

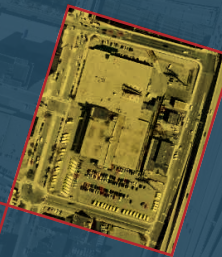


SUBMITTED TO

Boston Redevelopment Authority &  
Executive Office of Energy and Environmental Affairs  
Massachusetts Environmental Policy Act Office

SUBMITTED BY

National Development



PREPARED BY



*Vanasse Hangen Brustlin, Inc.*

IN ASSOCIATION WITH

Elkus/Manfredi Architects  
GZA GeoEnvironmental, Inc.  
AHA Engineers  
McNamara/Salvia, Inc.

January 2012

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# Appendix D

## Transportation Supporting Documentation

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### Traffic Volume Data

- Automatic Traffic Recorder Counts
- Turning Movement Counts

### Background Project Networks

### Trip Generation

- Site Trip Networks
- Trip Generation Calculations
- ITE Trip Generation by Land-use

### Capacity Analysis

- 2011 Existing Conditions
- 2016 No-Build Conditions
- 2016 Build Conditions
- 2016 Build Conditions - BRA Two-Way Short Range Improvements

# Traffic Volume Data

# Automatic Traffic Recorder Counts



PRECISION  
D A T A  
INDUSTRIES, LLC

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

Harrison Avenue  
south of Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

112442 A Volume  
Site Code: 10995.00

Start Time	NB			SB			Combined		03-Mar-11 Thu			
	A.M.		P.M.	A.M.	P.M.	A.M.	P.M.					
12:00	7		19	17	77	24	96					
12:15	3		20	16	66	19	86					
12:30	2		16	8	69	10	85					
12:45	4	16	17	72	13	54	66	278	17	70	83	350
01:00	6		23		15	65	21	88				
01:15	1		19		11	70	12	89				
01:30	0		23		9	72	9	95				
01:45	4	11	20	85	9	44	56	263	13	55	76	348
02:00	6		33		12	68	18	101				
02:15	2		23		6	84	8	107				
02:30	2		29		8	85	10	114				
02:45	1	11	21	106	4	30	76	313	5	41	97	419
03:00	6		48		6	78	12	126				
03:15	2		41		8	88	10	129				
03:30	4		42		8	98	12	140				
03:45	0	12	46	177	8	30	103	367	8	42	149	544
04:00	7		50		6	79	13	129				
04:15	6		42		10	96	16	138				
04:30	6		44		6	106	12	150				
04:45	8	27	30	166	8	30	108	389	16	57	138	555
05:00	5		45		13	120	18	165				
05:15	2		39		12	112	14	151				
05:30	3		31		14	93	17	124				
05:45	9	19	24	139	18	57	110	435	27	76	134	574
06:00	7		19		22	81	29	100				
06:15	11		27		22	64	33	91				
06:30	11		19		30	43	41	62				
06:45	14	43	19	84	34	108	50	238	48	151	69	322
07:00	15		12		38	36	53	48				
07:15	16		16		35	42	51	58				
07:30	17		18		53	50	70	68				
07:45	18	66	13	59	66	192	44	172	84	258	57	231
08:00	16		12		64	30	80	42				
08:15	22		15		82	28	104	43				
08:30	17		12		65	28	82	40				
08:45	22	77	10	49	73	284	34	120	95	361	44	169
09:00	28		5		78	31	106	36				
09:15	22		5		90	30	112	35				
09:30	16		9		65	24	81	33				
09:45	10	76	11	30	78	311	28	113	88	387	39	143
10:00	14		4		72	39	86	43				
10:15	15		7		54	34	69	41				
10:30	12		12		80	18	92	30				
10:45	24	65	10	33	70	276	31	122	94	341	41	155
11:00	24		14		84	32	108	46				
11:15	16		9		70	20	86	29				
11:30	18		4		88	26	106	30				
11:45	28	86	3	30	84	326	17	95	112	412	20	125
Total	509		1030		1742		2905		2251		3935	
Percent	22.6%		26.2%		77.4%		73.8%					
Day Total		1539			4647				6186			
Peak Vol.	08:15		03:45		11:00		04:30		11:00		04:30	
P.H.F.	89		182		326		446		412		604	
	0.795		0.910		0.926		0.929		0.920		0.915	



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Harrison Avenue  
south of Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

112442 A Volume  
Site Code: 10995.00

Start Time	NB			SB			Combined		05-Mar-11 Sat			
	A.M.		P.M.	A.M.	P.M.	A.M.	P.M.					
12:00	4		16	28	78	32	94					
12:15	12		18	30	78	42	96					
12:30	7		19	19	75	26	94					
12:45	8	31	28	81	35	112	103	334	43	143	131	415
01:00	8		15		27		75		35		90	
01:15	12		18		29		84		41		102	
01:30	8		22		32		72		40		94	
01:45	8	36	22	77	26	114	94	325	34	150	116	402
02:00	13		37		32		83		45		120	
02:15	8		36		41		98		49		134	
02:30	4		26		41		92		45		118	
02:45	6	31	28	127	33	147	114	387	39	178	142	514
03:00	4		27		15		96		19		123	
03:15	6		32		12		93		18		125	
03:30	3		40		7		110		10		150	
03:45	6	19	16	115	15	49	81	380	21	68	97	495
04:00	10		28		8		80		18		108	
04:15	0		27		12		94		12		121	
04:30	6		25		12		67		18		92	
04:45	3	19	22	102	4	36	72	313	7	55	94	415
05:00	2		16		8		82		10		98	
05:15	8		28		4		84		12		112	
05:30	0		26		8		80		8		106	
05:45	2	12	21	91	8	28	71	317	10	40	92	408
06:00	8		22		9		56		17		78	
06:15	5		22		6		62		11		84	
06:30	8		20		16		50		24		70	
06:45	8	29	18	82	16	47	48	216	24	76	66	298
07:00	8		28		14		39		22		67	
07:15	6		12		24		41		30		53	
07:30	6		19		28		42		34		61	
07:45	8	28	11	70	24	90	28	150	32	118	39	220
08:00	2		14		40		44		42		58	
08:15	8		8		39		30		47		38	
08:30	10		5		50		28		60		33	
08:45	6	26	10	37	72	201	31	133	78	227	41	170
09:00	6		18		88		33		94		51	
09:15	16		8		80		26		96		34	
09:30	17		8		84		26		101		34	
09:45	12	51	20	54	78	330	33	118	90	381	53	172
10:00	12		12		82		24		94		36	
10:15	20		16		74		41		94		57	
10:30	16		8		94		20		110		28	
10:45	16	64	19	55	90	340	32	117	106	404	51	172
11:00	14		23		90		36		104		59	
11:15	18		25		91		43		109		68	
11:30	16		16		84		36		100		52	
11:45	16	64	14	78	72	337	44	159	88	401	58	237
Total	410		969		1831		2949		2241		3918	
Percent	18.3%		24.7%		81.7%		75.3%					
Day Total		1379			4780				6159			
Peak Vol.	10:15		02:00		10:30		02:45		10:30		02:45	
P.H.F.	0.825		0.858		0.971		0.906		0.975		0.900	



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Albany Street  
south of I-93 SB Onramp  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

112442 B Volume  
Site Code: 10995.00

Start Time	SB				Thu 03-Mar- 11
	A.M.		P.M.		
12:00	88		286		
12:15	83		334		
12:30	70		282		
12:45	66	307	273	1175	
01:00	83		302		
01:15	88		248		
01:30	56		300		
01:45	44	271	290	1140	
02:00	62		318		
02:15	38		314		
02:30	58		323		
02:45	34	192	340	1295	
03:00	40		376		
03:15	42		430		
03:30	38		483		
03:45	48	168	474	1763	
04:00	58		426		
04:15	32		430		
04:30	68		418		
04:45	75	233	438	1712	
05:00	74		466		
05:15	107		526		
05:30	130		484		
05:45	170	481	480	1956	
06:00	188		385		
06:15	224		378		
06:30	261		297		
06:45	301	974	318	1378	
07:00	294		279		
07:15	311		278		
07:30	332		265		
07:45	372	1309	214	1036	
08:00	386		242		
08:15	387		203		
08:30	378		180		
08:45	412	1563	208	833	
09:00	408		184		
09:15	386		178		
09:30	345		184		
09:45	342	1481	209	755	
10:00	348		170		
10:15	352		162		
10:30	313		173		
10:45	286	1299	152	657	
11:00	293		136		
11:15	279		158		
11:30	258		106		
11:45	272	1102	121	521	
Total	9380		14221		
Percent			100.0%	0.0%	0.0%
Day Total		23601			
Peak	08:15		05:00		
Vol.	1585		1956		
P.H.F.	0.962		0.930		





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Albany Street  
south of I-93 SB Onramp  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

112442 BB Volume  
Site Code: 10995.00

Start Time	SB			Sat 12-Mar- 11
	A.M.	P.M.		
12:00	145	264		
12:15	156	278		
12:30	127	270		
12:45	131	559	308	1120
01:00	131	274		
01:15	124	300		
01:30	102	274		
01:45	125	482	280	1128
02:00	138	256		
02:15	132	280		
02:30	131	258		
02:45	106	507	272	1066
03:00	74	278		
03:15	55	300		
03:30	52	282		
03:45	54	235	305	1165
04:00	42	276		
04:15	30	255		
04:30	40	274		
04:45	48	160	256	1061
05:00	46	261		
05:15	44	292		
05:30	63	268		
05:45	78	231	279	1100
06:00	62	224		
06:15	73	256		
06:30	98	261		
06:45	107	340	259	1000
07:00	104	252		
07:15	92	226		
07:30	104	254		
07:45	155	455	202	934
08:00	116	227		
08:15	157	176		
08:30	170	192		
08:45	195	638	172	767
09:00	187	172		
09:15	190	184		
09:30	258	192		
09:45	246	881	185	733
10:00	224	194		
10:15	262	190		
10:30	248	185		
10:45	284	1018	200	769
11:00	244	208		
11:15	228	186		
11:30	232	170		
11:45	255	959	150	714
Total	6465	11557		
Percent		100.0%	0.0%	0.0%
Day Total		18022		
Peak	10:15	03:00		
Vol.	1038	1165		
P.H.F.	0.914	0.955		

# Turning Movement Counts



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N/S/SW: Albany Street/Boston Herald Dr.  
 E/W: I-93 SB Onramp/Herald Street  
 City, State: Boston, MA  
 Client: VHB/ E. Guidoboni

File Name : 112441 AA  
 Site Code : 10995.00  
 Start Date : 2/15/2011  
 Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Albany Street From North				I-93 SB Onramp From East				Albany Street From South				Boston Herald Driveway From Southwest				Herald Street From West				Int. Total
	Right	Bear Right	Thru	Left	Right	Thru	Bear Left	Left	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	Hard Right	Right	Thru	Left	
07:00 AM	0	3	212	36	0	0	0	0	0	0	0	0	2	0	0	0	0	79	61	0	393
07:15 AM	0	3	174	32	0	0	0	0	0	0	0	0	2	0	0	0	0	76	90	0	377
07:30 AM	0	0	213	34	0	0	0	0	0	0	0	0	2	0	0	0	0	86	98	0	433
07:45 AM	0	1	195	33	0	0	0	0	0	0	0	0	0	0	0	0	1	150	110	0	490
Total	0	7	794	135	0	0	0	0	0	0	0	0	6	0	0	0	1	391	359	0	1693
08:00 AM	0	3	262	42	0	0	0	0	0	0	0	0	0	2	0	0	0	128	116	0	553
08:15 AM	0	5	281	30	0	0	0	0	0	0	0	0	3	1	0	0	0	126	100	0	546
08:30 AM	0	5	246	40	0	0	0	0	0	0	0	0	5	0	0	0	1	111	93	0	501
08:45 AM	0	4	291	31	0	0	0	0	0	0	0	0	2	0	0	0	0	123	83	0	534
Total	0	17	1080	143	0	0	0	0	0	0	0	0	10	3	0	0	1	488	392	0	2134
Grand Total	0	24	1874	278	0	0	0	0	0	0	0	0	16	3	0	0	2	879	751	0	3827
Apprch %	0	1.1	86.1	12.8	0	0	0	0	0	0	0	0	84.2	15.8	0	0	0.1	53.9	46	0	
Total %	0	0.6	49	7.3	0	0	0	0	0	0	0	0	0.4	0.1	0	0	0.1	23	19.6	0	
Cars	0	11	1755	244	0	0	0	0	0	0	0	0	4	3	0	0	2	799	719	0	3537
% Cars	0	45.8	93.6	87.8	0	0	0	0	0	0	0	0	25	100	0	0	100	90.9	95.7	0	92.4
Heavy Vehicles	0	13	119	34	0	0	0	0	0	0	0	0	12	0	0	0	0	80	32	0	290
% Heavy Vehicles	0	54.2	6.4	12.2	0	0	0	0	0	0	0	0	75	0	0	0	0	9.1	4.3	0	7.6

Start Time	Albany Street From North					I-93 SB Onramp From East					Albany Street From South					Boston Herald Driveway From Southwest					Herald Street From West					Int. Total
	Right	Bear Right	Thru	Left	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Hard Right	Right	Thru	Left	App. Total	
08:00 AM	0	3	262	<b>42</b>	307	0	0	0	0	0	0	0	0	0	0	0	<b>2</b>	0	0	2	0	<b>128</b>	<b>116</b>	0	<b>244</b>	<b>553</b>
08:15 AM	0	<b>5</b>	281	30	316	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	0	126	100	0	226	546
08:30 AM	0	5	246	40	291	0	0	0	0	0	0	0	0	0	0	<b>5</b>	0	0	0	<b>5</b>	<b>1</b>	111	93	0	205	501
08:45 AM	0	4	<b>291</b>	31	<b>326</b>	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	123	83	0	206	534
Total Volume	0	17	1080	143	1240	0	0	0	0	0	0	0	0	0	0	10	3	0	0	13	1	488	392	0	881	2134
% App. Total	0	1.4	87.1	11.5		0	0	0	0		0	0	0	0		76.9	23.1	0	0		0.1	55.4	44.5	0		
PHF	.000	.850	.928	.851	.951	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.375	.000	.000	.650	.250	.953	.845	.000	.903	.965
Cars	0	5	1004	126	1135	0	0	0	0	0	0	0	0	0	0	1	3	0	0	4	1	445	378	0	824	1963
% Cars	0	29.4	93.0	88.1	91.5	0	0	0	0	0	0	0	0	0	0	10.0	100	0	0	30.8	100	91.2	96.4	0	93.5	92.0
Heavy Vehicles	0	12	76	17	105	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9	0	43	14	0	57	171
% Heavy Vehicles	0	70.6	7.0	11.9	8.5	0	0	0	0	0	0	0	0	0	0	90.0	0	0	0	69.2	0	8.8	3.6	0	6.5	8.0

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



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File Name : 112441 AA  
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Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Albany Street From North				I-93 SB Onramp From East				Albany Street From South				Boston Herald Driveway From Southwest				Herald Street From West				Int. Total
	Right	Bear Right	Thru	Left	Right	Thru	Bear Left	Left	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	Hard Right	Right	Thru	Left	
07:00 AM	0	0	14	3	0	0	0	0	0	0	0	0	1	0	0	0	0	9	2	0	29
07:15 AM	0	1	9	6	0	0	0	0	0	0	0	0	2	0	0	0	0	7	8	0	33
07:30 AM	0	0	12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2	0	23
07:45 AM	0	0	8	6	0	0	0	0	0	0	0	0	0	0	0	0	0	14	6	0	34
<b>Total</b>	<b>0</b>	<b>1</b>	<b>43</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>37</b>	<b>18</b>	<b>0</b>	<b>119</b>
08:00 AM	0	2	14	7	0	0	0	0	0	0	0	0	0	0	0	0	0	9	2	0	34
08:15 AM	0	5	18	7	0	0	0	0	0	0	0	0	2	0	0	0	0	11	5	0	48
08:30 AM	0	2	16	1	0	0	0	0	0	0	0	0	5	0	0	0	0	11	4	0	39
08:45 AM	0	3	28	2	0	0	0	0	0	0	0	0	2	0	0	0	0	12	3	0	50
<b>Total</b>	<b>0</b>	<b>12</b>	<b>76</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>14</b>	<b>0</b>	<b>171</b>
<b>Grand Total</b>	<b>0</b>	<b>13</b>	<b>119</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>32</b>	<b>0</b>	<b>290</b>
Apprch %	0	7.8	71.7	20.5	0	0	0	0	0	0	0	0	100	0	0	0	0	71.4	28.6	0	
Total %	0	4.5	41	11.7	0	0	0	0	0	0	0	0	4.1	0	0	0	0	27.6	11	0	

Start Time	Albany Street From North					I-93 SB Onramp From East					Albany Street From South					Boston Herald Driveway From Southwest					Herald Street From West					Int. Total
	Right	Bear Right	Thru	Left	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Hard Right	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 08:00 AM																										
08:00 AM	0	2	14	<b>7</b>	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	2	0	11	34
08:15 AM	0	<b>5</b>	18	7	30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	11	<b>5</b>	0	<b>16</b>	48
08:30 AM	0	2	16	1	19	0	0	0	0	0	0	0	0	0	0	<b>5</b>	0	0	0	<b>5</b>	0	11	4	0	15	39
08:45 AM	0	3	<b>28</b>	2	<b>33</b>	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	<b>12</b>	3	0	15	<b>50</b>
Total Volume	0	12	76	17	105	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9	0	43	14	0	57	171
% App. Total	0	11.4	72.4	16.2		0	0	0	0		0	0	0	0		100	0	0	0		0	75.4	24.6	0		
<b>PHF</b>	.000	.600	.679	.607	.795	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.450	.000	.000	.000	.450	.000	.896	.700	.000	.891	.855



