.0		15.0	15.0		15.0	15.0	
Total Split (%)	57.7%	57.7%		57.7%	57.7%		19.2%	19.2%		19.2%	19.2%	
Maximum Green (s)	40.0	40.0		40.0	40.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		40.0			40.0			10.0			10.0	
Actuated g/C Ratio		0.51			0.51			0.13			0.13	
v/c Ratio		0.35			0.55			0.81			0.22	
Control Delay		12.5			15.6			58.4			21.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		12.5			15.6			58.4			21.6	

Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Fr t	
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	
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)	
Turn Type	
Protected Phases	7
Permitted Phases	
Minimum Split (s)	9.0
Total Split (s)	18.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings
 1: Beethoven Ave./Evelyn Rd. & Beacon St.

Zervas School
 2014 Existing PM

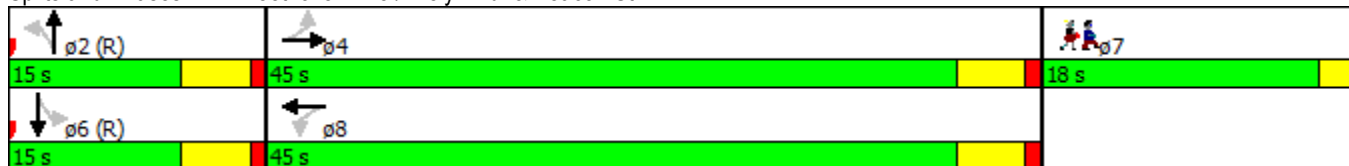


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		B			B			E			C	
Approach Delay		12.5			15.6			58.4			21.6	
Approach LOS		B			B			E			C	
Queue Length 50th (ft)		90			159			74			11	
Queue Length 95th (ft)		145			229			86			36	
Internal Link Dist (ft)		1425			1804			649			533	
Turn Bay Length (ft)												
Base Capacity (vph)		962			944			218			218	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.35			0.55			0.81			0.22	

Intersection Summary

Area Type:	Other
Cycle Length:	78
Actuated Cycle Length:	78
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Pretimed
Maximum v/c Ratio:	0.81
Intersection Signal Delay:	21.9
Intersection LOS:	C
Intersection Capacity Utilization:	51.4%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 1: Beethoven Ave./Evelyn Rd. & Beacon St.



Lane Group	ø7
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
1: Beethoven Ave./Evelyn Rd. & Beacon St.

Zervas School
2024 No-Build AM

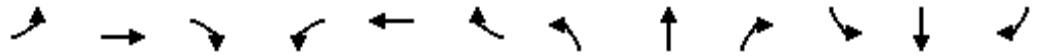


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	22	468	7	3	495	9	62	68	63	13	10	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998			0.956			0.932	
Flt Protected		0.998						0.984			0.986	
Satd. Flow (prot)	0	1857	0	0	1842	0	0	1762	0	0	1707	0
Flt Permitted		0.967			0.998			0.891			0.725	
Satd. Flow (perm)	0	1800	0	0	1839	0	0	1596	0	0	1255	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2			26			33	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1505			1884			729			613	
Travel Time (s)		34.2			42.8			16.6			13.9	
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.71	0.71	0.71	0.70	0.70	0.70
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	0%	4%	0%	8%	0%	0%
Adj. Flow (vph)	24	520	8	3	556	10	87	96	89	19	14	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	552	0	0	569	0	0	272	0	0	66	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	45.0	45.0		45.0	45.0		15.0	15.0		15.0	15.0	
Total Split (s)	45.0	45.0		45.0	45.0		15.0	15.0		15.0	15.0	
Total Split (%)	58.4%	58.4%		58.4%	58.4%		19.5%	19.5%		19.5%	19.5%	
Maximum Green (s)	40.0	40.0		40.0	40.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		40.0			40.0			10.0			10.0	
Actuated g/C Ratio		0.52			0.52			0.13			0.13	
v/c Ratio		0.59			0.60			1.19			0.35	
Control Delay		16.1			16.1			150.4			23.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		16.1			16.1			150.4			23.8	

Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
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	
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)	
Turn Type	
Protected Phases	7
Permitted Phases	
Minimum Split (s)	9.0
Total Split (s)	17.0
Total Split (%)	22%
Maximum Green (s)	15.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings
 1: Beethoven Ave./Evelyn Rd. & Beacon St.