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E/W: I-93 SB Onramp/Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 AA  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Albany Street From North					I-93 SB Onramp From East					Albany Street From South					Boston Herald Driveway From Southwest					Herald Street From West					Int. Total					
	Right	Bear Right	Thru	Left	Peds	Right	Thru	Bear Left	Left	Peds	Right	Thru	Left	Hard Left	Peds	Hard Right	Bear Right	Bear Left	Hard Left	Peds	Hard Right	Right	Thru	Left	Peds						
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	2	5
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
<b>Total</b>	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Grand Total	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	7
Apprch %	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	25	0	0	75	0	25	0	0	75	
Total %	0	0	0	0	14.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28.6	0	14.3	0	0	42.9	0	14.3	0	0	42.9	

Start Time	Albany Street From North						I-93 SB Onramp From East						Albany Street From South						Boston Herald Driveway From Southwest						Herald Street From West						Int. Total					
	Right	Bear Right	Thru	Left	Peds	App. Total	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Left	Peds	App. Total						
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	2	2	2	2	2	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	1	0	0	2	3	3	3	3	3	3	
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	33.3	0	0	66.7	0	33.3	0	0	66.7				
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.250	.000	.000	.500	.375	.625					

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

Peak Hour for Entire Intersection Begins at 07:00 AM



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E/W: Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 CC  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Albany Street From North			Traveler Street From East			Albany Street From South			Traveler Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
07:00 AM	22	139	134	0	0	0	0	0	0	6	21	0	322
07:15 AM	16	110	129	0	0	0	0	0	0	3	22	0	280
07:30 AM	21	129	148	0	0	0	0	0	0	8	27	0	333
07:45 AM	28	147	175	0	0	0	0	0	0	9	21	0	380
Total	87	525	586	0	0	0	0	0	0	26	91	0	1315
08:00 AM	37	161	180	0	0	0	0	0	0	9	19	0	406
08:15 AM	40	177	169	0	0	0	0	0	0	10	30	0	426
08:30 AM	55	154	160	0	0	0	0	0	0	5	24	0	398
08:45 AM	44	190	174	0	0	0	0	0	0	14	36	0	458
Total	176	682	683	0	0	0	0	0	0	38	109	0	1688
Grand Total	263	1207	1269	0	0	0	0	0	0	64	200	0	3003
Apprch %	9.6	44.1	46.3	0	0	0	0	0	0	24.2	75.8	0	
Total %	8.8	40.2	42.3	0	0	0	0	0	0	2.1	6.7	0	
Cars	237	1127	1186	0	0	0	0	0	0	57	181	0	2788
% Cars	90.1	93.4	93.5	0	0	0	0	0	0	89.1	90.5	0	92.8
Heavy Vehicles	26	80	83	0	0	0	0	0	0	7	19	0	215
% Heavy Vehicles	9.9	6.6	6.5	0	0	0	0	0	0	10.9	9.5	0	7.2

Start Time	Albany Street From North				Traveler Street From East				Albany Street From South				Traveler Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	37	161	<b>180</b>	378	0	0	0	0	0	0	0	0	9	19	0	28	406
08:15 AM	40	177	169	386	0	0	0	0	0	0	0	0	10	30	0	40	426
08:30 AM	<b>55</b>	154	160	369	0	0	0	0	0	0	0	0	5	24	0	29	398
08:45 AM	44	<b>190</b>	174	<b>408</b>	0	0	0	0	0	0	0	0	<b>14</b>	<b>36</b>	0	<b>50</b>	<b>458</b>
Total Volume	176	682	683	1541	0	0	0	0	0	0	0	0	38	109	0	147	1688
% App. Total	11.4	44.3	44.3		0	0	0		0	0	0		25.9	74.1	0		
PHF	.800	.897	.949	.944	.000	.000	.000	.000	.000	.000	.000	.000	.679	.757	.000	.735	.921
Cars	158	631	639	1428	0	0	0	0	0	0	0	0	33	99	0	132	1560
% Cars	89.8	92.5	93.6	92.7	0	0	0	0	0	0	0	0	86.8	90.8	0	89.8	92.4
Heavy Vehicles	18	51	44	113	0	0	0	0	0	0	0	0	5	10	0	15	128
% Heavy Vehicles	10.2	7.5	6.4	7.3	0	0	0	0	0	0	0	0	13.2	9.2	0	10.2	7.6



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E/W: Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 CC  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Albany Street From North			Traveler Street From East			Albany Street From South			Traveler Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
07:00 AM	3	6	7	0	0	0	0	0	0	0	3	0	19
07:15 AM	3	10	6	0	0	0	0	0	0	0	1	0	20
07:30 AM	1	8	9	0	0	0	0	0	0	1	4	0	23
07:45 AM	1	5	17	0	0	0	0	0	0	1	1	0	25
Total	8	29	39	0	0	0	0	0	0	2	9	0	87
08:00 AM	3	9	8	0	0	0	0	0	0	2	1	0	23
08:15 AM	2	14	10	0	0	0	0	0	0	0	3	0	29
08:30 AM	7	12	11	0	0	0	0	0	0	2	2	0	34
08:45 AM	6	16	15	0	0	0	0	0	0	1	4	0	42
Total	18	51	44	0	0	0	0	0	0	5	10	0	128
Grand Total	26	80	83	0	0	0	0	0	0	7	19	0	215
Apprch %	13.8	42.3	43.9	0	0	0	0	0	0	26.9	73.1	0	
Total %	12.1	37.2	38.6	0	0	0	0	0	0	3.3	8.8	0	

Start Time	Albany Street From North				Traveler Street From East				Albany Street From South				Traveler Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	3	9	8	20	0	0	0	0	0	0	0	0	2	1	0	3	23
08:15 AM	2	14	10	26	0	0	0	0	0	0	0	0	0	3	0	3	29
08:30 AM	7	12	11	30	0	0	0	0	0	0	0	0	2	2	0	4	34
08:45 AM	6	<b>16</b>	<b>15</b>	<b>37</b>	0	0	0	0	0	0	0	0	1	<b>4</b>	0	<b>5</b>	<b>42</b>
Total Volume	18	51	44	113	0	0	0	0	0	0	0	0	5	10	0	15	128
% App. Total	15.9	45.1	38.9		0	0	0		0	0	0		33.3	66.7	0		
PHF	.643	.797	.733	.764	.000	.000	.000	.000	.000	.000	.000	.000	.625	.625	.000	.750	.762



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Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Albany Street From North				Traveler Street From East				Albany Street From South				Traveler Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	1	0	0	0	1	0	0	0	1	0	1	0	1	5
07:15 AM	0	0	0	1	0	0	0	1	0	0	0	2	0	1	0	1	6
07:30 AM	0	0	1	0	0	0	0	2	0	0	0	2	0	0	0	1	6
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	2	8
Total	0	0	1	2	0	0	0	4	0	0	0	11	0	2	0	5	25
08:00 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	2	0	2	12
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	4	0	3	0	1	8
08:30 AM	0	0	0	0	1	0	0	1	0	0	0	2	0	0	0	2	6
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
Total	0	0	0	0	1	0	0	5	0	0	0	13	0	5	0	5	29
Grand Total	0	0	1	2	1	0	0	9	0	0	0	24	0	7	0	10	54
Apprch %	0	0	33.3	66.7	10	0	0	90	0	0	0	100	0	41.2	0	58.8	
Total %	0	0	1.9	3.7	1.9	0	0	16.7	0	0	0	44.4	0	13	0	18.5	

Start Time	Albany Street From North					Traveler Street From East					Albany Street From South					Traveler Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	1	0	1	0	0	0	2	2	0	0	0	2	2	0	0	0	1	1	6
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	0	0	0	2	2	8
08:00 AM	0	0	0	0	0	0	0	0	4	4	0	0	0	4	4	0	2	0	2	4	12
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	3	0	1	4	8
Total Volume	0	0	1	0	1	0	0	0	6	6	0	0	0	16	16	0	5	0	6	11	34
% App. Total	0	0	100	0		0	0	0	100		0	0	0	100		0	45.5	0	54.5		
PHF	.000	.000	.250	.000	.250	.000	.000	.000	.375	.375	.000	.000	.000	.667	.667	.000	.417	.000	.750	.688	.708









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Client: VHB/ E. Guidoboni

File Name : 112441 DD  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Albany Street From North				East Berkley Street From East				Albany Street From South				East Berkley Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
07:15 AM	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	1	4
07:30 AM	0	0	0	3	0	1	1	0	0	0	1	9	0	0	0	2	17
07:45 AM	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	1	7
Total	0	0	0	6	0	1	2	0	0	0	1	17	0	0	0	4	31
08:00 AM	0	0	0	6	0	1	0	0	0	0	0	3	0	0	0	1	11
08:15 AM	0	0	0	2	0	1	0	2	1	0	0	7	0	0	0	2	15
08:30 AM	1	0	0	3	0	1	0	0	0	0	0	6	0	0	0	2	13
08:45 AM	0	0	0	3	0	1	0	0	0	0	0	3	0	0	0	2	9
Total	1	0	0	14	0	4	0	2	1	0	0	19	0	0	0	7	48
Grand Total	1	0	0	20	0	5	2	2	1	0	1	36	0	0	0	11	79
Apprch %	4.8	0	0	95.2	0	55.6	22.2	22.2	2.6	0	2.6	94.7	0	0	0	100	
Total %	1.3	0	0	25.3	0	6.3	2.5	2.5	1.3	0	1.3	45.6	0	0	0	13.9	

Start Time	Albany Street From North					East Berkley Street From East					Albany Street From South					East Berkley Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	3	3	0	1	1	0	2	0	0	1	9	10	0	0	0	2	2	17
07:45 AM	0	0	0	3	3	0	0	0	0	0	0	0	0	3	3	0	0	0	1	1	7
08:00 AM	0	0	0	6	6	0	1	0	0	1	0	0	0	3	3	0	0	0	1	1	11
08:15 AM	0	0	0	2	2	0	1	0	2	3	1	0	0	7	8	0	0	0	2	2	15
Total Volume	0	0	0	14	14	0	3	1	2	6	1	0	1	22	24	0	0	0	6	6	50
% App. Total	0	0	0	100		0	50	16.7	33.3		4.2	0	4.2	91.7		0	0	0	100		
PHF	.000	.000	.000	.583	.583	.000	.750	.250	.250	.500	.250	.000	.250	.611	.600	.000	.000	.000	.750	.750	.735



PRECISION  
D A T A  
INDUSTRIES, LLC

P.O. Box 301 Berlin, MA 01503  
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N/S: Harrison Avenue  
E/W: Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 EE  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Harrison Avenue From North			Herald Street From East			Harrison Avenue From South			Herald Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
07:00 AM	0	27	16	0	0	0	16	0	0	19	109	0	187
07:15 AM	0	17	16	0	0	0	9	0	0	12	133	0	187
07:30 AM	0	27	12	0	0	0	9	0	0	21	172	0	241
07:45 AM	0	17	22	0	0	0	14	0	0	34	190	0	277
Total	0	88	66	0	0	0	48	0	0	86	604	0	892
08:00 AM	0	26	25	0	0	0	9	0	0	26	198	0	284
08:15 AM	0	30	23	0	0	0	16	0	0	28	193	0	290
08:30 AM	0	31	26	0	0	0	13	0	0	43	178	0	291
08:45 AM	0	36	21	0	0	0	20	0	0	34	157	0	268
Total	0	123	95	0	0	0	58	0	0	131	726	0	1133
Grand Total	0	211	161	0	0	0	106	0	0	217	1330	0	2025
Apprch %	0	56.7	43.3	0	0	0	100	0	0	14	86	0	
Total %	0	10.4	8	0	0	0	5.2	0	0	10.7	65.7	0	
Cars	0	196	152	0	0	0	98	0	0	198	1241	0	1885
% Cars	0	92.9	94.4	0	0	0	92.5	0	0	91.2	93.3	0	93.1
Heavy Vehicles	0	15	9	0	0	0	8	0	0	19	89	0	140
% Heavy Vehicles	0	7.1	5.6	0	0	0	7.5	0	0	8.8	6.7	0	6.9

Start Time	Harrison Avenue From North				Herald Street From East				Harrison Avenue From South				Herald Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	17	22	39	0	0	0	0	14	0	0	14	34	190	0	<b>224</b>	277
08:00 AM	0	26	25	51	0	0	0	0	9	0	0	9	26	<b>198</b>	0	<b>224</b>	284
08:15 AM	0	30	23	53	0	0	0	0	<b>16</b>	0	0	<b>16</b>	28	193	0	221	290
08:30 AM	0	<b>31</b>	<b>26</b>	<b>57</b>	0	0	0	0	13	0	0	13	<b>43</b>	178	0	221	<b>291</b>
Total Volume	0	104	96	200	0	0	0	0	52	0	0	52	131	759	0	890	1142
% App. Total	0	52	48		0	0	0		100	0	0		14.7	85.3	0		
PHF	.000	.839	.923	.877	.000	.000	.000	.000	.813	.000	.000	.813	.762	.958	.000	.993	.981
Cars	0	96	90	186	0	0	0	0	49	0	0	49	121	711	0	832	1067
% Cars	0	92.3	93.8	93.0	0	0	0	0	94.2	0	0	94.2	92.4	93.7	0	93.5	93.4
Heavy Vehicles	0	8	6	14	0	0	0	0	3	0	0	3	10	48	0	58	75
% Heavy Vehicles	0	7.7	6.3	7.0	0	0	0	0	5.8	0	0	5.8	7.6	6.3	0	6.5	6.6



PRECISION  
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INDUSTRIES, LLC

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N/S: Harrison Avenue  
E/W: Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 EE  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Harrison Avenue From North			Herald Street From East			Harrison Avenue From South			Herald Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
07:00 AM	0	2	1	0	0	0	1	0	0	4	9	0	17
07:15 AM	0	1	1	0	0	0	0	0	0	1	12	0	15
07:30 AM	0	1	1	0	0	0	0	0	0	1	7	0	10
07:45 AM	0	3	2	0	0	0	1	0	0	1	13	0	20
Total	0	7	5	0	0	0	2	0	0	7	41	0	62
08:00 AM	0	3	1	0	0	0	1	0	0	5	9	0	19
08:15 AM	0	1	2	0	0	0	1	0	0	3	13	0	20
08:30 AM	0	1	1	0	0	0	0	0	0	1	13	0	16
08:45 AM	0	3	0	0	0	0	4	0	0	3	13	0	23
Total	0	8	4	0	0	0	6	0	0	12	48	0	78
Grand Total	0	15	9	0	0	0	8	0	0	19	89	0	140
Apprch %	0	62.5	37.5	0	0	0	100	0	0	17.6	82.4	0	
Total %	0	10.7	6.4	0	0	0	5.7	0	0	13.6	63.6	0	

Start Time	Harrison Avenue From North				Herald Street From East				Harrison Avenue From South				Herald Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	3	1	4	0	0	0	0	1	0	0	1	5	9	0	14	19
08:15 AM	0	1	2	3	0	0	0	0	1	0	0	1	3	13	0	16	20
08:30 AM	0	1	1	2	0	0	0	0	0	0	0	0	1	13	0	14	16
08:45 AM	0	3	0	3	0	0	0	0	4	0	0	4	3	13	0	16	23
Total Volume	0	8	4	12	0	0	0	0	6	0	0	6	12	48	0	60	78
% App. Total	0	66.7	33.3		0	0	0		100	0	0		20	80	0		
PHF	.000	.667	.500	.750	.000	.000	.000	.000	.375	.000	.000	.375	.600	.923	.000	.938	.848



PRECISION  
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N/S: Harrison Avenue  
E/W: Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 EE  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Harrison Avenue From North				Herald Street From East				Harrison Avenue From South				Herald Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	0	0	8	0	0	0	0	1	0	0	6	15
07:15 AM	0	0	0	0	0	0	0	6	0	0	0	1	0	0	0	7	14
07:30 AM	0	0	0	0	0	0	0	8	0	2	0	0	0	1	0	5	16
07:45 AM	0	0	0	0	0	0	0	9	0	0	0	3	0	0	0	13	25
Total	0	0	0	0	0	0	0	31	0	2	0	4	1	1	0	31	70
08:00 AM	0	0	0	0	0	0	0	6	0	0	0	0	1	0	0	10	17
08:15 AM	0	0	0	0	0	0	0	16	0	0	0	0	2	0	0	10	28
08:30 AM	0	1	0	0	0	0	0	10	0	1	1	1	0	0	0	18	32
08:45 AM	0	0	0	0	0	0	0	8	0	2	0	1	0	0	0	10	21
Total	0	1	0	0	0	0	0	40	0	3	1	2	3	0	0	48	98
Grand Total	0	1	0	0	0	0	0	71	0	5	1	6	4	1	0	79	168
Apprch %	0	100	0	0	0	0	0	100	0	41.7	8.3	50	4.8	1.2	0	94	
Total %	0	0.6	0	0	0	0	0	42.3	0	3	0.6	3.6	2.4	0.6	0	47	

Start Time	Harrison Avenue From North					Herald Street From East					Harrison Avenue From South					Herald Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	0	0	9	9	0	0	0	3	3	0	0	0	13	13	25
08:00 AM	0	0	0	0	0	0	0	0	6	6	0	0	0	0	0	1	0	0	10	11	17
08:15 AM	0	0	0	0	0	0	0	0	16	16	0	0	0	0	0	2	0	0	10	12	28
08:30 AM	0	1	0	0	1	0	0	0	10	10	0	1	1	1	3	0	0	0	18	18	32
Total Volume	0	1	0	0	1	0	0	0	41	41	0	1	1	4	6	3	0	0	51	54	102
% App. Total	0	100	0	0		0	0	0	100		0	16.7	16.7	66.7		5.6	0	0	94.4		
PHF	.000	.250	.000	.000	.250	.000	.000	.000	.641	.641	.000	.250	.250	.333	.500	.375	.000	.000	.708	.750	.797



PRECISION  
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N/S: Harrison Avenue  
E/W: Herald Driveway/ Wm.Mullins Way  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 FF  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Harrison Avenue From North			Herald Driveway From East			Harrison Avenue From South				Wm.Mullins Way From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
07:00 AM	4	43	0	0	0	0	1	22	18	1	7	0	2	98
07:15 AM	2	31	0	0	0	0	0	10	20	4	1	0	1	69
07:30 AM	4	45	1	0	0	0	3	11	27	0	6	0	1	98
07:45 AM	1	47	0	0	0	2	2	15	35	0	7	1	3	113
Total	11	166	1	0	0	2	6	58	100	5	21	1	7	378
08:00 AM	8	42	0	0	0	0	0	14	41	0	4	0	2	111
08:15 AM	5	55	0	1	0	0	1	24	38	1	3	0	1	129
08:30 AM	4	66	0	1	0	0	1	19	38	0	7	0	4	140
08:45 AM	5	59	2	4	0	1	0	29	44	2	13	1	1	161
Total	22	222	2	6	0	1	2	86	161	3	27	1	8	541
Grand Total	33	388	3	6	0	3	8	144	261	8	48	2	15	919
Apprch %	7.8	91.5	0.7	66.7	0	33.3	1.9	34.2	62	1.9	73.8	3.1	23.1	
Total %	3.6	42.2	0.3	0.7	0	0.3	0.9	15.7	28.4	0.9	5.2	0.2	1.6	
Cars	31	344	3	5	0	3	8	133	250	8	42	1	14	842
% Cars	93.9	88.7	100	83.3	0	100	100	92.4	95.8	100	87.5	50	93.3	91.6
Heavy Vehicles	2	44	0	1	0	0	0	11	11	0	6	1	1	77
% Heavy Vehicles	6.1	11.3	0	16.7	0	0	0	7.6	4.2	0	12.5	50	6.7	8.4

Start Time	Harrison Avenue From North				Herald Driveway From East				Harrison Avenue From South					Wm.Mullins Way From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
08:00 AM	8	42	0	50	0	0	0	0	0	14	41	0	55	4	0	2	6	111
08:15 AM	5	55	0	60	1	0	0	1	1	24	38	1	64	3	0	1	4	129
08:30 AM	4	66	0	70	1	0	0	1	1	19	38	0	58	7	0	4	11	140
08:45 AM	5	59	2	66	4	0	1	5	0	29	44	2	75	13	1	1	15	161
Total Volume	22	222	2	246	6	0	1	7	2	86	161	3	252	27	1	8	36	541
% App. Total	8.9	90.2	0.8		85.7	0	14.3		0.8	34.1	63.9	1.2		75	2.8	22.2		
PHF	.688	.841	.250	.879	.375	.000	.250	.350	.500	.741	.915	.375	.840	.519	.250	.500	.600	.840
Cars	21	197	2	220	5	0	1	6	2	79	154	3	238	24	0	7	31	495
% Cars	95.5	88.7	100	89.4	83.3	0	100	85.7	100	91.9	95.7	100	94.4	88.9	0	87.5	86.1	91.5
Heavy Vehicles	1	25	0	26	1	0	0	1	0	7	7	0	14	3	1	1	5	46
% Heavy Vehicles	4.5	11.3	0	10.6	16.7	0	0	14.3	0	8.1	4.3	0	5.6	11.1	100	12.5	13.9	8.5

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

Peak Hour for Entire Intersection Begins at 08:00 AM



PRECISION  
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Client: VHB/ E. Guidoboni

File Name : 112441 FF  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Harrison Avenue From North			Herald Driveway From East			Harrison Avenue From South				Wm.Mullins Way From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
07:00 AM	1	7	0	0	0	0	0	2	2	0	1	0	0	13
07:15 AM	0	3	0	0	0	0	0	0	1	0	0	0	0	4
07:30 AM	0	4	0	0	0	0	0	1	0	0	1	0	0	6
07:45 AM	0	5	0	0	0	0	0	1	1	0	1	0	0	8
Total	1	19	0	0	0	0	0	4	4	0	3	0	0	31
08:00 AM	1	8	0	0	0	0	0	2	3	0	0	0	0	14
08:15 AM	0	5	0	1	0	0	0	0	1	0	0	0	0	7
08:30 AM	0	4	0	0	0	0	0	2	1	0	2	0	0	9
08:45 AM	0	8	0	0	0	0	0	3	2	0	1	1	1	16
Total	1	25	0	1	0	0	0	7	7	0	3	1	1	46
Grand Total	2	44	0	1	0	0	0	11	11	0	6	1	1	77
Apprch %	4.3	95.7	0	100	0	0	0	50	50	0	75	12.5	12.5	
Total %	2.6	57.1	0	1.3	0	0	0	14.3	14.3	0	7.8	1.3	1.3	

Start Time	Harrison Avenue From North				Herald Driveway From East				Harrison Avenue From South					Wm.Mullins Way From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 08:00 AM																		
08:00 AM	1	8	0	9	0	0	0	0	0	2	3	0	5	0	0	0	0	14
08:15 AM	0	5	0	5	1	0	0	1	0	0	1	0	1	0	0	0	0	7
08:30 AM	0	4	0	4	0	0	0	0	0	2	1	0	3	2	0	0	2	9
08:45 AM	0	8	0	8	0	0	0	0	0	3	2	0	5	1	1	1	3	16
Total Volume	1	25	0	26	1	0	0	1	0	7	7	0	14	3	1	1	5	46
% App. Total	3.8	96.2	0		100	0	0		0	50	50	0		60	20	20		
PHF	.250	.781	.000	.722	.250	.000	.000	.250	.000	.583	.583	.000	.700	.375	.250	.250	.417	.719





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File Name : 112441 FF  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Harrison Avenue From North				Herald Driveway From East				Harrison Avenue From South				Wm.Mullins Way From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	1	0	0	0	0	0	6	0	0	0	0	0	0	0	5	12
07:15 AM	0	0	0	2	0	0	0	1	0	0	1	0	0	0	0	7	11
07:30 AM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	3	7
07:45 AM	0	0	0	0	0	0	0	11	0	0	0	2	0	0	0	8	21
Total	0	1	0	2	0	0	0	20	0	2	1	2	0	0	0	23	51
08:00 AM	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	6	9
08:15 AM	0	2	0	0	0	0	0	5	0	0	0	1	0	0	0	8	16
08:30 AM	0	1	0	0	0	0	0	3	0	2	0	2	0	0	0	10	18
08:45 AM	0	0	0	1	0	0	0	6	0	2	0	0	0	0	0	10	19
Total	0	4	0	1	0	0	0	14	0	4	0	5	0	0	0	34	62
Grand Total	0	5	0	3	0	0	0	34	0	6	1	7	0	0	0	57	113
Apprch %	0	62.5	0	37.5	0	0	0	100	0	42.9	7.1	50	0	0	0	100	
Total %	0	4.4	0	2.7	0	0	0	30.1	0	5.3	0.9	6.2	0	0	0	50.4	

Start Time	Harrison Avenue From North					Herald Driveway From East					Harrison Avenue From South					Wm.Mullins Way From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	0	0	11	11	0	0	0	2	2	0	0	0	8	8	21
08:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	2	0	0	0	6	6	9	
08:15 AM	0	2	0	0	2	0	0	0	5	5	0	0	0	1	1	0	0	0	8	8	16
08:30 AM	0	1	0	0	1	0	0	0	3	3	0	2	0	2	4	0	0	0	10	10	18
Total Volume	0	4	0	0	4	0	0	0	19	19	0	2	0	7	9	0	0	0	32	32	64
% App. Total	0	100	0	0		0	0	0	100		0	22.2	0	77.8		0	0	0	100		
PHF	.000	.500	.000	.000	.500	.000	.000	.000	.432	.432	.000	.250	.000	.875	.563	.000	.000	.000	.800	.800	.762



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E/W: Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 GG  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Harrison Street From North				Traveler Street From East			Harrison Street From South				Traveler Street From West			Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
07:00 AM	8	33	9	2	9	7	4	19	28	19	4	0	0	0	142
07:15 AM	5	25	7	2	6	5	3	22	31	20	1	0	0	0	127
07:30 AM	6	34	13	0	14	5	2	21	28	16	2	0	0	0	141
07:45 AM	5	37	12	0	14	9	3	24	39	20	1	0	0	0	164
Total	24	129	41	4	43	26	12	86	126	75	8	0	0	0	574
08:00 AM	8	36	7	0	20	13	4	22	39	32	7	0	0	0	188
08:15 AM	8	41	15	0	23	12	2	27	44	31	3	0	0	0	206
08:30 AM	3	58	10	1	27	18	3	36	31	36	1	0	0	0	224
08:45 AM	9	55	13	2	28	11	5	35	53	25	3	0	0	0	239
Total	28	190	45	3	98	54	14	120	167	124	14	0	0	0	857
Grand Total	52	319	86	7	141	80	26	206	293	199	22	0	0	0	1431
Apprch %	11.2	68.8	18.5	1.5	57.1	32.4	10.5	28.6	40.7	27.6	3.1	0	0	0	
Total %	3.6	22.3	6	0.5	9.9	5.6	1.8	14.4	20.5	13.9	1.5	0	0	0	
Cars	44	291	70	7	130	75	25	196	285	180	21	0	0	0	1324
% Cars	84.6	91.2	81.4	100	92.2	93.8	96.2	95.1	97.3	90.5	95.5	0	0	0	92.5
Heavy Vehicles	8	28	16	0	11	5	1	10	8	19	1	0	0	0	107
% Heavy Vehicles	15.4	8.8	18.6	0	7.8	6.2	3.8	4.9	2.7	9.5	4.5	0	0	0	7.5

Start Time	Harrison Street From North					Traveler Street From East				Harrison Street From South					Traveler Street From West				Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 08:00 AM																			
08:00 AM	8	36	7	0	51	20	13	4	37	22	39	32	7	100	0	0	0	0	188
08:15 AM	8	41	15	0	64	23	12	2	37	27	44	31	3	105	0	0	0	0	206
08:30 AM	3	58	10	1	72	27	18	3	48	36	31	36	1	104	0	0	0	0	224
08:45 AM	9	55	13	2	79	28	11	5	44	35	53	25	3	116	0	0	0	0	239
Total Volume	28	190	45	3	266	98	54	14	166	120	167	124	14	425	0	0	0	0	857
% App. Total	10.5	71.4	16.9	1.1		59	32.5	8.4		28.2	39.3	29.2	3.3		0	0	0		
PHF	.778	.819	.750	.375	.842	.875	.750	.700	.865	.833	.788	.861	.500	.916	.000	.000	.000	.000	.896
Cars	24	172	38	3	237	92	50	14	156	114	160	114	14	402	0	0	0	0	795
% Cars	85.7	90.5	84.4	100	89.1	93.9	92.6	100	94.0	95.0	95.8	91.9	100	94.6	0	0	0	0	92.8
Heavy Vehicles	4	18	7	0	29	6	4	0	10	6	7	10	0	23	0	0	0	0	62
% Heavy Vehicles	14.3	9.5	15.6	0	10.9	6.1	7.4	0	6.0	5.0	4.2	8.1	0	5.4	0	0	0	0	7.2



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N/S: Harrison Street  
E/W: Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 GG  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Harrison Street From North				Traveler Street From East			Harrison Street From South				Traveler Street From West			Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
07:00 AM	2	5	2	0	2	1	0	1	1	2	1	0	0	0	17
07:15 AM	0	2	1	0	1	0	1	0	0	2	0	0	0	0	7
07:30 AM	1	0	4	0	1	0	0	2	0	3	0	0	0	0	11
07:45 AM	1	3	2	0	1	0	0	1	0	2	0	0	0	0	10
Total	4	10	9	0	5	1	1	4	1	9	1	0	0	0	45
08:00 AM	2	6	2	0	1	2	0	0	4	5	0	0	0	0	22
08:15 AM	1	4	1	0	1	1	0	2	1	1	0	0	0	0	12
08:30 AM	0	2	3	0	1	1	0	2	0	2	0	0	0	0	11
08:45 AM	1	6	1	0	3	0	0	2	2	2	0	0	0	0	17
Total	4	18	7	0	6	4	0	6	7	10	0	0	0	0	62
Grand Total	8	28	16	0	11	5	1	10	8	19	1	0	0	0	107
Apprch %	15.4	53.8	30.8	0	64.7	29.4	5.9	26.3	21.1	50	2.6	0	0	0	
Total %	7.5	26.2	15	0	10.3	4.7	0.9	9.3	7.5	17.8	0.9	0	0	0	

Start Time	Harrison Street From North					Traveler Street From East				Harrison Street From South					Traveler Street From West				Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 08:00 AM																			
08:00 AM	2	6	2	0	10	1	2	0	3	0	4	5	0	9	0	0	0	0	22
08:15 AM	1	4	1	0	6	1	1	0	2	2	1	1	0	4	0	0	0	0	12
08:30 AM	0	2	3	0	5	1	1	0	2	2	0	2	0	4	0	0	0	0	11
08:45 AM	1	6	1	0	8	3	0	0	3	2	2	2	0	6	0	0	0	0	17
Total Volume	4	18	7	0	29	6	4	0	10	6	7	10	0	23	0	0	0	0	62
% App. Total	13.8	62.1	24.1	0		60	40	0		26.1	30.4	43.5	0		0	0	0		
PHF	.500	.750	.583	.000	.725	.500	.500	.000	.833	.750	.438	.500	.000	.639	.000	.000	.000	.000	.705



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E/W: Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 GG  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Harrison Street From North				Traveler Street From East				Harrison Street From South				Traveler Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	1	1	0	0	0	4	0	0	0	2	0	0	0	4	12
07:15 AM	0	0	0	0	0	0	0	4	1	1	0	0	0	0	0	5	11
07:30 AM	0	0	0	0	0	0	0	4	0	2	0	2	0	0	0	6	14
07:45 AM	0	0	0	1	0	0	0	9	0	0	0	2	0	0	0	9	21
<b>Total</b>	0	0	1	2	0	0	0	21	1	3	0	6	0	0	0	24	58
08:00 AM	0	1	0	3	0	0	0	6	1	0	1	1	0	0	0	9	22
08:15 AM	0	0	2	0	0	0	0	13	1	1	0	1	0	0	0	6	24
08:30 AM	0	1	0	4	0	0	0	8	0	1	0	1	0	0	0	9	24
08:45 AM	0	0	0	2	0	1	0	10	0	1	0	2	0	0	0	7	23
<b>Total</b>	0	2	2	9	0	1	0	37	2	3	1	5	0	0	0	31	93
<b>Grand Total</b>	0	2	3	11	0	1	0	58	3	6	1	11	0	0	0	55	151
Apprch %	0	12.5	18.8	68.8	0	1.7	0	98.3	14.3	28.6	4.8	52.4	0	0	0	100	
Total %	0	1.3	2	7.3	0	0.7	0	38.4	2	4	0.7	7.3	0	0	0	36.4	

Start Time	Harrison Street From North					Traveler Street From East					Harrison Street From South					Traveler Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	1	0	3	4	0	0	0	6	6	1	0	1	1	3	0	0	0	9	9	22
08:15 AM	0	0	2	0	2	0	0	0	13	13	1	1	0	1	3	0	0	0	6	6	24
08:30 AM	0	1	0	4	5	0	0	0	8	8	0	1	0	1	2	0	0	0	9	9	24
08:45 AM	0	0	0	2	2	0	1	0	10	11	0	1	0	2	3	0	0	0	7	7	23
Total Volume	0	2	2	9	13	0	1	0	37	38	2	3	1	5	11	0	0	0	31	31	93
% App. Total	0	15.4	15.4	69.2		0	2.6	0	97.4		18.2	27.3	9.1	45.5		0	0	0	100		
PHF	.000	.500	.250	.563	.650	.000	.250	.000	.712	.731	.500	.750	.250	.625	.917	.000	.000	.000	.861	.861	.969



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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 HH  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Harrison Street From North				E. Berkeley Street From East			Harrison Street From South			E. Berkeley Street From West			Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
07:00 AM	10	24	0	1	41	197	48	0	28	7	0	0	0	356
07:15 AM	7	25	0	1	35	202	35	0	34	9	0	0	0	348
07:30 AM	6	25	0	1	39	229	43	0	29	8	0	0	0	380
07:45 AM	8	38	0	1	42	225	43	0	41	14	0	0	0	412
Total	31	112	0	4	157	853	169	0	132	38	0	0	0	1496
08:00 AM	16	25	0	1	68	275	39	0	28	12	0	0	0	464
08:15 AM	12	30	0	1	55	249	44	0	46	11	0	0	0	448
08:30 AM	21	36	0	2	68	261	44	0	32	11	0	0	0	475
08:45 AM	21	43	0	0	65	244	44	0	51	13	0	0	0	481
Total	70	134	0	4	256	1029	171	0	157	47	0	0	0	1868
Grand Total	101	246	0	8	413	1882	340	0	289	85	0	0	0	3364
Apprch %	28.5	69.3	0	2.3	15.7	71.4	12.9	0	77.3	22.7	0	0	0	
Total %	3	7.3	0	0.2	12.3	55.9	10.1	0	8.6	2.5	0	0	0	
Cars	90	234	0	8	384	1758	333	0	279	77	0	0	0	3163
% Cars	89.1	95.1	0	100	93	93.4	97.9	0	96.5	90.6	0	0	0	94
Heavy Vehicles	11	12	0	0	29	124	7	0	10	8	0	0	0	201
% Heavy Vehicles	10.9	4.9	0	0	7	6.6	2.1	0	3.5	9.4	0	0	0	6

Start Time	Harrison Street From North					E. Berkeley Street From East				Harrison Street From South				E. Berkeley Street From West				Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
08:00 AM	16	25	0	1	42	<b>68</b>	<b>275</b>	39	<b>382</b>	0	28	12	40	0	0	0	0	464
08:15 AM	12	30	0	1	43	55	249	<b>44</b>	348	0	46	11	57	0	0	0	0	448
08:30 AM	<b>21</b>	36	0	<b>2</b>	59	68	261	44	373	0	32	11	43	0	0	0	0	475
08:45 AM	21	<b>43</b>	0	0	<b>64</b>	65	244	44	353	0	<b>51</b>	<b>13</b>	<b>64</b>	0	0	0	0	<b>481</b>
Total Volume	70	134	0	4	208	256	1029	171	1456	0	157	47	204	0	0	0	0	1868
% App. Total	33.7	64.4	0	1.9		17.6	70.7	11.7		0	77	23		0	0	0		
PHF	.833	.779	.000	.500	.813	.941	.935	.972	.953	.000	.770	.904	.797	.000	.000	.000	.000	.971
Cars	62	128	0	4	194	239	964	168	1371	0	150	45	195	0	0	0	0	1760
% Cars	88.6	95.5	0	100	93.3	93.4	93.7	98.2	94.2	0	95.5	95.7	95.6	0	0	0	0	94.2
Heavy Vehicles	8	6	0	0	14	17	65	3	85	0	7	2	9	0	0	0	0	108
% Heavy Vehicles	11.4	4.5	0	0	6.7	6.6	6.3	1.8	5.8	0	4.5	4.3	4.4	0	0	0	0	5.8