Zervas School
 2024 No-Build AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		B			B			F			C	
Approach Delay		16.1			16.1			150.4			23.8	
Approach LOS		B			B			F			C	
Queue Length 50th (ft)		171			177			~148			14	
Queue Length 95th (ft)		267			269			#204			35	
Internal Link Dist (ft)		1425			1804			649			533	
Turn Bay Length (ft)												
Base Capacity (vph)		935			956			229			191	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.59			0.60			1.19			0.35	

Intersection Summary

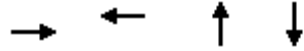
Area Type: Other
 Cycle Length: 77
 Actuated Cycle Length: 77
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Pretimed
 Maximum v/c Ratio: 1.19
 Intersection Signal Delay: 41.5
 Intersection LOS: D
 Intersection Capacity Utilization 63.8%
 ICU Level of Service B
 Analysis Period (min) 15
 ~ 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.

Splits and Phases: 1: Beethoven Ave./Evelyn Rd. & Beacon St.



Lane Group	ø7
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Queues
 1: Beethoven Ave./Evelyn Rd. & Beacon St.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	552	569	272	66
v/c Ratio	0.59	0.60	1.19	0.35
Control Delay	16.1	16.1	150.4	23.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.1	16.1	150.4	23.8
Queue Length 50th (ft)	171	177	~148	14
Queue Length 95th (ft)	267	269	#204	35
Internal Link Dist (ft)	1425	1804	649	533
Turn Bay Length (ft)				
Base Capacity (vph)	935	956	229	191
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.59	0.60	1.19	0.35

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.

Lanes, Volumes, Timings
1: Beethoven Ave./Evelyn Rd. & Beacon St.

Zervas School
2024 No-Build PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	2	358	2	12	471	7	45	38	36	11	11	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.998			0.959			0.931	
Flt Protected					0.999			0.981			0.988	
Satd. Flow (prot)	0	1880	0	0	1856	0	0	1771	0	0	1748	0
Flt Permitted		0.998			0.989			0.853			0.852	
Satd. Flow (perm)	0	1876	0	0	1838	0	0	1540	0	0	1507	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1			23			27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1505			1884			729			613	
Travel Time (s)		34.2			42.8			16.6			13.9	
Peak Hour Factor	0.89	0.98	0.89	0.86	0.86	0.86	0.61	0.61	0.61	0.83	0.83	0.83
Heavy Vehicles (%)	0%	1%	0%	0%	2%	9%	0%	0%	3%	0%	0%	0%
Adj. Flow (vph)	2	365	2	14	548	8	74	62	59	13	13	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	369	0	0	570	0	0	195	0	0	53	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	45.0	45.0		45.0	45.0		15.0	15.0		15.0	15.0	
Total Split (s)	45.0	45.0		45.0	45.0		15.0	15.0		15.0	15.0	
Total Split (%)	58.4%	58.4%		58.4%	58.4%		19.5%	19.5%		19.5%	19.5%	
Maximum Green (s)	40.0	40.0		40.0	40.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		40.0			40.0			10.0			10.0	
Actuated g/C Ratio		0.52			0.52			0.13			0.13	
v/c Ratio		0.38			0.60			0.89			0.24	
Control Delay		12.5			16.1			69.3			21.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		12.5			16.1			69.3			21.2	

Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
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	
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)	
Turn Type	
Protected Phases	7
Permitted Phases	
Minimum Split (s)	9.0
Total Split (s)	17.0
Total Split (%)	22%
Maximum Green (s)	15.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings
 1: Beethoven Ave./Evelyn Rd. & Beacon St.

Zervas School
 2024 No-Build PM

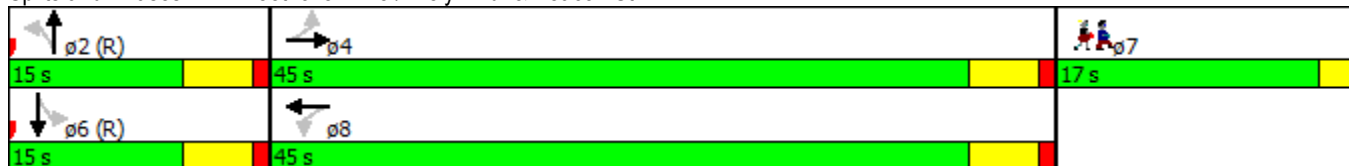


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		B			B			E			C	
Approach Delay		12.5			16.1			69.3			21.2	
Approach LOS		B			B			E			C	
Queue Length 50th (ft)		99			178			82			11	
Queue Length 95th (ft)		158			256			93			38	
Internal Link Dist (ft)		1425			1804			649			533	
Turn Bay Length (ft)												
Base Capacity (vph)		975			955			220			219	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.38			0.60			0.89			0.24	