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

Peak Hour for Entire Intersection Begins at 08:00 AM



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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 HH  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Harrison Street From North				E. Berkeley Street From East			Harrison Street From South			E. Berkeley Street From West			Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
07:00 AM	1	3	0	0	4	13	0	0	1	0	0	0	0	22
07:15 AM	1	1	0	0	2	12	1	0	0	1	0	0	0	18
07:30 AM	0	0	0	0	4	15	1	0	1	2	0	0	0	23
07:45 AM	1	2	0	0	2	19	2	0	1	3	0	0	0	30
Total	3	6	0	0	12	59	4	0	3	6	0	0	0	93
08:00 AM	4	1	0	0	10	14	0	0	0	1	0	0	0	30
08:15 AM	1	2	0	0	2	19	2	0	3	0	0	0	0	29
08:30 AM	2	1	0	0	2	25	0	0	1	0	0	0	0	31
08:45 AM	1	2	0	0	3	7	1	0	3	1	0	0	0	18
Total	8	6	0	0	17	65	3	0	7	2	0	0	0	108
Grand Total	11	12	0	0	29	124	7	0	10	8	0	0	0	201
Apprch %	47.8	52.2	0	0	18.1	77.5	4.4	0	55.6	44.4	0	0	0	
Total %	5.5	6	0	0	14.4	61.7	3.5	0	5	4	0	0	0	

Start Time	Harrison Street From North					E. Berkeley Street From East				Harrison Street From South				E. Berkeley Street From West				Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	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	2	0	0	3	2	19	2	23	0	1	3	4	0	0	0	0	30
08:00 AM	4	1	0	0	5	10	14	0	24	0	0	1	1	0	0	0	0	30
08:15 AM	1	2	0	0	3	2	19	2	23	0	3	0	3	0	0	0	0	29
08:30 AM	2	1	0	0	3	2	25	0	27	0	1	0	1	0	0	0	0	31
Total Volume	8	6	0	0	14	16	77	4	97	0	5	4	9	0	0	0	0	120
% App. Total	57.1	42.9	0	0		16.5	79.4	4.1		0	55.6	44.4		0	0	0		
PHF	.500	.750	.000	.000	.700	.400	.770	.500	.898	.000	.417	.333	.563	.000	.000	.000	.000	.968



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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 HH  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Harrison Street From North				E. Berkeley Street From East				Harrison Street From South				E. Berkeley Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	16	0	0	0	10	0	0	0	10	0	0	0	15	51
07:15 AM	0	0	0	24	1	0	0	5	0	1	0	4	0	0	0	14	49
07:30 AM	0	0	0	14	2	0	0	7	0	0	0	9	0	0	0	13	45
07:45 AM	0	0	0	8	0	0	0	11	0	0	0	20	0	0	0	16	55
Total	0	0	0	62	3	0	0	33	0	1	0	43	0	0	0	58	200
08:00 AM	0	0	0	5	0	0	0	17	0	2	0	18	0	0	0	9	51
08:15 AM	0	0	0	12	1	0	0	24	0	0	0	24	0	0	0	11	72
08:30 AM	0	1	0	4	0	1	0	8	0	1	0	8	0	0	0	10	33
08:45 AM	0	0	0	10	1	0	0	24	0	1	0	8	0	0	0	8	52
Total	0	1	0	31	2	1	0	73	0	4	0	58	0	0	0	38	208
Grand Total	0	1	0	93	5	1	0	106	0	5	0	101	0	0	0	96	408
Apprch %	0	1.1	0	98.9	4.5	0.9	0	94.6	0	4.7	0	95.3	0	0	0	100	
Total %	0	0.2	0	22.8	1.2	0.2	0	26	0	1.2	0	24.8	0	0	0	23.5	

Start Time	Harrison Street From North					E. Berkeley Street From East					Harrison Street From South					E. Berkeley Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	<b>14</b>	<b>14</b>	<b>2</b>	0	0	7	9	0	0	0	9	9	0	0	0	13	13	45
07:45 AM	0	0	0	8	8	0	0	0	11	11	0	0	0	20	20	0	0	0	<b>16</b>	<b>16</b>	55
08:00 AM	0	0	0	5	5	0	0	0	17	17	0	<b>2</b>	0	18	20	0	0	0	9	9	51
08:15 AM	0	0	0	12	12	1	0	0	<b>24</b>	<b>25</b>	0	0	0	<b>24</b>	<b>24</b>	0	0	0	11	11	<b>72</b>
Total Volume	0	0	0	39	39	3	0	0	59	62	0	2	0	71	73	0	0	0	49	49	223
% App. Total	0	0	0	100		4.8	0	0	95.2		0	2.7	0	97.3		0	0	0	100		
PHF	.000	.000	.000	.696	.696	.375	.000	.000	.615	.620	.000	.250	.000	.740	.760	.000	.000	.000	.766	.766	.774



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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 II  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Washington Street From North			Herald Street From East			Washington Street From South			Herald Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
07:00 AM	0	4	1	0	0	0	3	86	0	0	124	5	223
07:15 AM	0	3	0	0	0	0	7	88	0	0	142	10	250
07:30 AM	0	4	0	0	0	0	11	89	0	0	181	19	304
07:45 AM	0	4	0	0	0	0	8	126	0	0	221	14	373
Total	0	15	1	0	0	0	29	389	0	0	668	48	1150
08:00 AM	0	5	3	0	0	0	9	133	0	0	210	15	375
08:15 AM	0	3	0	0	0	0	6	153	0	0	226	10	398
08:30 AM	0	5	0	0	0	0	15	162	0	0	200	17	399
08:45 AM	0	3	0	0	0	0	4	145	0	0	192	17	361
Total	0	16	3	0	0	0	34	593	0	0	828	59	1533
Grand Total	0	31	4	0	0	0	63	982	0	0	1496	107	2683
Apprch %	0	88.6	11.4	0	0	0	6	94	0	0	93.3	6.7	
Total %	0	1.2	0.1	0	0	0	2.3	36.6	0	0	55.8	4	
Cars	0	1	4	0	0	0	62	883	0	0	1384	99	2433
% Cars	0	3.2	100	0	0	0	98.4	89.9	0	0	92.5	92.5	90.7
Heavy Vehicles	0	30	0	0	0	0	1	99	0	0	112	8	250
% Heavy Vehicles	0	96.8	0	0	0	0	1.6	10.1	0	0	7.5	7.5	9.3

Start Time	Washington Street From North				Herald Street From East				Washington Street From South				Herald Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
07:45 AM	0	4	0	4	0	0	0	0	8	126	0	134	0	221	14	235	373
08:00 AM	0	5	3	8	0	0	0	0	9	133	0	142	0	210	15	225	375
08:15 AM	0	3	0	3	0	0	0	0	6	153	0	159	0	226	10	236	398
08:30 AM	0	5	0	5	0	0	0	0	15	162	0	177	0	200	17	217	399
Total Volume	0	17	3	20	0	0	0	0	38	574	0	612	0	857	56	913	1545
% App. Total	0	85	15		0	0	0		6.2	93.8	0		0	93.9	6.1		
PHF	.000	.850	.250	.625	.000	.000	.000	.000	.633	.886	.000	.864	.000	.948	.824	.967	.968
Cars	0	0	3	3	0	0	0	0	38	521	0	559	0	797	51	848	1410
% Cars	0	0	100	15.0	0	0	0	0	100	90.8	0	91.3	0	93.0	91.1	92.9	91.3
Heavy Vehicles	0	17	0	17	0	0	0	0	0	53	0	53	0	60	5	65	135
% Heavy Vehicles	0	100	0	85.0	0	0	0	0	0	9.2	0	8.7	0	7.0	8.9	7.1	8.7

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





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E/W: Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 II  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Washington Street From North			Herald Street From East			Washington Street From South			Herald Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
07:00 AM	0	3	0	0	0	0	1	12	0	0	15	0	31
07:15 AM	0	3	0	0	0	0	0	11	0	0	12	1	27
07:30 AM	0	4	0	0	0	0	0	9	0	0	9	1	23
07:45 AM	0	4	0	0	0	0	0	16	0	0	13	2	35
Total	0	14	0	0	0	0	1	48	0	0	49	4	116
08:00 AM	0	5	0	0	0	0	0	11	0	0	13	0	29
08:15 AM	0	3	0	0	0	0	0	14	0	0	19	2	38
08:30 AM	0	5	0	0	0	0	0	12	0	0	15	1	33
08:45 AM	0	3	0	0	0	0	0	14	0	0	16	1	34
Total	0	16	0	0	0	0	0	51	0	0	63	4	134
Grand Total	0	30	0	0	0	0	1	99	0	0	112	8	250
Apprch %	0	100	0	0	0	0	1	99	0	0	93.3	6.7	
Total %	0	12	0	0	0	0	0.4	39.6	0	0	44.8	3.2	

Start Time	Washington Street From North				Herald Street From East				Washington Street From South				Herald Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	4	0	4	0	0	0	0	0	16	0	16	0	13	2	15	35
08:00 AM	0	5	0	5	0	0	0	0	0	11	0	11	0	13	0	13	29
08:15 AM	0	3	0	3	0	0	0	0	0	14	0	14	0	19	2	21	38
08:30 AM	0	5	0	5	0	0	0	0	0	12	0	12	0	15	1	16	33
Total Volume	0	17	0	17	0	0	0	0	0	53	0	53	0	60	5	65	135
% App. Total	0	100	0		0	0	0		0	100	0		0	92.3	7.7		
PHF	.000	.850	.000	.850	.000	.000	.000	.000	.000	.828	.000	.828	.000	.789	.625	.774	.888



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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 II  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Washington Street From North				Herald Street From East				Washington Street From South				Herald Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	0	0	0	8	0	0	0	3	0	0	0	5	16
07:15 AM	0	0	0	0	0	0	0	16	0	2	0	2	0	0	0	7	27
07:30 AM	0	0	0	0	0	0	0	16	0	2	0	2	0	0	0	15	35
07:45 AM	0	0	0	0	0	0	0	19	0	3	0	9	0	0	0	12	43
Total	0	0	0	0	0	0	0	59	0	7	0	16	0	0	0	39	121
08:00 AM	0	0	0	0	0	0	0	16	0	1	0	3	0	1	0	13	34
08:15 AM	0	0	0	3	0	0	0	25	0	2	0	4	0	0	1	22	57
08:30 AM	0	0	0	4	0	0	0	32	0	1	0	4	0	0	0	32	73
08:45 AM	0	1	0	2	0	0	0	29	0	4	0	5	0	0	0	33	74
Total	0	1	0	9	0	0	0	102	0	8	0	16	0	1	1	100	238
Grand Total	0	1	0	9	0	0	0	161	0	15	0	32	0	1	1	139	359
Apprch %	0	10	0	90	0	0	0	100	0	31.9	0	68.1	0	0.7	0.7	98.6	
Total %	0	0.3	0	2.5	0	0	0	44.8	0	4.2	0	8.9	0	0.3	0.3	38.7	

Start Time	Washington Street From North					Herald Street From East					Washington Street From South					Herald Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	0	0	16	16	0	1	0	3	4	0	1	0	13	14	34
08:15 AM	0	0	0	3	3	0	0	0	25	25	0	2	0	4	6	0	0	1	22	23	57
08:30 AM	0	0	0	4	4	0	0	0	32	32	0	1	0	4	5	0	0	0	32	32	73
08:45 AM	0	1	0	2	3	0	0	0	29	29	0	4	0	5	9	0	0	0	33	33	74
Total Volume	0	1	0	9	10	0	0	0	102	102	0	8	0	16	24	0	1	1	100	102	238
% App. Total	0	10	0	90		0	0	0	100		0	33.3	0	66.7		0	1	1	98		
PHF	.000	.250	.000	.563	.625	.000	.000	.000	.797	.797	.000	.500	.000	.800	.667	.000	.250	.250	.758	.773	.804



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E/W: W. Broadway Street/ Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 JJ  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Table with columns for Start Time, I-93 NB Ramp From North, West Broadway Street From East, Frontage Road NB From South, Traveler Street From West, I-90 Ramps From Northwest, and Int. Total. Rows include time intervals from 07:00 AM to 08:45 AM and Grand Total.

Table with columns for Start Time, I-93 NB Ramp From North, West Broadway Street From East, Frontage Road NB From South, Traveler Street From West, I-90 Ramps From Northwest, and Int. Total. Rows include peak hour analysis from 07:45 AM to 08:30 AM and PHF (Peak Hour Factor) values.



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Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	I-93 NB Ramp From North				West Broadway Street From East					Frontage Road NB From South				Traveler Street From West				I-90 Ramps From Northwest				Int. Total
	Hard Right	Right	Thru	Left	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	
07:00 AM	0	0	0	0	4	1	0	0	0	1	11	13	0	0	9	3	2	0	0	0	0	44
07:15 AM	0	0	0	0	4	3	0	0	0	0	11	9	0	0	6	2	0	0	0	0	0	35
07:30 AM	0	0	0	0	7	2	0	0	0	1	9	11	0	0	13	2	0	0	0	0	0	45
07:45 AM	0	0	0	0	9	4	0	0	0	2	9	11	0	0	13	3	1	0	0	0	0	52
<b>Total</b>	0	0	0	0	24	10	0	0	0	4	40	44	0	0	41	10	3	0	0	0	0	176
08:00 AM	0	0	0	0	6	1	0	0	0	0	8	10	0	0	4	5	0	0	0	0	0	34
08:15 AM	0	0	0	0	2	1	0	0	0	3	15	5	0	0	9	3	3	0	0	0	0	41
08:30 AM	0	0	0	0	9	5	0	0	0	1	11	6	0	0	9	4	1	0	0	0	0	46
08:45 AM	0	0	0	0	10	2	0	0	0	3	9	10	0	0	15	5	0	0	0	0	0	54
<b>Total</b>	0	0	0	0	27	9	0	0	0	7	43	31	0	0	37	17	4	0	0	0	0	175
<b>Grand Total</b>	0	0	0	0	51	19	0	0	0	11	83	75	0	0	78	27	7	0	0	0	0	351
Apprch %	0	0	0	0	72.9	27.1	0	0	0	6.5	49.1	44.4	0	0	69.6	24.1	6.2	0	0	0	0	
Total %	0	0	0	0	14.5	5.4	0	0	0	3.1	23.6	21.4	0	0	22.2	7.7	2	0	0	0	0	

Start Time	I-93 NB Ramp From North					West Broadway Street From East					Frontage Road NB From South					Traveler Street From West					I-90 Ramps From Northwest					Int. Total	
	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left		App. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 07:00 AM																											
07:00 AM	0	0	0	0	0	4	1	0	0	0	5	1	11	13	0	25	0	9	3	2	14	0	0	0	0	0	44
07:15 AM	0	0	0	0	0	4	3	0	0	0	7	0	11	9	0	20	0	6	2	0	8	0	0	0	0	0	35
07:30 AM	0	0	0	0	0	7	2	0	0	0	9	1	9	11	0	21	0	13	2	0	15	0	0	0	0	0	45
07:45 AM	0	0	0	0	0	9	4	0	0	0	13	2	9	11	0	22	0	13	3	1	17	0	0	0	0	0	52
Total Volume	0	0	0	0	0	24	10	0	0	0	34	4	40	44	0	88	0	41	10	3	54	0	0	0	0	0	176
% App. Total	0	0	0	0	0	70.6	29.4	0	0	0	4.5	45.5	50	0	0	75.9	18.5	5.6	0	0	0	0	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.667	.625	.000	.000	.000	.654	.500	.909	.846	.000	.880	.000	.788	.833	.375	.794	.000	.000	.000	.000	.000	.846



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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 JJ  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Table with columns for Start Time, I-93 NB Ramp From North, West Broadway Street From East, Frontage Road NB From South, Traveler Street From West, I-90 Ramps From Northwest, and Int. Total. Rows include time intervals from 07:00 AM to 08:45 AM and Grand Total.

Table with columns for Start Time, I-93 NB Ramp From North, West Broadway Street From East, Frontage Road NB From South, Traveler Street From West, I-90 Ramps From Northwest, and Int. Total. Includes Peak Hour Analysis and PHF (Peak Hour Factor) values.



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E/W: W. 4th Street/ E. Berkley Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 KK  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Frontage Road NB From North			West 4th Street From East			Frontage Road NB From South				East Berkley Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
07:00 AM	0	0	0	35	152	0	31	119	108	17	0	0	0	462
07:15 AM	0	0	0	35	178	0	34	123	106	33	0	0	0	509
07:30 AM	0	0	0	36	177	0	45	172	102	27	0	0	0	559
07:45 AM	0	0	0	37	201	0	39	149	110	41	0	0	0	577
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>143</b>	<b>708</b>	<b>0</b>	<b>149</b>	<b>563</b>	<b>426</b>	<b>118</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2107</b>
08:00 AM	0	0	0	47	208	0	37	171	139	36	0	0	0	638
08:15 AM	0	0	0	38	240	0	52	160	102	25	0	0	0	617
08:30 AM	0	0	0	30	209	0	54	173	135	42	0	0	0	643
08:45 AM	0	0	0	48	241	0	60	139	103	31	0	0	0	622
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>163</b>	<b>898</b>	<b>0</b>	<b>203</b>	<b>643</b>	<b>479</b>	<b>134</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2520</b>
<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>306</b>	<b>1606</b>	<b>0</b>	<b>352</b>	<b>1206</b>	<b>905</b>	<b>252</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4627</b>
Apprch %	0	0	0	16	84	0	13	44.4	33.3	9.3	0	0	0	
Total %	0	0	0	6.6	34.7	0	7.6	26.1	19.6	5.4	0	0	0	
Cars	0	0	0	284	1486	0	317	1067	861	233	0	0	0	4248
% Cars	0	0	0	92.8	92.5	0	90.1	88.5	95.1	92.5	0	0	0	91.8
Heavy Vehicles	0	0	0	22	120	0	35	139	44	19	0	0	0	379
% Heavy Vehicles	0	0	0	7.2	7.5	0	9.9	11.5	4.9	7.5	0	0	0	8.2

Start Time	Frontage Road NB From North				West 4th Street From East				Frontage Road NB From South					East Berkley Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 08:00 AM																		
08:00 AM	0	0	0	0	47	208	0	255	37	171	<b>139</b>	36	383	0	0	0	0	638
08:15 AM	0	0	0	0	38	240	0	278	52	160	102	25	339	0	0	0	0	617
08:30 AM	0	0	0	0	30	209	0	239	54	<b>173</b>	135	<b>42</b>	<b>404</b>	0	0	0	0	<b>643</b>
08:45 AM	0	0	0	0	<b>48</b>	<b>241</b>	0	<b>289</b>	<b>60</b>	139	103	31	333	0	0	0	0	622
Total Volume	0	0	0	0	163	898	0	1061	203	643	479	134	1459	0	0	0	0	2520
% App. Total	0	0	0	0	15.4	84.6	0		13.9	44.1	32.8	9.2		0	0	0		
PHF	.000	.000	.000	.000	.849	.932	.000	.918	.846	.929	.862	.798	.903	.000	.000	.000	.000	.980
Cars	0	0	0	0	151	833	0	984	182	576	458	125	1341	0	0	0	0	2325
% Cars	0	0	0	0	92.6	92.8	0	92.7	89.7	89.6	95.6	93.3	91.9	0	0	0	0	92.3
Heavy Vehicles	0	0	0	0	12	65	0	77	21	67	21	9	118	0	0	0	0	195
% Heavy Vehicles	0	0	0	0	7.4	7.2	0	7.3	10.3	10.4	4.4	6.7	8.1	0	0	0	0	7.7



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File Name : 112441 KK  
Site Code : 10995.00  
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Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Frontage Road NB From North			West 4th Street From East			Frontage Road NB From South				East Berkley Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
07:00 AM	0	0	0	4	6	0	3	20	9	2	0	0	0	44
07:15 AM	0	0	0	1	12	0	2	15	4	0	0	0	0	34
07:30 AM	0	0	0	1	19	0	6	21	4	4	0	0	0	55
07:45 AM	0	0	0	4	18	0	3	16	6	4	0	0	0	51
Total	0	0	0	10	55	0	14	72	23	10	0	0	0	184
08:00 AM	0	0	0	4	16	0	3	17	8	1	0	0	0	49
08:15 AM	0	0	0	1	14	0	5	21	7	2	0	0	0	50
08:30 AM	0	0	0	4	22	0	6	14	3	2	0	0	0	51
08:45 AM	0	0	0	3	13	0	7	15	3	4	0	0	0	45
Total	0	0	0	12	65	0	21	67	21	9	0	0	0	195
Grand Total	0	0	0	22	120	0	35	139	44	19	0	0	0	379
Apprch %	0	0	0	15.5	84.5	0	14.8	58.6	18.6	8	0	0	0	
Total %	0	0	0	5.8	31.7	0	9.2	36.7	11.6	5	0	0	0	

Start Time	Frontage Road NB From North				West 4th Street From East				Frontage Road NB From South					East Berkley Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:30 AM																		
07:30 AM	0	0	0	0	1	19	0	20	6	21	4	4	35	0	0	0	0	55
07:45 AM	0	0	0	0	4	18	0	22	3	16	6	4	29	0	0	0	0	51
08:00 AM	0	0	0	0	4	16	0	20	3	17	8	1	29	0	0	0	0	49
08:15 AM	0	0	0	0	1	14	0	15	5	21	7	2	35	0	0	0	0	50
Total Volume	0	0	0	0	10	67	0	77	17	75	25	11	128	0	0	0	0	205
% App. Total	0	0	0	0	13	87	0		13.3	58.6	19.5	8.6		0	0	0		
PHF	.000	.000	.000	.000	.625	.882	.000	.875	.708	.893	.781	.688	.914	.000	.000	.000	.000	.932







PRECISION  
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N/S/SW: Albany Street/Boston Herald Dr.  
E/W: I-93 SB Onramp/Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 AAA  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Albany Street From North				I-93 SB Onramp From East				Albany Street From South				Boston Herald Driveway From Southwest				Herald Street From West				Int. Total
	Right	Bear Right	Thru	Left	Right	Thru	Bear Left	Left	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	Hard Right	Right	Thru	Left	
04:00 PM	0	0	210	83	0	0	0	0	0	0	0	0	2	0	0	0	0	152	173	0	620
04:15 PM	0	1	216	94	0	0	0	0	0	0	0	0	1	0	0	0	0	187	162	0	661
04:30 PM	0	1	268	94	0	0	0	0	0	0	0	0	1	0	0	0	0	205	143	0	712
04:45 PM	0	0	267	87	0	0	0	0	0	0	0	0	3	2	0	0	0	182	135	0	676
Total	0	2	961	358	0	0	0	0	0	0	0	0	7	2	0	0	0	726	613	0	2669
05:00 PM	0	0	298	93	0	0	0	0	0	0	0	0	6	1	0	0	0	196	127	0	721
05:15 PM	0	0	290	79	0	0	0	0	0	0	0	0	1	1	0	0	0	223	116	0	710
05:30 PM	0	0	284	78	0	0	0	0	0	0	0	0	0	0	0	0	0	239	124	0	725
05:45 PM	0	0	251	97	0	0	0	0	0	0	0	0	1	0	0	0	0	244	166	0	759
Total	0	0	1123	347	0	0	0	0	0	0	0	0	8	2	0	0	0	902	533	0	2915
Grand Total	0	2	2084	705	0	0	0	0	0	0	0	0	15	4	0	0	0	1628	1146	0	5584
Apprch %	0	0.1	74.7	25.3	0	0	0	0	0	0	0	0	78.9	21.1	0	0	0	58.7	41.3	0	
Total %	0	0	37.3	12.6	0	0	0	0	0	0	0	0	0.3	0.1	0	0	0	29.2	20.5	0	
Cars	0	2	1994	684	0	0	0	0	0	0	0	0	15	4	0	0	0	1572	1123	0	5394
% Cars	0	100	95.7	97	0	0	0	0	0	0	0	0	100	100	0	0	0	96.6	98	0	96.6
Heavy Vehicles	0	0	90	21	0	0	0	0	0	0	0	0	0	0	0	0	0	56	23	0	190
% Heavy Vehicles	0	0	4.3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3.4	2	0	3.4

Start Time	Albany Street From North					I-93 SB Onramp From East					Albany Street From South					Boston Herald Driveway From Southwest					Herald Street From West					Int. Total
	Right	Bear Right	Thru	Left	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Hard Right	Right	Thru	Left	App. Total	
05:00 PM	0	0	<b>298</b>	93	<b>391</b>	0	0	0	0	0	0	0	0	0	0	<b>6</b>	<b>1</b>	0	0	<b>7</b>	0	196	127	0	323	721
05:15 PM	0	0	290	79	369	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	223	116	0	339	710
05:30 PM	0	0	284	78	362	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	239	124	0	363	725
05:45 PM	0	0	251	<b>97</b>	<b>348</b>	0	0	0	0	0	0	0	0	0	0	1	0	0	0	<b>1</b>	0	<b>244</b>	<b>166</b>	0	<b>410</b>	<b>759</b>
Total Volume	0	0	1123	347	1470	0	0	0	0	0	0	0	0	0	0	8	2	0	0	10	0	902	533	0	1435	2915
% App. Total	0	0	76.4	23.6		0	0	0	0		0	0	0	0		80	20	0	0		0	62.9	37.1	0		
PHF	.000	.000	.942	.894	.940	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.333	.500	.000	.000	.357	.000	.924	.803	.000	.875	.960
Cars	0	0	1092	344	1436	0	0	0	0	0	0	0	0	0	0	8	2	0	0	10	0	878	528	0	1406	2852
% Cars	0	0	97.2	99.1	97.7	0	0	0	0	0	0	0	0	0	0	100	100	0	0	100	0	97.3	99.1	0	98.0	97.8
Heavy Vehicles	0	0	31	3	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	5	0	29	63
% Heavy Vehicles	0	0	2.8	0.9	2.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.7	0.9	0	2.0	2.2

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



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Client: VHB/ E. Guidoboni

File Name : 112441 AAA  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Albany Street From North				I-93 SB Onramp From East				Albany Street From South				Boston Herald Driveway From Southwest				Herald Street From West				Int. Total
	Right	Bear Right	Thru	Left	Right	Thru	Bear Left	Left	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	Hard Right	Right	Thru	Left	
04:00 PM	0	0	22	7	0	0	0	0	0	0	0	0	0	0	0	0	0	5	7	0	41
04:15 PM	0	0	12	7	0	0	0	0	0	0	0	0	0	0	0	0	0	13	6	0	38
04:30 PM	0	0	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	19
04:45 PM	0	0	17	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7	4	0	29
Total	0	0	59	18	0	0	0	0	0	0	0	0	0	0	0	0	0	32	18	0	127
05:00 PM	0	0	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	20
05:15 PM	0	0	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	19
05:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	10
05:45 PM	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	0	14
Total	0	0	31	3	0	0	0	0	0	0	0	0	0	0	0	0	0	24	5	0	63
Grand Total	0	0	90	21	0	0	0	0	0	0	0	0	0	0	0	0	0	56	23	0	190
Apprch %	0	0	81.1	18.9	0	0	0	0	0	0	0	0	0	0	0	0	0	70.9	29.1	0	
Total %	0	0	47.4	11.1	0	0	0	0	0	0	0	0	0	0	0	0	0	29.5	12.1	0	

Start Time	Albany Street From North					I-93 SB Onramp From East					Albany Street From South					Boston Herald Driveway From Southwest					Herald Street From West					Int. Total
	Right	Bear Right	Thru	Left	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Hard Right	Right	Thru	Left	App. Total	
04:00 PM	0	0	22	7	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	7	0	12	41
04:15 PM	0	0	12	7	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	6	0	19	38
04:30 PM	0	0	8	3	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	8	19
04:45 PM	0	0	17	1	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	4	0	11	29
Total Volume	0	0	59	18	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	18	0	50	127
% App. Total	0	0	76.6	23.4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	36	0		
PHF	.000	.000	.670	.643	.664	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.615	.643	.000	.658	.774



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E/W: I-93 SB Onramp/Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 AAA  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Albany Street From North					I-93 SB Onramp From East					Albany Street From South					Boston Herald Driveway From Southwest					Herald Street From West					Int. Total
	Right	Bear Right	Thru	Left	Peds	Right	Thru	Bear Left	Left	Peds	Right	Thru	Left	Hard Left	Peds	Hard Right	Bear Right	Bear Left	Hard Left	Peds	Hard Right	Right	Thru	Left	Peds	
04:00 PM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	7
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	4
<b>Total</b>	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	1	11
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	4
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	4
<b>Grand Total</b>	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	3	15
<b>Apprch %</b>	0	0	25	0	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	100	
<b>Total %</b>	0	0	6.7	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53.3	0	0	0	0	20	

Start Time	Albany Street From North						I-93 SB Onramp From East						Albany Street From South						Boston Herald Driveway From Southwest						Herald Street From West						Int. Total
	Right	Bear Right	Thru	Left	Peds	App. Total	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	1	1	7
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	4
<b>Total Volume</b>	0	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	1	1	15
<b>% App. Total</b>	0	0	25	0	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	100	0	0	0	0	100	
<b>PHF</b>	.000	.000	.250	.000	.375	.333	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.500	.000	.000	.000	.000	.250	.250	.393

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM



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N/S: Albany Street  
E/W: Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 CCC  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Albany Street From North			Traveler Street From East			Albany Street From South			Traveler Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
04:00 PM	15	160	201	0	0	0	0	0	0	8	39	0	423
04:15 PM	11	187	203	0	0	0	0	0	0	12	45	0	458
04:30 PM	16	218	236	0	0	0	0	0	0	7	32	0	509
04:45 PM	9	212	228	0	0	0	0	0	0	13	48	0	510
Total	51	777	868	0	0	0	0	0	0	40	164	0	1900
05:00 PM	10	234	235	0	0	0	0	0	0	10	64	0	553
05:15 PM	14	228	250	0	0	0	0	0	0	18	76	0	586
05:30 PM	10	216	265	0	0	0	0	0	0	9	42	0	542
05:45 PM	14	198	247	0	2	0	0	2	0	12	41	0	516
Total	48	876	997	0	2	0	0	2	0	49	223	0	2197
Grand Total	99	1653	1865	0	2	0	0	2	0	89	387	0	4097
Apprch %	2.7	45.7	51.6	0	100	0	0	100	0	18.7	81.3	0	
Total %	2.4	40.3	45.5	0	0	0	0	0	0	2.2	9.4	0	
Cars	92	1599	1792	0	2	0	0	2	0	85	377	0	3949
% Cars	92.9	96.7	96.1	0	100	0	0	100	0	95.5	97.4	0	96.4
Heavy Vehicles	7	54	73	0	0	0	0	0	0	4	10	0	148
% Heavy Vehicles	7.1	3.3	3.9	0	0	0	0	0	0	4.5	2.6	0	3.6

Start Time	Albany Street From North				Traveler Street From East				Albany Street From South				Traveler Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	10	<b>234</b>	235	479	0	0	0	0	0	0	0	0	10	64	0	74	553
05:15 PM	<b>14</b>	228	250	<b>492</b>	0	0	0	0	0	0	0	0	<b>18</b>	<b>76</b>	0	<b>94</b>	<b>586</b>
05:30 PM	10	216	<b>265</b>	491	0	0	0	0	0	0	0	0	9	42	0	51	542
05:45 PM	14	198	247	459	0	<b>2</b>	0	<b>2</b>	0	<b>2</b>	0	<b>2</b>	12	41	0	53	516
Total Volume	48	876	997	1921	0	2	0	2	0	2	0	2	49	223	0	272	2197
% App. Total	2.5	45.6	51.9		0	100	0		0	100	0		18	82	0		
PHF	.857	.936	.941	.976	.000	.250	.000	.250	.000	.250	.000	.250	.681	.734	.000	.723	.937
Cars	45	860	966	1871	0	2	0	2	0	2	0	2	48	219	0	267	2142
% Cars	93.8	98.2	96.9	97.4	0	100	0	100	0	100	0	100	98.0	98.2	0	98.2	97.5
Heavy Vehicles	3	16	31	50	0	0	0	0	0	0	0	0	1	4	0	5	55
% Heavy Vehicles	6.3	1.8	3.1	2.6	0	0	0	0	0	0	0	0	2.0	1.8	0	1.8	2.5



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Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Albany Street From North			Traveler Street From East			Albany Street From South			Traveler Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
04:00 PM	2	12	8	0	0	0	0	0	0	0	0	0	22
04:15 PM	2	8	13	0	0	0	0	0	0	1	2	0	26
04:30 PM	0	4	12	0	0	0	0	0	0	2	2	0	20
04:45 PM	0	14	9	0	0	0	0	0	0	0	2	0	25
<b>Total</b>	<b>4</b>	<b>38</b>	<b>42</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>6</b>	<b>0</b>	<b>93</b>
05:00 PM	1	8	7	0	0	0	0	0	0	0	1	0	17
05:15 PM	1	4	10	0	0	0	0	0	0	1	1	0	17
05:30 PM	0	2	6	0	0	0	0	0	0	0	2	0	10
05:45 PM	1	2	8	0	0	0	0	0	0	0	0	0	11
<b>Total</b>	<b>3</b>	<b>16</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>55</b>
<b>Grand Total</b>	<b>7</b>	<b>54</b>	<b>73</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>10</b>	<b>0</b>	<b>148</b>
Apprch %	5.2	40.3	54.5	0	0	0	0	0	0	28.6	71.4	0	
Total %	4.7	36.5	49.3	0	0	0	0	0	0	2.7	6.8	0	

Start Time	Albany Street From North				Traveler Street From East				Albany Street From South				Traveler Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	2	12	8	22	0	0	0	0	0	0	0	0	0	0	0	0	22
04:15 PM	2	8	13	23	0	0	0	0	0	0	0	0	1	2	0	3	26
04:30 PM	0	4	12	16	0	0	0	0	0	0	0	0	2	2	0	4	20
04:45 PM	0	14	9	23	0	0	0	0	0	0	0	0	0	2	0	2	25
Total Volume	4	38	42	84	0	0	0	0	0	0	0	0	3	6	0	9	93
% App. Total	4.8	45.2	50		0	0	0		0	0	0		33.3	66.7	0		
PHF	.500	.679	.808	.913	.000	.000	.000	.000	.000	.000	.000	.000	.375	.750	.000	.563	.894



PRECISION  
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N/S: Albany Street  
E/W: Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 CCC  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Albany Street From North				Traveler Street From East				Albany Street From South				Traveler Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	1	2	0	0	0	1	0	0	0	2	0	0	0	2	8
04:15 PM	0	2	0	1	0	0	0	4	0	0	0	4	0	0	0	4	15
04:30 PM	0	0	0	4	0	0	0	3	0	0	1	3	1	1	0	3	16
04:45 PM	0	0	1	0	0	0	0	0	0	0	0	5	0	0	0	4	10
<b>Total</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>14</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>13</b>	<b>49</b>
05:00 PM	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	1	6
05:15 PM	0	0	0	0	0	0	0	3	0	0	0	6	0	2	0	2	13
05:30 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	2	6
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	2	5
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>7</b>	<b>30</b>
<b>Grand Total</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>26</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>20</b>	<b>79</b>
Apprch %	0	18.2	18.2	63.6	0	0	0	100	0	0	3.7	96.3	3.8	19.2	0	76.9	
Total %	0	2.5	2.5	8.9	0	0	0	19	0	0	1.3	32.9	1.3	6.3	0	25.3	