Intersection Summary

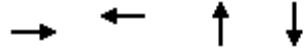
Area Type:	Other
Cycle Length:	77
Actuated Cycle Length:	77
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Pretimed
Maximum v/c Ratio:	0.89
Intersection Signal Delay:	24.0
Intersection LOS:	C
Intersection Capacity Utilization:	52.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 1: Beethoven Ave./Evelyn Rd. & Beacon St.



Lane Group	ø7
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Queues
 1: Beethoven Ave./Evelyn Rd. & Beacon St.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	369	570	195	53
v/c Ratio	0.38	0.60	0.89	0.24
Control Delay	12.5	16.1	69.3	21.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.5	16.1	69.3	21.2
Queue Length 50th (ft)	99	178	82	11
Queue Length 95th (ft)	158	256	93	38
Internal Link Dist (ft)	1425	1804	649	533
Turn Bay Length (ft)				
Base Capacity (vph)	975	955	220	219
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.38	0.60	0.89	0.24

Intersection Summary

Lanes, Volumes, Timings
1: Beethoven Ave./Evelyn Rd. & Beacon St.

Zervas School
2024 Build AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Volume (vph)	22	502	7	3	499	10	117	128	118	20	10	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	12	12	12
Storage Length (ft)	0		0	0		0	0		125	0		0
Storage Lanes	0		0	0		0	0		1	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
Frt		0.998			0.997				0.850		0.941	
Flt Protected		0.998						0.977			0.981	
Satd. Flow (prot)	0	1857	0	0	1840	0	0	1777	1531	0	1702	0
Flt Permitted		0.970			0.997			0.810			0.816	
Satd. Flow (perm)	0	1805	0	0	1835	0	0	1474	1531	0	1416	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		1			1							33
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1505			212			729			613	
Travel Time (s)		34.2			4.8			16.6			13.9	
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.71	0.71	0.71	0.70	0.70	0.70
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%	2%	0%	2%	8%	0%	0%
Adj. Flow (vph)	24	558	8	3	561	11	165	180	166	29	14	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	590	0	0	575	0	0	345	166	0	76	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	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	6	20	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		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	ø10
Lane Configurations	
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	
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	10

Lanes, Volumes, Timings
1: Beethoven Ave./Evelyn Rd. & Beacon St.

Zervas School
2024 Build AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0	21.0	21.0	21.0	
Total Split (s)	34.0	34.0		34.0	34.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	42.5%	42.5%		42.5%	42.5%		31.3%	31.3%	31.3%	31.3%	31.3%	
Maximum Green (s)	29.0	29.0		29.0	29.0		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	
Lead/Lag												
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	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		25.6		25.6			21.0	21.0		21.0		
Actuated g/C Ratio		0.38		0.38			0.31	0.31		0.31		
v/c Ratio		0.85		0.82			0.75	0.35		0.16		
Control Delay		35.0		31.9			38.0	24.8		15.5		
Queue Delay		0.0		0.0			0.0	0.0		0.0		
Total Delay		35.0		31.9			38.0	24.8		15.5		
LOS		C		C			D	C		B		
Approach Delay		35.0		31.9			33.8			15.5		
Approach LOS		C		C			C			B		
Queue Length 50th (ft)		261		250			163	67		16		
Queue Length 95th (ft)		#454		#422			#210	93		34		
Internal Link Dist (ft)		1425		132			649			533		
Turn Bay Length (ft)								125				
Base Capacity (vph)		822		836			462	480		467		
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		0.72		0.69			0.75	0.35		0.16		





Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	66.8
Natural Cycle:	80
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.85
Intersection Signal Delay:	32.8
Intersection LOS:	C
Intersection Capacity Utilization:	71.2%
ICU Level of Service:	C
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	

Lane Group	ø10
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	26%
Maximum Green (s)	18.0
Yellow Time (s)	3.0
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)	11.0
Pedestrian Calls (#/hr)	48
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Queue shown is maximum after two cycles.

Splits and Phases: 1: Beethoven Ave./Evelyn Rd. & Beacon St.