Start Time	Albany Street From North					Traveler Street From East					Albany Street From South					Traveler Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	1	2	3	0	0	0	1	1	0	0	0	2	2	0	0	0	2	2	8
04:15 PM	0	2	0	1	3	0	0	0	4	4	0	0	0	4	4	0	0	0	4	4	15
04:30 PM	0	0	0	4	4	0	0	0	3	3	0	0	1	3	4	1	1	0	3	5	16
04:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	5	5	0	0	0	4	4	10
Total Volume	0	2	2	7	11	0	0	0	8	8	0	0	1	14	15	1	1	0	13	15	49
% App. Total	0	18.2	18.2	63.6		0	0	0	100		0	0	6.7	93.3		6.7	6.7	0	86.7		
PHF	.000	.250	.500	.438	.688	.000	.000	.000	.500	.500	.000	.000	.250	.700	.750	.250	.250	.000	.813	.750	.766









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N/S: Albany Street  
E/W: East Berkeley Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 DDD  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Albany Street From North				East Berkeley Street From East				Albany Street From South				East Berkeley Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	3	0	0	0	2	0	0	0	9	0	1	0	2	17
04:15 PM	0	0	0	5	0	0	0	0	0	0	0	6	0	0	0	5	16
04:30 PM	1	1	0	3	0	0	0	3	0	0	0	12	0	1	0	2	23
04:45 PM	0	0	0	6	0	0	0	0	0	0	0	3	0	1	0	2	12
<b>Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>11</b>	<b>68</b>
05:00 PM	0	0	0	8	0	0	0	0	0	0	0	10	0	0	0	1	19
05:15 PM	0	0	0	1	0	0	0	1	0	0	0	8	0	1	0	1	12
05:30 PM	0	0	0	3	0	2	0	0	0	0	0	9	0	2	0	6	22
05:45 PM	0	0	0	5	0	1	0	1	0	0	0	13	0	0	0	1	21
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>9</b>	<b>74</b>
<b>Grand Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>34</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>70</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>20</b>	<b>142</b>
Apprch %	2.8	2.8	0	94.4	0	30	0	70	0	0	0	100	0	23.1	0	76.9	
Total %	0.7	0.7	0	23.9	0	2.1	0	4.9	0	0	0	49.3	0	4.2	0	14.1	

Start Time	Albany Street From North					East Berkeley Street From East					Albany Street From South					East Berkeley Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	<b>8</b>	<b>8</b>	0	0	0	0	0	0	0	0	10	10	0	0	0	1	1	19
05:15 PM	0	0	0	1	1	0	0	0	<b>1</b>	<b>1</b>	0	0	0	8	8	0	1	0	1	2	12
05:30 PM	0	0	0	3	3	0	<b>2</b>	0	0	<b>2</b>	0	0	0	9	9	0	<b>2</b>	0	<b>6</b>	<b>8</b>	<b>22</b>
05:45 PM	0	0	0	5	5	0	1	0	1	2	0	0	0	<b>13</b>	<b>13</b>	0	0	0	1	1	21
Total Volume	0	0	0	17	17	0	3	0	2	5	0	0	0	40	40	0	3	0	9	12	74
% App. Total	0	0	0	100		0	60	0	40		0	0	0	100		0	25	0	75		
PHF	.000	.000	.000	.531	.531	.000	.375	.000	.500	.625	.000	.000	.000	.769	.769	.000	.375	.000	.375	.375	.841



PRECISION  
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N/S: Harrison Avenue  
E/W: Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 EEE  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Harrison Avenue From North			Herald Street From East			Harrison Avenue From South			Herald Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
04:00 PM	0	49	28	0	0	0	25	0	0	60	276	0	438
04:15 PM	0	55	32	0	0	0	41	0	1	44	317	0	490
04:30 PM	0	36	37	0	0	0	45	0	0	53	283	0	454
04:45 PM	0	46	21	0	0	0	37	0	0	54	292	0	450
<b>Total</b>	<b>0</b>	<b>186</b>	<b>118</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>148</b>	<b>0</b>	<b>1</b>	<b>211</b>	<b>1168</b>	<b>0</b>	<b>1832</b>
05:00 PM	0	51	41	0	0	0	55	0	2	49	288	0	486
05:15 PM	0	36	39	0	0	0	34	0	1	72	320	0	502
05:30 PM	0	62	48	0	0	0	43	0	0	44	257	0	454
05:45 PM	0	46	35	0	0	0	21	0	1	50	299	0	452
<b>Total</b>	<b>0</b>	<b>195</b>	<b>163</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>153</b>	<b>0</b>	<b>4</b>	<b>215</b>	<b>1164</b>	<b>0</b>	<b>1894</b>
<b>Grand Total</b>	<b>0</b>	<b>381</b>	<b>281</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>301</b>	<b>0</b>	<b>5</b>	<b>426</b>	<b>2332</b>	<b>0</b>	<b>3726</b>
Apprch %	0	57.6	42.4	0	0	0	98.4	0	1.6	15.4	84.6	0	
Total %	0	10.2	7.5	0	0	0	8.1	0	0.1	11.4	62.6	0	
Cars	0	370	273	0	0	0	297	0	5	419	2267	0	3631
% Cars	0	97.1	97.2	0	0	0	98.7	0	100	98.4	97.2	0	97.5
Heavy Vehicles	0	11	8	0	0	0	4	0	0	7	65	0	95
% Heavy Vehicles	0	2.9	2.8	0	0	0	1.3	0	0	1.6	2.8	0	2.5

Start Time	Harrison Avenue From North				Herald Street From East				Harrison Avenue From South				Herald Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	51	41	92	0	0	0	0	<b>55</b>	0	<b>2</b>	<b>57</b>	49	288	0	337	486
05:15 PM	0	36	39	75	0	0	0	0	34	0	1	35	<b>72</b>	<b>320</b>	0	<b>392</b>	<b>502</b>
05:30 PM	0	<b>62</b>	<b>48</b>	<b>110</b>	0	0	0	0	43	0	0	43	44	257	0	301	454
05:45 PM	0	46	35	81	0	0	0	0	21	0	1	22	50	299	0	349	452
Total Volume	0	195	163	358	0	0	0	0	153	0	4	157	215	1164	0	1379	1894
% App. Total	0	54.5	45.5		0	0	0		97.5	0	2.5		15.6	84.4	0		
PHF	.000	.786	.849	.814	.000	.000	.000	.000	.695	.000	.500	.689	.747	.909	.000	.879	.943
Cars	0	190	156	346	0	0	0	0	153	0	4	157	212	1149	0	1361	1864
% Cars	0	97.4	95.7	96.6	0	0	0	0	100	0	100	100	98.6	98.7	0	98.7	98.4
Heavy Vehicles	0	5	7	12	0	0	0	0	0	0	0	0	3	15	0	18	30
% Heavy Vehicles	0	2.6	4.3	3.4	0	0	0	0	0	0	0	0	1.4	1.3	0	1.3	1.6



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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 EEE  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Harrison Avenue From North			Herald Street From East			Harrison Avenue From South			Herald Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
04:00 PM	0	1	0	0	0	0	1	0	0	1	12	0	15
04:15 PM	0	2	1	0	0	0	2	0	0	1	20	0	26
04:30 PM	0	2	0	0	0	0	0	0	0	2	10	0	14
04:45 PM	0	1	0	0	0	0	1	0	0	0	8	0	10
<b>Total</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>50</b>	<b>0</b>	<b>65</b>
05:00 PM	0	1	1	0	0	0	0	0	0	0	3	0	5
05:15 PM	0	1	0	0	0	0	0	0	0	1	6	0	8
05:30 PM	0	2	2	0	0	0	0	0	0	1	4	0	9
05:45 PM	0	1	4	0	0	0	0	0	0	1	2	0	8
<b>Total</b>	<b>0</b>	<b>5</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>15</b>	<b>0</b>	<b>30</b>
<b>Grand Total</b>	<b>0</b>	<b>11</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>65</b>	<b>0</b>	<b>95</b>
Apprch %	0	57.9	42.1	0	0	0	100	0	0	9.7	90.3	0	
Total %	0	11.6	8.4	0	0	0	4.2	0	0	7.4	68.4	0	

Start Time	Harrison Avenue From North				Herald Street From East				Harrison Avenue From South				Herald Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	1	0	1	0	0	0	0	1	0	0	1	1	12	0	13	15
04:15 PM	0	2	1	3	0	0	0	0	2	0	0	2	1	20	0	21	26
04:30 PM	0	2	0	2	0	0	0	0	0	0	0	0	2	10	0	12	14
04:45 PM	0	1	0	1	0	0	0	0	1	0	0	1	0	8	0	8	10
Total Volume	0	6	1	7	0	0	0	0	4	0	0	4	4	50	0	54	65
% App. Total	0	85.7	14.3		0	0	0		100	0	0		7.4	92.6	0		
PHF	.000	.750	.250	.583	.000	.000	.000	.000	.500	.000	.000	.500	.500	.625	.000	.643	.625



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File Name : 112441 EEE  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Harrison Avenue From North				Herald Street From East				Harrison Avenue From South				Herald Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	0	0	12	0	0	0	1	0	1	0	11	25
04:15 PM	0	1	0	1	0	0	0	16	0	0	0	0	0	0	0	12	30
04:30 PM	0	0	0	4	0	0	0	7	0	0	0	4	1	0	0	13	29
04:45 PM	0	1	0	0	0	0	0	6	0	1	0	3	0	0	0	11	22
<b>Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>47</b>	<b>106</b>
05:00 PM	0	2	0	0	0	0	0	13	0	0	0	1	0	0	0	18	34
05:15 PM	0	3	0	1	0	0	0	10	0	1	0	4	0	0	0	21	40
05:30 PM	0	0	0	0	0	0	0	7	0	0	0	1	1	0	0	11	20
05:45 PM	0	2	0	0	0	0	0	4	0	0	0	2	1	0	0	15	24
<b>Total</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>65</b>	<b>118</b>
<b>Grand Total</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>75</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>16</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>112</b>	<b>224</b>
Apprch %	0	60	0	40	0	0	0	100	0	11.1	0	88.9	2.6	0.9	0	96.6	
Total %	0	4	0	2.7	0	0	0	33.5	0	0.9	0	7.1	1.3	0.4	0	50	

Start Time	Harrison Avenue From North					Herald Street From East					Harrison Avenue From South					Herald Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	<b>4</b>	<b>4</b>	0	0	0	7	7	0	0	0	<b>4</b>	<b>4</b>	<b>1</b>	0	0	13	14	29
04:45 PM	0	1	0	0	1	0	0	0	6	6	0	<b>1</b>	0	3	4	0	0	0	11	11	22
05:00 PM	0	2	0	0	2	0	0	0	<b>13</b>	<b>13</b>	0	0	0	1	1	0	0	0	18	18	34
05:15 PM	0	<b>3</b>	0	1	4	0	0	0	10	10	0	1	0	4	<b>5</b>	0	0	0	<b>21</b>	<b>21</b>	<b>40</b>
Total Volume	0	6	0	5	11	0	0	0	36	36	0	2	0	12	14	1	0	0	63	64	125
% App. Total	0	54.5	0	45.5		0	0	0	100		0	14.3	0	85.7		1.6	0	0	98.4		
PHF	.000	.500	.000	.313	.688	.000	.000	.000	.692	.692	.000	.500	.000	.750	.700	.250	.000	.000	.750	.762	.781



PRECISION  
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N/S: Harrison Avenue  
E/W: Herald Driveway/Wm.Mullins Way  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 FFF  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Harrison Avenue From North				Herald Driveway From East			Harrison Avenue From South				Wm.Mullins Way From West			Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
04:00 PM	9	80	0	1	1	0	1	0	30	16	4	11	0	6	159
04:15 PM	11	89	0	1	0	1	0	0	40	14	4	12	1	6	179
04:30 PM	5	85	0	2	0	0	0	0	35	20	0	15	0	9	171
04:45 PM	9	87	1	1	1	0	1	0	25	17	0	15	0	8	165
Total	34	341	1	5	2	1	2	0	130	67	8	53	1	29	674
05:00 PM	14	91	0	0	2	0	0	0	32	18	1	26	0	13	197
05:15 PM	11	100	0	2	1	0	2	0	19	31	1	16	0	8	191
05:30 PM	13	90	0	0	2	1	0	0	37	23	3	18	0	5	192
05:45 PM	10	102	0	0	0	0	1	0	24	20	1	14	0	1	173
Total	48	383	0	2	5	1	3	0	112	92	6	74	0	27	753
Grand Total	82	724	1	7	7	2	5	0	242	159	14	127	1	56	1427
Apprch %	10.1	88.9	0.1	0.9	50	14.3	35.7	0	58.3	38.3	3.4	69	0.5	30.4	
Total %	5.7	50.7	0.1	0.5	0.5	0.1	0.4	0	17	11.1	1	8.9	0.1	3.9	
Cars	82	696	1	7	7	2	4	0	233	154	14	116	0	56	1372
% Cars	100	96.1	100	100	100	100	80	0	96.3	96.9	100	91.3	0	100	96.1
Heavy Vehicles	0	28	0	0	0	0	1	0	9	5	0	11	1	0	55
% Heavy Vehicles	0	3.9	0	0	0	0	20	0	3.7	3.1	0	8.7	100	0	3.9

Start Time	Harrison Avenue From North					Herald Driveway From East				Harrison Avenue From South				Wm.Mullins Way From West				Int. Total	
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left		App. Total
05:00 PM	14	91	0	0	105	2	0	0	2	0	32	18	1	51	26	0	13	39	197
05:15 PM	11	100	0	2	113	1	0	2	3	0	19	31	1	51	16	0	8	24	191
05:30 PM	13	90	0	0	103	2	1	0	3	0	37	23	3	63	18	0	5	23	192
05:45 PM	10	102	0	0	112	0	0	1	1	0	24	20	1	45	14	0	1	15	173
Total Volume	48	383	0	2	433	5	1	3	9	0	112	92	6	210	74	0	27	101	753
% App. Total	11.1	88.5	0	0.5		55.6	11.1	33.3		0	53.3	43.8	2.9		73.3	0	26.7		
PHF	.857	.939	.000	.250	.958	.625	.250	.375	.750	.000	.757	.742	.500	.833	.712	.000	.519	.647	.956
Cars	48	367	0	2	417	5	1	3	9	0	109	90	6	205	71	0	27	98	729
% Cars	100	95.8	0	100	96.3	100	100	100	100	0	97.3	97.8	100	97.6	95.9	0	100	97.0	96.8
Heavy Vehicles	0	16	0	0	16	0	0	0	0	0	3	2	0	5	3	0	0	3	24
% Heavy Vehicles	0	4.2	0	0	3.7	0	0	0	0	0	2.7	2.2	0	2.4	4.1	0	0	3.0	3.2

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:00 PM



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N/S: Harrison Avenue  
E/W: Herald Driveway/Wm.Mullins Way  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 FFF  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Harrison Avenue From North				Herald Driveway From East				Harrison Avenue From South				Wm.Mullins Way From West			Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left		
04:00 PM	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	3
04:15 PM	0	4	0	0	0	0	0	0	2	1	0	4	1	0	0	12
04:30 PM	0	5	0	0	0	0	0	0	0	1	0	1	0	0	0	7
04:45 PM	0	2	0	0	0	0	1	0	2	1	0	3	0	0	0	9
Total	0	12	0	0	0	0	1	0	6	3	0	8	1	0	0	31
05:00 PM	0	3	0	0	0	0	0	0	1	1	0	0	0	0	0	5
05:15 PM	0	5	0	0	0	0	0	0	1	0	0	1	0	0	0	7
05:30 PM	0	5	0	0	0	0	0	0	0	0	0	2	0	0	0	7
05:45 PM	0	3	0	0	0	0	0	0	1	1	0	0	0	0	0	5
Total	0	16	0	0	0	0	0	0	3	2	0	3	0	0	0	24
Grand Total	0	28	0	0	0	0	1	0	9	5	0	11	1	0	0	55
Apprch %	0	100	0	0	0	0	100	0	64.3	35.7	0	91.7	8.3	0	0	
Total %	0	50.9	0	0	0	0	1.8	0	16.4	9.1	0	20	1.8	0	0	

Start Time	Harrison Avenue From North					Herald Driveway From East				Harrison Avenue From South					Wm.Mullins Way From West				Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 04:15 PM																			
04:15 PM	0	4	0	0	4	0	0	0	0	0	2	1	0	3	4	1	0	5	12
04:30 PM	0	5	0	0	5	0	0	0	0	0	0	1	0	1	1	0	0	1	7
04:45 PM	0	2	0	0	2	0	0	1	1	0	2	1	0	3	3	0	0	3	9
05:00 PM	0	3	0	0	3	0	0	0	0	0	1	1	0	2	0	0	0	0	5
Total Volume	0	14	0	0	14	0	0	1	1	0	5	4	0	9	8	1	0	9	33
% App. Total	0	100	0	0		0	0	100		0	55.6	44.4	0		88.9	11.1	0		
PHF	.000	.700	.000	.000	.700	.000	.000	.250	.250	.000	.625	1.000	.000	.750	.500	.250	.000	.450	.688