 $\phi 2$	 $\phi 4$	 $\phi 10$
25 s	34 s	21 s
 $\phi 6$	 $\phi 8$	
25 s	34 s	

Queues

1: Beethoven Ave./Evelyn Rd. & Beacon St.



Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	590	575	345	166	76
v/c Ratio	0.85	0.82	0.75	0.35	0.16
Control Delay	35.0	31.9	38.0	24.8	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	31.9	38.0	24.8	15.5
Queue Length 50th (ft)	261	250	163	67	16
Queue Length 95th (ft)	#454	#422	#210	93	34
Internal Link Dist (ft)	1425	132	649		533
Turn Bay Length (ft)				125	
Base Capacity (vph)	822	836	462	480	467
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	0.72	0.69	0.75	0.35	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Unsignalized Intersection Capacity Analysis
 2: Zervas School Entrance/Paulson Road & Beacon St.

Zervas School
 2024 Build AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔	
Volume (veh/h)	2	597	41	42	451	2	0	0	0	17	0	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.92	0.92	0.92	0.75	0.75	0.75
Hourly flow rate (vph)	2	663	46	47	507	2	0	0	0	23	0	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		212										
pX, platoon unblocked				0.71			0.71	0.71	0.71	0.71	0.71	
vC, conflicting volume	509			709			1315	1294	686	1293	1316	508
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	509			389			1241	1211	357	1209	1241	508
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			100	100	100	79	100	96
cM capacity (veh/h)	1066			841			100	123	493	110	118	569

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	711	556	45
Volume Left	2	47	23
Volume Right	46	2	23
cSH	1066	841	184
Volume to Capacity	0.00	0.06	0.25
Queue Length 95th (ft)	0	4	23
Control Delay (s)	0.1	1.5	30.9
Lane LOS	A	A	D
Approach Delay (s)	0.1	1.5	30.9
Approach LOS			D

Intersection Summary		
Average Delay		1.7
Intersection Capacity Utilization	65.9%	ICU Level of Service C
Analysis Period (min)		15

HCM Unsignalized Intersection Capacity Analysis
 3: Zervas School Exit/Amy Circle & Beacon St.

Zervas School
 2024 Build AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘			↕	
Volume (veh/h)	2	612	0	0	472	2	5	0	4	17	0	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.60	0.60	0.60	0.75	0.75	0.75
Hourly flow rate (vph)	2	680	0	0	530	2	8	0	7	23	0	23
Pedestrians		20			20							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		2			2							
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		414										
pX, platoon unblocked				0.73			0.73	0.73	0.73	0.73	0.73	
vC, conflicting volume	533			680			1259	1217	700	1243	1216	551
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	533			376			1169	1112	403	1147	1110	551
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			93	100	99	82	100	96
cM capacity (veh/h)	1045			871			116	153	460	125	154	529

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	682	533	8	7	45
Volume Left	2	0	8	0	23
Volume Right	0	2	0	7	23
cSH	1045	871	116	460	203
Volume to Capacity	0.00	0.00	0.07	0.01	0.22
Queue Length 95th (ft)	0	0	6	1	21
Control Delay (s)	0.1	0.0	38.4	12.9	27.8
Lane LOS	A		E	B	D
Approach Delay (s)	0.1	0.0	27.1		27.8
Approach LOS			D		D

Intersection Summary		
Average Delay		1.3
Intersection Capacity Utilization	49.1%	ICU Level of Service A
Analysis Period (min)		15

Lanes, Volumes, Timings
1: Beethoven Ave./Evelyn Rd. & Beacon St.

Zervas School
2024 Build PM

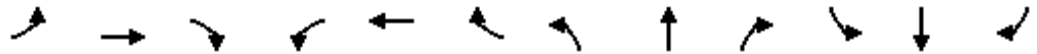


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Volume (vph)	2	361	2	12	509	11	110	92	87	12	11	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	12	12	12
Storage Length (ft)	0		0	0		0	0		125	0		0
Storage Lanes	0		0	0		0	0		1	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
Frt		0.999			0.997				0.850		0.932	
Flt Protected					0.999			0.974			0.987	
Satd. Flow (prot)	0	1879	0	0	1854	0	0	1789	1516	0	1748	0
Flt Permitted		0.998			0.988			0.801			0.897	
Satd. Flow (perm)	0	1876	0	0	1833	0	0	1471	1516	0	1588	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)					1							27
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1505			212			729			613	
Travel Time (s)		34.2			4.8			16.6			13.9	
Peak Hour Factor	0.89	0.89	0.89	0.86	0.86	0.86	0.61	0.61	0.61	0.83	0.83	0.83
Heavy Vehicles (%)	0%	1%	0%	0%	2%	8%	0%	0%	3%	0%	0%	0%
Adj. Flow (vph)	2	406	2	14	592	13	180	151	143	14	13	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	410	0	0	619	0	0	331	143	0	54	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	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	6	20	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		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	ø10
Lane Configurations	
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	
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	10

Lanes, Volumes, Timings
1: Beethoven Ave./Evelyn Rd. & Beacon St.