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N/S: Harrison Street  
E/W: Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 GGG  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Harrison Street From North				Traveler Street From East			Harrison Street From South				Traveler Street From West			Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
04:00 PM	5	78	18	0	9	4	6	25	42	21	5	0	0	0	213
04:15 PM	4	69	36	0	4	5	3	20	56	14	4	0	0	0	215
04:30 PM	4	76	31	1	9	3	3	22	47	11	1	0	0	0	208
04:45 PM	3	71	32	1	6	3	1	23	38	14	1	0	0	0	193
Total	16	294	117	2	28	15	13	90	183	60	11	0	0	0	829
05:00 PM	2	90	31	2	6	5	8	33	44	17	4	0	0	0	242
05:15 PM	3	76	49	0	5	4	6	42	53	31	6	0	0	0	275
05:30 PM	6	78	35	2	5	4	5	33	55	17	5	0	0	0	245
05:45 PM	3	86	25	0	7	7	5	29	37	15	3	0	0	0	217
Total	14	330	140	4	23	20	24	137	189	80	18	0	0	0	979
Grand Total	30	624	257	6	51	35	37	227	372	140	29	0	0	0	1808
Apprch %	3.3	68	28	0.7	41.5	28.5	30.1	29.6	48.4	18.2	3.8	0	0	0	
Total %	1.7	34.5	14.2	0.3	2.8	1.9	2	12.6	20.6	7.7	1.6	0	0	0	
Cars	29	604	240	6	44	32	36	223	365	127	29	0	0	0	1735
% Cars	96.7	96.8	93.4	100	86.3	91.4	97.3	98.2	98.1	90.7	100	0	0	0	96
Heavy Vehicles	1	20	17	0	7	3	1	4	7	13	0	0	0	0	73
% Heavy Vehicles	3.3	3.2	6.6	0	13.7	8.6	2.7	1.8	1.9	9.3	0	0	0	0	4

Start Time	Harrison Street From North					Traveler Street From East				Harrison Street From South				Traveler Street From West				Int. Total	
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left		App. Total
05:00 PM	2	<b>90</b>	31	<b>2</b>	125	6	5	<b>8</b>	<b>19</b>	33	44	17	4	98	0	0	0	0	242
05:15 PM	3	76	<b>49</b>	0	<b>128</b>	5	4	6	15	<b>42</b>	53	<b>31</b>	<b>6</b>	<b>132</b>	0	0	0	0	<b>275</b>
05:30 PM	<b>6</b>	78	35	2	121	5	4	5	14	33	<b>55</b>	17	5	110	0	0	0	0	245
05:45 PM	3	86	25	0	114	<b>7</b>	<b>7</b>	5	19	29	37	15	3	84	0	0	0	0	217
Total Volume	14	330	140	4	488	23	20	24	67	137	189	80	18	424	0	0	0	0	979
% App. Total	2.9	67.6	28.7	0.8		34.3	29.9	35.8		32.3	44.6	18.9	4.2		0	0	0		
PHF	.583	.917	.714	.500	.953	.821	.714	.750	.882	.815	.859	.645	.750	.803	.000	.000	.000	.000	.890
Cars	14	323	133	4	474	20	18	23	61	134	188	74	18	414	0	0	0	0	949
% Cars	100	97.9	95.0	100	97.1	87.0	90.0	95.8	91.0	97.8	99.5	92.5	100	97.6	0	0	0	0	96.9
Heavy Vehicles	0	7	7	0	14	3	2	1	6	3	1	6	0	10	0	0	0	0	30
% Heavy Vehicles	0	2.1	5.0	0	2.9	13.0	10.0	4.2	9.0	2.2	0.5	7.5	0	2.4	0	0	0	0	3.1

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:00 PM





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File Name : 112441 GGG  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Harrison Street From North				Traveler Street From East			Harrison Street From South				Traveler Street From West			Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
04:00 PM	0	2	0	0	1	1	0	0	2	2	0	0	0	0	8
04:15 PM	1	3	4	0	2	0	0	1	1	2	0	0	0	0	14
04:30 PM	0	4	3	0	0	0	0	0	1	2	0	0	0	0	10
04:45 PM	0	4	3	0	1	0	0	0	2	1	0	0	0	0	11
Total	1	13	10	0	4	1	0	1	6	7	0	0	0	0	43
05:00 PM	0	1	1	0	1	2	0	0	0	3	0	0	0	0	8
05:15 PM	0	3	2	0	1	0	1	1	0	2	0	0	0	0	10
05:30 PM	0	1	3	0	0	0	0	2	0	1	0	0	0	0	7
05:45 PM	0	2	1	0	1	0	0	0	1	0	0	0	0	0	5
Total	0	7	7	0	3	2	1	3	1	6	0	0	0	0	30
Grand Total	1	20	17	0	7	3	1	4	7	13	0	0	0	0	73
Apprch %	2.6	52.6	44.7	0	63.6	27.3	9.1	16.7	29.2	54.2	0	0	0	0	
Total %	1.4	27.4	23.3	0	9.6	4.1	1.4	5.5	9.6	17.8	0	0	0	0	

Start Time	Harrison Street From North					Traveler Street From East				Harrison Street From South					Traveler Street From West				Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 04:00 PM																			
04:00 PM	0	2	0	0	2	1	1	0	2	0	2	2	0	4	0	0	0	0	8
04:15 PM	1	3	4	0	8	2	0	0	2	1	1	2	0	4	0	0	0	0	14
04:30 PM	0	4	3	0	7	0	0	0	0	0	1	2	0	3	0	0	0	0	10
04:45 PM	0	4	3	0	7	1	0	0	1	0	2	1	0	3	0	0	0	0	11
Total Volume	1	13	10	0	24	4	1	0	5	1	6	7	0	14	0	0	0	0	43
% App. Total	4.2	54.2	41.7	0		80	20	0		7.1	42.9	50	0		0	0	0		
PHF	.250	.813	.625	.000	.750	.500	.250	.000	.625	.250	.750	.875	.000	.875	.000	.000	.000	.000	.768



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File Name : 112441 GGG  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Harrison Street From North				Traveler Street From East				Harrison Street From South				Traveler Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	4	0	0	0	15	0	0	0	3	0	0	0	6	28
04:15 PM	0	0	0	5	0	0	0	10	0	0	0	2	0	0	0	8	25
04:30 PM	0	2	2	1	0	0	0	10	0	0	0	2	0	0	0	5	22
04:45 PM	0	0	0	4	0	0	0	8	0	1	0	4	0	0	0	4	21
<b>Total</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>96</b>
05:00 PM	0	2	0	2	0	0	0	9	0	0	0	3	0	0	0	12	28
05:15 PM	0	2	0	2	0	0	0	11	0	0	0	2	0	0	0	9	26
05:30 PM	0	1	0	2	0	0	0	8	0	0	0	1	0	0	0	12	24
05:45 PM	0	1	0	3	0	0	0	6	0	0	0	2	0	0	0	11	23
<b>Total</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>44</b>	<b>101</b>
<b>Grand Total</b>	<b>0</b>	<b>8</b>	<b>2</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>77</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>67</b>	<b>197</b>
Apprch %	0	24.2	6.1	69.7	0	0	0	100	0	5	0	95	0	0	0	100	
Total %	0	4.1	1	11.7	0	0	0	39.1	0	0.5	0	9.6	0	0	0	34	

Start Time	Harrison Street From North					Traveler Street From East					Harrison Street From South					Traveler Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	2	0	2	4	0	0	0	9	9	0	0	0	3	3	0	0	0	12	12	28
05:15 PM	0	2	0	2	4	0	0	0	11	11	0	0	0	2	2	0	0	0	9	9	26
05:30 PM	0	1	0	2	3	0	0	0	8	8	0	0	0	1	1	0	0	0	12	12	24
05:45 PM	0	1	0	3	4	0	0	0	6	6	0	0	0	2	2	0	0	0	11	11	23
Total Volume	0	6	0	9	15	0	0	0	34	34	0	0	0	8	8	0	0	0	44	44	101
% App. Total	0	40	0	60		0	0	0	100		0	0	0	100		0	0	0	100		
PHF	.000	.750	.000	.750	.938	.000	.000	.000	.773	.773	.000	.000	.000	.667	.667	.000	.000	.000	.917	.917	.902



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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 HHH  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Harrison Street From North				E. Berkeley Street From East			Harrison Street From South			E. Berkeley Street From West			Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
04:00 PM	22	68	0	0	35	119	50	1	58	8	0	0	0	361
04:15 PM	25	46	0	1	25	121	32	0	64	6	0	0	0	320
04:30 PM	28	56	0	0	28	113	33	0	51	14	0	0	0	323
04:45 PM	24	48	0	0	28	134	40	0	49	14	0	0	0	337
Total	99	218	0	1	116	487	155	1	222	42	0	0	0	1341
05:00 PM	34	64	0	0	19	144	41	0	70	19	0	0	0	391
05:15 PM	23	56	0	1	38	173	56	0	81	20	0	0	0	448
05:30 PM	25	55	0	1	37	181	46	0	67	19	0	0	0	431
05:45 PM	25	74	0	0	28	186	49	0	56	11	0	0	0	429
Total	107	249	0	2	122	684	192	0	274	69	0	0	0	1699
Grand Total	206	467	0	3	238	1171	347	1	496	111	0	0	0	3040
Apprch %	30.5	69.1	0	0.4	13.6	66.7	19.8	0.2	81.6	18.3	0	0	0	
Total %	6.8	15.4	0	0.1	7.8	38.5	11.4	0	16.3	3.7	0	0	0	
Cars	199	458	0	3	223	1113	340	1	491	111	0	0	0	2939
% Cars	96.6	98.1	0	100	93.7	95	98	100	99	100	0	0	0	96.7
Heavy Vehicles	7	9	0	0	15	58	7	0	5	0	0	0	0	101
% Heavy Vehicles	3.4	1.9	0	0	6.3	5	2	0	1	0	0	0	0	3.3

Start Time	Harrison Street From North					E. Berkeley Street From East				Harrison Street From South				E. Berkeley Street From West				Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
05:00 PM	<b>34</b>	64	0	0	98	19	144	41	204	0	70	19	89	0	0	0	0	391
05:15 PM	23	56	0	<b>1</b>	80	<b>38</b>	173	<b>56</b>	<b>267</b>	0	<b>81</b>	<b>20</b>	<b>101</b>	0	0	0	0	<b>448</b>
05:30 PM	25	55	0	1	81	37	181	46	264	0	67	19	86	0	0	0	0	431
05:45 PM	25	<b>74</b>	0	0	<b>99</b>	28	<b>186</b>	49	263	0	56	11	67	0	0	0	0	429
Total Volume	107	249	0	2	358	122	684	192	998	0	274	69	343	0	0	0	0	1699
% App. Total	29.9	69.6	0	0.6		12.2	68.5	19.2		0	79.9	20.1		0	0	0		
PHF	.787	.841	.000	.500	.904	.803	.919	.857	.934	.000	.846	.863	.849	.000	.000	.000	.000	.948
Cars	106	245	0	2	353	115	658	190	963	0	272	69	341	0	0	0	0	1657
% Cars	99.1	98.4	0	100	98.6	94.3	96.2	99.0	96.5	0	99.3	100	99.4	0	0	0	0	97.5
Heavy Vehicles	1	4	0	0	5	7	26	2	35	0	2	0	2	0	0	0	0	42
% Heavy Vehicles	0.9	1.6	0	0	1.4	5.7	3.8	1.0	3.5	0	0.7	0	0.6	0	0	0	0	2.5

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:00 PM





PRECISION  
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N/S: Harrison Street  
E/W: E. Berkeley Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 HHH  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Harrison Street From North				E. Berkeley Street From East				Harrison Street From South				E. Berkeley Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	22	0	0	0	11	0	0	0	20	0	0	0	12	65
04:15 PM	0	0	0	4	0	1	0	8	0	0	1	11	0	0	0	9	34
04:30 PM	0	2	0	12	0	0	0	3	1	0	0	26	0	0	0	5	49
04:45 PM	0	0	1	9	0	0	0	4	0	1	0	18	0	0	0	6	39
<b>Total</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>47</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>26</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>75</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>187</b>
05:00 PM	1	0	0	17	0	0	0	3	0	0	0	23	0	0	0	8	52
05:15 PM	1	2	0	7	0	0	0	3	2	0	1	13	0	0	0	7	36
05:30 PM	0	0	1	7	0	2	0	1	0	0	0	20	0	0	0	4	35
05:45 PM	0	2	0	3	0	1	0	4	0	0	0	30	0	0	0	11	51
<b>Total</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>34</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>11</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>86</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>174</b>
<b>Grand Total</b>	<b>2</b>	<b>6</b>	<b>2</b>	<b>81</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>37</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>161</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>62</b>	<b>361</b>
Apprch %	2.2	6.6	2.2	89	0	9.8	0	90.2	1.8	0.6	1.2	96.4	0	0	0	100	
Total %	0.6	1.7	0.6	22.4	0	1.1	0	10.2	0.8	0.3	0.6	44.6	0	0	0	17.2	

Start Time	Harrison Street From North					E. Berkeley Street From East					Harrison Street From South					E. Berkeley Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	<b>22</b>	<b>22</b>	0	0	0	<b>11</b>	<b>11</b>	0	0	0	20	20	0	0	0	<b>12</b>	<b>12</b>	<b>65</b>
04:15 PM	0	0	0	4	4	0	<b>1</b>	0	8	9	0	0	<b>1</b>	11	12	0	0	0	9	9	34
04:30 PM	0	<b>2</b>	0	12	14	0	0	0	3	3	<b>1</b>	0	0	<b>26</b>	<b>27</b>	0	0	0	5	5	49
04:45 PM	0	0	<b>1</b>	9	10	0	0	0	4	4	0	<b>1</b>	0	<b>18</b>	<b>19</b>	0	0	0	6	6	39
Total Volume	0	2	1	47	50	0	1	0	26	27	1	1	1	75	78	0	0	0	32	32	187
% App. Total	0	4	2	94		0	3.7	0	96.3		1.3	1.3	1.3	96.2		0	0	0	100		
PHF	.000	.250	.250	.534	.568	.000	.250	.000	.591	.614	.250	.250	.250	.721	.722	.000	.000	.000	.667	.667	.719



PRECISION  
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INDUSTRIES, LLC

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E/W: Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 III  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Washington Street From North			Herald Street From East			Washington Street From South			Herald Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
04:00 PM	0	5	2	0	0	0	20	104	0	1	283	15	430
04:15 PM	0	6	3	0	0	0	19	97	0	4	336	22	487
04:30 PM	0	3	2	0	0	0	27	105	0	1	309	7	454
04:45 PM	0	4	0	0	0	0	27	104	0	0	326	23	484
Total	0	18	7	0	0	0	93	410	0	6	1254	67	1855
05:00 PM	0	5	0	0	0	0	21	132	0	0	308	19	485
05:15 PM	0	4	0	0	0	0	20	142	0	1	375	20	562
05:30 PM	0	4	0	0	0	0	12	145	0	0	295	15	471
05:45 PM	0	4	0	0	0	0	16	107	0	0	318	11	456
Total	0	17	0	0	0	0	69	526	0	1	1296	65	1974
Grand Total	0	35	7	0	0	0	162	936	0	7	2550	132	3829
Apprch %	0	83.3	16.7	0	0	0	14.8	85.2	0	0.3	94.8	4.9	
Total %	0	0.9	0.2	0	0	0	4.2	24.4	0	0.2	66.6	3.4	
Cars	0	6	7	0	0	0	157	876	0	7	2474	132	3659
% Cars	0	17.1	100	0	0	0	96.9	93.6	0	100	97	100	95.6
Heavy Vehicles	0	29	0	0	0	0	5	60	0	0	76	0	170
% Heavy Vehicles	0	82.9	0	0	0	0	3.1	6.4	0	0	3	0	4.4

Start Time	Washington Street From North				Herald Street From East				Washington Street From South				Herald Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	4	0	4	0	0	0	0	<b>27</b>	104	0	131	0	326	<b>23</b>	349	484
05:00 PM	0	<b>5</b>	0	<b>5</b>	0	0	0	0	21	132	0	153	0	308	19	327	485
05:15 PM	0	4	0	4	0	0	0	0	20	142	0	<b>162</b>	<b>1</b>	<b>375</b>	20	<b>396</b>	<b>562</b>
05:30 PM	0	4	0	4	0	0	0	0	12	<b>145</b>	0	157	0	295	15	310	471
Total Volume	0	17	0	17	0	0	0	0	80	523	0	603	1	1304	77	1382	2002
% App. Total	0	100	0		0	0	0		13.3	86.7	0		0.1	94.4	5.6		
PHF	.000	.850	.000	.850	.000	.000	.000	.000	.741	.902	.000	.931	.250	.869	.837	.872	.891
Cars	0	5	0	5	0	0	0	0	76	493	0	569	1	1278	77	1356	1930
% Cars	0	29.4	0	29.4	0	0	0	0	95.0	94.3	0	94.4	100	98.0	100	98.1	96.4
Heavy Vehicles	0	12	0	12	0	0	0	0	4	30	0	34	0	26	0	26	72
% Heavy Vehicles	0	70.6	0	70.6	0	0	0	0	5.0	5.7	0	5.6	0	2.0	0	1.9	3.6



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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 III  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Washington Street From North			Herald Street From East			Washington Street From South			Herald Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
04:00 PM	0	5	0	0	0	0	0	10	0	0	15	0	30
04:15 PM	0	5	0	0	0	0	1	5	0	0	22	0	33
04:30 PM	0	3	0	0	0	0	0	9	0	0	10	0	22
04:45 PM	0	4	0	0	0	0	2	7	0	0	9	0	22
Total	0	17	0	0	0	0	3	31	0	0	56	0	107
05:00 PM	0	3	0	0	0	0	1	10	0	0	3	0	17
05:15 PM	0	1	0	0	0	0	1	7	0	0	8	0	17
05:30 PM	0	4	0	0	0	0	0	6	0	0	6	0	16
05:45 PM	0	4	0	0	0	0	0	6	0	0	3	0	13
Total	0	12	0	0	0	0	2	29	0	0	20	0	63
Grand Total	0	29	0	0	0	0	5	60	0	0	76	0	170
Apprch %	0	100	0	0	0	0	7.7	92.3	0	0	100	0	
Total %	0	17.1	0	0	0	0	2.9	35.3	0	0	44.7	0	

Start Time	Washington Street From North				Herald Street From East				Washington Street From South				Herald Street From West				Int. Total	
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total		
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 04:00 PM																		
04:00 PM	0	5	0	5	0	0	0	0	0	10	0	10	0	15	0	15	30	
04:15 PM	0	5	0	5	0	0	0	0	0	1	5	6	0	22	0	22	33	
04:30 PM	0	3	0	3	0	0	0	0	0	0	9	9	0	10	0	10	22	
04:45 PM	0	4	0	4	0	0	0	0	0	2	7	9	0	9	0	9	22	
Total Volume	0	17	0	17	0	0	0	0	0	3	31	34	0	56	0	56	107	
% App. Total	0	100	0		0	0	0			8.8	91.2	0		0	100	0		
PHF	.000	.850	.000	.850	.000	.000	.000	.000	.000	.375	.775	.000	.850	.000	.636	.000	.636	.811