Zervas School
2024 Build PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0	21.0	21.0	21.0	
Total Split (s)	40.0	40.0		40.0	40.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	44.4%	44.4%		44.4%	44.4%		32.2%	32.2%	32.2%	32.2%	32.2%	
Maximum Green (s)	35.0	35.0		35.0	35.0		24.0	24.0	24.0	24.0	24.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	
Lead/Lag												
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	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		29.2			29.2			25.3	25.3			25.3
Actuated g/C Ratio		0.39			0.39			0.34	0.34			0.34
v/c Ratio		0.56			0.86			0.66	0.28			0.10
Control Delay		22.3			36.4			34.5	25.4			15.2
Queue Delay		0.0			0.0			0.0	0.0			0.0
Total Delay		22.3			36.4			34.5	25.4			15.2
LOS		C			D			C	C			B
Approach Delay		22.3			36.4			31.8				15.2
Approach LOS		C			D			C				B
Queue Length 50th (ft)		171			305			172	64			11
Queue Length 95th (ft)		257			#459			164	74			35
Internal Link Dist (ft)		1425			132			649				533
Turn Bay Length (ft)									125			
Base Capacity (vph)		926			906			498	513			555
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		0.44			0.68			0.66	0.28			0.10






Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 74.8
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 30.6
 Intersection Capacity Utilization 61.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B
 # 95th percentile volume exceeds capacity, queue may be longer.

Lane Group	ø10
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	21.0
Total Split (s)	21.0
Total Split (%)	23%
Maximum Green (s)	18.0
Yellow Time (s)	3.0
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)	11.0
Pedestrian Calls (#/hr)	48
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Queue shown is maximum after two cycles.

Splits and Phases: 1: Beethoven Ave./Evelyn Rd. & Beacon St.

 $\phi 2$	 $\phi 4$	 $\phi 10$
29 s	40 s	21 s
 $\phi 6$	 $\phi 8$	
29 s	40 s	

Queues

1: Beethoven Ave./Evelyn Rd. & Beacon St.



Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	410	619	331	143	54
v/c Ratio	0.56	0.86	0.66	0.28	0.10
Control Delay	22.3	36.4	34.5	25.4	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.3	36.4	34.5	25.4	15.2
Queue Length 50th (ft)	171	305	172	64	11
Queue Length 95th (ft)	257	#459	164	74	35
Internal Link Dist (ft)	1425	132	649		533
Turn Bay Length (ft)				125	
Base Capacity (vph)	926	906	498	513	555
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	0.44	0.68	0.66	0.28	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Unsignalized Intersection Capacity Analysis
 2: Zervas School Entrance/Paulson Road & Beacon St.

Zervas School
 2024 Build PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔	
Volume (veh/h)	2	454	4	5	519	2	0	0	0	6	0	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.86	0.86	0.86	0.92	0.92	0.92	0.75	0.75	0.75
Hourly flow rate (vph)	2	510	4	6	603	2	0	0	0	8	0	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		212										
pX, platoon unblocked				0.83			0.83	0.83	0.83	0.83	0.83	
vC, conflicting volume	606			515			1141	1134	512	1133	1135	605
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	606			316			1069	1061	313	1059	1062	605
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	95	100	98
cM capacity (veh/h)	982			1021			164	186	609	169	186	502

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	517	612	16
Volume Left	2	6	8
Volume Right	4	2	8
cSH	982	1021	253
Volume to Capacity	0.00	0.01	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.1	0.2	20.2
Lane LOS	A	A	C
Approach Delay (s)	0.1	0.2	20.2
Approach LOS			C

Intersection Summary		
Average Delay		0.4
Intersection Capacity Utilization	41.0%	ICU Level of Service
Analysis Period (min)		15
		A

HCM Unsignalized Intersection Capacity Analysis
 3: Zervas School Exit/Amy Circle & Beacon St.

Zervas School
 2024 Build PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘			↕	
Volume (veh/h)	2	458	0	0	476	2	42	0	41	6	0	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.86	0.86	0.86	0.60	0.60	0.60	0.75	0.75	0.75
Hourly flow rate (vph)	2	515	0	0	553	2	70	0	68	8	0	8
Pedestrians		20			20							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		2			2							
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		414										
pX, platoon unblocked				0.84			0.84	0.84	0.84	0.84	0.84	
vC, conflicting volume	556			515			1102	1075	535	1162	1074	575
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	556			326			1026	994	350	1097	992	575
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			59	100	88	94	100	98
cM capacity (veh/h)	1025			1045			172	207	567	139	207	513

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	517	556	70	68	16
Volume Left	2	0	70	0	8
Volume Right	0	2	0	68	8
cSH	1025	1045	172	567	219
Volume to Capacity	0.00	0.00	0.41	0.12	0.07
Queue Length 95th (ft)	0	0	45	10	6
Control Delay (s)	0.1	0.0	39.5	12.2	22.7
Lane LOS	A		E	B	C
Approach Delay (s)	0.1	0.0	26.0		22.7
Approach LOS			D		C

Intersection Summary				
Average Delay			3.3	
Intersection Capacity Utilization		41.1%		ICU Level of Service
Analysis Period (min)		15		A

Section A-5

Traffic Signal Warrant

Traffic Control Signal Warrant Analyses

(Based on MUTCD-2009 Edition)

Print Date: 10/23/14
Print Time: 4:45 PM

Intersection: **Beacon Street at Zervas School Site Exit at Amy Circle**

Population <10,000? **No**

Speed: **30 mph**

Count Date: **3/6/2014**

Analysis Year: **2024**

Adjustment Factor: **1**

Analysis Date: **10/21/14**

Analyst: **JTB**

Is Major? #Lanes (1w)

EB	Y	1
WB	Y	1
NB	N	1
SB	N	1

Major Lanes: 1
Minor Lanes: 1

Time	EBLT	EBTH	EBRT	WBLT	WBTH	WBRT	NBLT	NBTH	NBRT	SBLT	SBTH	SBRT
7:00	0	546	0	0	359	0	5	0	4	17	0	17
8:00	0	484	0	0	475	0	4	0	3	13	0	13
9:00	0	394	0	0	323	0	2	0	2	11	0	11
10:00	0	323	0	0	283	0	2	0	2	6	0	6
11:00	0	350	0	0	317	0	2	0	2	6	0	6
12:00	0	366	0	0	353	0	3	0	3	6	0	6
13:00	0	341	0	0	330	0	4	0	4	6	0	6
14:00	0	338	0	0	379	0	5	0	5	6	0	6
15:00	0	398	0	0	515	0	42	0	41	7	0	7
16:00	0	419	0	0	557	0	10	0	10	8	0	8
17:00	0	522	0	0	536	0	10	0	10	9	0	9

Time	Σ EB	Σ WB	Σ NB	Σ SB	Σ Major	Σ Minor	Σ Max Minor	W1 A	W1 B	W1 combo	W2	W3
7:00	546	359	9	33	905	42	33	N	N	N	N	N
8:00	484	475	7	27	959	34	27	N	N	N	N	N
9:00	394	323	4	22	717	26	22	N	N	N	N	N
10:00	323	283	4	11	605	15	11	N	N	N	N	N
11:00	350	317	4	11	667	15	11	N	N	N	N	N
12:00	366	353	6	11	719	17	11	N	N	N	N	N
13:00	341	330	8	11	672	19	11	N	N	N	N	N
14:00	338	379	10	11	717	21	11	N	N	N	N	N
15:00	398	515	83	13	912	96	83	N	Y	N	N	N
16:00	419	557	20	15	975	35	20	N	N	N	N	N
17:00	522	536	20	18	1058	38	20	N	N	N	N	N
					0 of 8	1 of 8	0 of 8	0 of 4	0 of 1			

Warrant Analyses

- Warrant 1: Condition A Minimum Vehicular Volume Warrant is Not Met
- Warrant 1: Condition B Interruption of Continuous Traffic Warrant is Not Met
- Warrant 1: Combination of Warrants 1A and 1B is Not Met
- Warrant 2: Four-Hour Warrant is Not Met
- Warrant 3: One-Hour Warrant is Not Met