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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 III  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Washington Street From North				Herald Street From East				Washington Street From South				Herald Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	4	0	0	0	21	0	0	0	6	0	0	0	29	60
04:15 PM	0	0	0	1	0	0	0	17	0	0	0	9	0	0	0	33	60
04:30 PM	0	0	0	0	0	0	0	20	0	0	0	3	0	0	0	22	45
04:45 PM	0	1	0	1	0	0	0	30	0	0	0	2	0	0	0	22	56
Total	0	1	0	6	0	0	0	88	0	0	0	20	0	0	0	106	221
05:00 PM	0	2	0	1	0	0	0	29	0	0	0	7	0	0	0	46	85
05:15 PM	0	2	0	0	0	0	0	16	0	0	0	9	0	0	0	34	61
05:30 PM	0	0	0	0	0	0	0	15	0	0	0	5	0	0	0	31	51
05:45 PM	0	1	0	1	0	0	0	18	0	1	0	2	0	0	0	27	50
Total	0	5	0	2	0	0	0	78	0	1	0	23	0	0	0	138	247
Grand Total	0	6	0	8	0	0	0	166	0	1	0	43	0	0	0	244	468
Apprch %	0	42.9	0	57.1	0	0	0	100	0	2.3	0	97.7	0	0	0	100	
Total %	0	1.3	0	1.7	0	0	0	35.5	0	0.2	0	9.2	0	0	0	52.1	

Start Time	Washington Street From North					Herald Street From East					Washington Street From South					Herald Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	1	0	1	2	0	0	0	30	30	0	0	0	2	2	0	0	0	22	22	56
05:00 PM	0	2	0	1	3	0	0	0	29	29	0	0	0	7	7	0	0	0	46	46	85
05:15 PM	0	2	0	0	2	0	0	0	16	16	0	0	0	9	9	0	0	0	34	34	61
05:30 PM	0	0	0	0	0	0	0	0	15	15	0	0	0	5	5	0	0	0	31	31	51
Total Volume	0	5	0	2	7	0	0	0	90	90	0	0	0	23	23	0	0	0	133	133	253
% App. Total	0	71.4	0	28.6		0	0	0	100		0	0	0	100		0	0	0	100		
PHF	.000	.625	.000	.500	.583	.000	.000	.000	.750	.750	.000	.000	.000	.639	.639	.000	.000	.000	.723	.723	.744





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N/NE/S: I-93 NB/ I-90 WB/ Frontage Rd NB  
E/W: W. Broadway Street/ Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 JJJ  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	I-93 NB Ramp From North				West Broadway Street From East					Frontage Road NB From South				Traveler Street From West				I-90 Ramps From Northwest				Int. Total
	Hard Right	Right	Thru	Left	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	
04:00 PM	0	0	0	0	106	43	0	0	1	8	143	98	0	0	153	63	8	0	0	0	0	623
04:15 PM	0	0	0	0	116	49	0	0	0	9	132	60	0	0	179	60	12	0	0	0	0	617
04:30 PM	0	0	0	0	108	63	0	0	0	13	134	56	0	0	213	51	7	0	0	0	0	645
04:45 PM	0	0	0	0	130	47	0	0	0	3	110	61	0	0	201	51	12	0	0	0	0	615
Total	0	0	0	0	460	202	0	0	1	33	519	275	0	0	746	225	39	0	0	0	0	2500
05:00 PM	0	0	0	0	111	54	0	0	1	17	174	83	0	0	207	72	19	0	0	0	0	738
05:15 PM	0	0	0	0	119	76	0	0	2	13	190	76	0	0	225	66	17	0	0	0	0	784
05:30 PM	0	0	0	0	121	61	0	0	1	16	210	79	0	0	241	49	12	0	0	0	0	790
05:45 PM	0	0	0	0	118	49	2	0	0	6	137	59	0	0	229	57	14	0	0	0	0	671
Total	0	0	0	0	469	240	2	0	4	52	711	297	0	0	902	244	62	0	0	0	0	2983
Grand Total	0	0	0	0	929	442	2	0	5	85	1230	572	0	0	1648	469	101	0	0	0	0	5483
Apprch %	0	0	0	0	67.4	32.1	0.1	0	0.4	4.5	65.2	30.3	0	0	74.3	21.1	4.6	0	0	0	0	
Total %	0	0	0	0	16.9	8.1	0	0	0.1	1.6	22.4	10.4	0	0	30.1	8.6	1.8	0	0	0	0	
Cars	0	0	0	0	910	422	2	0	5	76	1157	548	0	0	1580	456	100	0	0	0	0	5256
% Cars	0	0	0	0	98	95.5	100	0	100	89.4	94.1	95.8	0	0	95.9	97.2	99	0	0	0	0	95.9
Heavy Vehicles	0	0	0	0	19	20	0	0	0	9	73	24	0	0	68	13	1	0	0	0	0	227
% Heavy Vehicles	0	0	0	0	2	4.5	0	0	0	10.6	5.9	4.2	0	0	4.1	2.8	1	0	0	0	0	4.1

Start Time	I-93 NB Ramp From North					West Broadway Street From East					Frontage Road NB From South					Traveler Street From West					I-90 Ramps From Northwest					Int. Total	
	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left		App. Total
05:00 PM	0	0	0	0	0	111	54	0	0	1	166	17	174	83	0	274	0	207	72	19	298	0	0	0	0	0	738
05:15 PM	0	0	0	0	0	119	76	0	0	2	197	13	190	76	0	279	0	225	66	17	308	0	0	0	0	0	784
05:30 PM	0	0	0	0	0	121	61	0	0	1	183	16	210	79	0	305	0	241	49	12	302	0	0	0	0	0	790
05:45 PM	0	0	0	0	0	118	49	2	0	0	169	6	137	59	0	202	0	229	57	14	300	0	0	0	0	0	671
Total Volume	0	0	0	0	0	469	240	2	0	4	715	52	711	297	0	1060	0	902	244	62	1208	0	0	0	0	0	2983
% App. Total	0	0	0	0	0	65.6	33.6	0.3	0	0.6	4.9	67.1	28	0	0	74.7	20.2	5.1	0	0	0	0	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.969	.789	.250	.000	.500	.907	.765	.846	.895	.000	.869	.000	.936	.847	.816	.981	.000	.000	.000	.000	.000	.944
Cars	0	0	0	0	0	460	230	2	0	4	696	45	673	285	0	1003	0	873	236	62	1171	0	0	0	0	0	2870
% Cars	0	0	0	0	0	98.1	95.8	100	0	100	97.3	86.5	94.7	96.0	0	94.6	0	96.8	96.7	100	96.9	0	0	0	0	0	96.2
Heavy Vehicles	0	0	0	0	0	9	10	0	0	0	19	7	38	12	0	57	0	29	8	0	37	0	0	0	0	0	113
% Heavy Vehicles	0	0	0	0	0	1.9	4.2	0	0	0	2.7	13.5	5.3	4.0	0	5.4	0	3.2	3.3	0	3.1	0	0	0	0	0	3.8

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



PRECISION  
D A T A  
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N/NE/S: I-93 NB/ I-90 WB/ Frontage Rd NB  
E/W: W. Broadway Street/ Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 JJ  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	I-93 NB Ramp From North				West Broadway Street From East					Frontage Road NB From South				Traveler Street From West				I-90 Ramps From Northwest				Int. Total
	Hard Right	Right	Thru	Left	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	
04:00 PM	0	0	0	0	3	4	0	0	0	1	9	3	0	0	7	0	0	0	0	0	0	27
04:15 PM	0	0	0	0	2	3	0	0	0	0	7	2	0	0	13	1	0	0	0	0	0	28
04:30 PM	0	0	0	0	3	1	0	0	0	1	11	4	0	0	12	2	0	0	0	0	0	34
04:45 PM	0	0	0	0	2	2	0	0	0	0	8	3	0	0	7	2	1	0	0	0	0	25
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>35</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>39</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>114</b>
05:00 PM	0	0	0	0	2	3	0	0	0	2	15	3	0	0	8	0	0	0	0	0	0	33
05:15 PM	0	0	0	0	2	5	0	0	0	3	4	2	0	0	7	3	0	0	0	0	0	26
05:30 PM	0	0	0	0	3	0	0	0	0	1	11	3	0	0	4	3	0	0	0	0	0	25
05:45 PM	0	0	0	0	2	2	0	0	0	1	8	4	0	0	10	2	0	0	0	0	0	29
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>38</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>113</b>
<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>73</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>68</b>	<b>13</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>227</b>
Apprch %	0	0	0	0	48.7	51.3	0	0	0	8.5	68.9	22.6	0	0	82.9	15.9	1.2	0	0	0	0	
Total %	0	0	0	0	8.4	8.8	0	0	0	4	32.2	10.6	0	0	30	5.7	0.4	0	0	0	0	

Start Time	I-93 NB Ramp From North					West Broadway Street From East					Frontage Road NB From South					Traveler Street From West					I-90 Ramps From Northwest					Int. Total	
	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left		App. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 04:15 PM																											
04:15 PM	0	0	0	0	0	2	3	0	0	0	5	0	7	2	0	9	0	13	1	0	14	0	0	0	0	0	28
04:30 PM	0	0	0	0	0	3	1	0	0	0	4	1	11	4	0	16	0	12	2	0	14	0	0	0	0	0	34
04:45 PM	0	0	0	0	0	2	2	0	0	0	4	0	8	3	0	11	0	7	2	1	10	0	0	0	0	0	25
05:00 PM	0	0	0	0	0	2	3	0	0	0	5	2	15	3	0	20	0	8	0	0	8	0	0	0	0	0	33
Total Volume	0	0	0	0	0	9	9	0	0	0	18	3	41	12	0	56	0	40	5	1	46	0	0	0	0	0	120
% App. Total	0	0	0	0	0	50	50	0	0	0	5.4	73.2	21.4	0	0	87	10.9	2.2	0	0	0	0	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.750	.750	.000	.000	.000	.900	.375	.683	.750	.000	.700	.000	.769	.625	.250	.821	.000	.000	.000	.000	.000	.882



PRECISION  
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N/NE/S: I-93 NB/ I-90 WB/ Frontage Rd NB  
E/W: W. Broadway Street/ Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 JJJ  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	I-93 NB Ramp From North					West Broadway Street From East					Frontage Road NB From South					Traveler Street From West					I-90 Ramps From Northwest					Int. Total					
	Hard Right	Right	Thru	Left	Peds	Right	Bear Right	Thru	Left	Peds	Right	Thru	Bear Left	Left	Peds	Right	Thru	Left	Hard Left	Peds	Hard Right	Bear Right	Bear Left	Hard Left	Peds						
04:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6
04:15 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
04:30 PM	0	0	0	0	1	0	0	1	0	1	0	0	0	0	6	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	12
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	10
<b>Total</b>	0	0	0	0	5	0	0	1	0	1	0	0	0	0	23	0	4	0	0	2	0	0	0	0	0	0	0	0	0	0	36
05:00 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	11
05:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
<b>Total</b>	0	0	0	0	3	0	0	0	0	0	0	0	0	0	20	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	25
<b>Grand Total</b>	0	0	0	0	8	0	0	1	0	1	0	0	0	0	43	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	61
<b>Apprch %</b>	0	0	0	0	100	0	0	50	0	50	0	0	0	0	100	0	75	0	0	25	0	0	0	0	0	0	0	0	0	0	
<b>Total %</b>	0	0	0	0	13.1	0	0	1.6	0	1.6	0	0	0	0	70.5	0	9.8	0	0	3.3	0	0	0	0	0	0	0	0	0	0	

Start Time	I-93 NB Ramp From North						West Broadway Street From East						Frontage Road NB From South						Traveler Street From West						I-90 Ramps From Northwest						Int. Total							
	Hard Right	Right	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Left	Peds	App. Total	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total								
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																																						
Peak Hour for Entire Intersection Begins at 04:30 PM																																						
04:30 PM	0	0	0	0	1	1	0	0	1	0	1	2	0	0	0	0	6	6	0	1	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	12
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	10	
05:00 PM	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	11	
<b>Total Volume</b>	0	0	0	0	3	3	0	0	1	0	1	2	0	0	0	0	28	28	0	4	0	0	2	6	0	0	0	0	0	0	0	0	0	0	0	0	39	
<b>% App. Total</b>	0	0	0	0	100	0	0	50	0	50	0	0	0	0	100	0	66.7	0	0	33.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<b>PHF</b>	.000	.000	.000	.000	.375	.375	.000	.000	.250	.000	.250	.250	.000	.000	.000	.000	.700	.700	.000	.500	.000	.000	.250	.500	.000	.000	.000	.000	.000	.000	.000	.000	.813					



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N/S: Frontage Road NB  
E/W: W. 4th Street/ East Berkeley Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 KKK  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Frontage Road NB From North			West 4th Street From East			Frontage Road NB From South				East Berkeley Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
04:00 PM	0	0	0	10	86	0	71	168	60	15	0	0	0	410
04:15 PM	0	0	0	16	109	0	60	195	72	23	0	0	0	475
04:30 PM	0	0	0	19	113	0	73	169	59	12	0	0	0	445
04:45 PM	0	0	0	14	125	0	67	163	55	12	0	0	0	436
Total	0	0	0	59	433	0	271	695	246	62	0	0	0	1766
05:00 PM	0	0	0	20	129	0	91	221	61	9	0	0	0	531
05:15 PM	0	0	0	19	150	0	96	275	93	15	0	0	0	648
05:30 PM	0	0	0	20	168	0	56	254	85	22	0	0	0	605
05:45 PM	0	0	0	14	148	0	49	195	74	19	0	0	0	499
Total	0	0	0	73	595	0	292	945	313	65	0	0	0	2283
Grand Total	0	0	0	132	1028	0	563	1640	559	127	0	0	0	4049
Apprch %	0	0	0	11.4	88.6	0	19.5	56.8	19.3	4.4	0	0	0	
Total %	0	0	0	3.3	25.4	0	13.9	40.5	13.8	3.1	0	0	0	
Cars	0	0	0	124	972	0	539	1556	534	116	0	0	0	3841
% Cars	0	0	0	93.9	94.6	0	95.7	94.9	95.5	91.3	0	0	0	94.9
Heavy Vehicles	0	0	0	8	56	0	24	84	25	11	0	0	0	208
% Heavy Vehicles	0	0	0	6.1	5.4	0	4.3	5.1	4.5	8.7	0	0	0	5.1

Start Time	Frontage Road NB From North				West 4th Street From East				Frontage Road NB From South					East Berkeley Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 05:00 PM																		
05:00 PM	0	0	0	0	20	129	0	149	91	221	61	9	382	0	0	0	0	531
05:15 PM	0	0	0	0	19	150	0	169	96	275	93	15	479	0	0	0	0	648
05:30 PM	0	0	0	0	20	168	0	188	56	254	85	22	417	0	0	0	0	605
05:45 PM	0	0	0	0	14	148	0	162	49	195	74	19	337	0	0	0	0	499
Total Volume	0	0	0	0	73	595	0	668	292	945	313	65	1615	0	0	0	0	2283
% App. Total	0	0	0	0	10.9	89.1	0		18.1	58.5	19.4	4		0	0	0		
PHF	.000	.000	.000	.000	.913	.885	.000	.888	.760	.859	.841	.739	.843	.000	.000	.000	.000	.881
Cars	0	0	0	0	68	572	0	640	281	901	303	56	1541	0	0	0	0	2181
% Cars	0	0	0	0	93.2	96.1	0	95.8	96.2	95.3	96.8	86.2	95.4	0	0	0	0	95.5
Heavy Vehicles	0	0	0	0	5	23	0	28	11	44	10	9	74	0	0	0	0	102
% Heavy Vehicles	0	0	0	0	6.8	3.9	0	4.2	3.8	4.7	3.2	13.8	4.6	0	0	0	0	4.5



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N/S: Frontage Road NB  
E/W: W. 4th Street/ East Berkeley Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 KKK  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Frontage Road NB From North			West 4th Street From East			Frontage Road NB From South				East Berkeley Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
04:00 PM	0	0	0	1	7	0	6	8	5	1	0	0	0	28
04:15 PM	0	0	0	0	11	0	1	11	4	0	0	0	0	27
04:30 PM	0	0	0	2	9	0	5	9	6	0	0	0	0	31
04:45 PM	0	0	0	0	6	0	1	12	0	1	0	0	0	20
Total	0	0	0	3	33	0	13	40	15	2	0	0	0	106
05:00 PM	0	0	0	2	7	0	2	16	3	2	0	0	0	32
05:15 PM	0	0	0	0	4	0	6	8	5	1	0	0	0	24
05:30 PM	0	0	0	1	7	0	1	10	0	1	0	0	0	20
05:45 PM	0	0	0	2	5	0	2	10	2	5	0	0	0	26
Total	0	0	0	5	23	0	11	44	10	9	0	0	0	102
Grand Total	0	0	0	8	56	0	24	84	25	11	0	0	0	208
Apprch %	0	0	0	12.5	87.5	0	16.7	58.3	17.4	7.6	0	0	0	
Total %	0	0	0	3.8	26.9	0	11.5	40.4	12	5.3	0	0	0	

Start Time	Frontage Road NB From North				West 4th Street From East				Frontage Road NB From South					East Berkeley Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 04:15 PM																		
04:15 PM	0	0	0	0	0	<b>11</b>	0	<b>11</b>	1	11	4	0	16	0	0	0	0	27
04:30 PM	0	0	0	0	<b>2</b>	9	0	11	<b>5</b>	9	<b>6</b>	0	20	0	0	0	0	31
04:45 PM	0	0	0	0	0	6	0	6	1	12	0	1	14	0	0	0	0	20
05:00 PM	0	0	0	0	2	7	0	9	2	<b>16</b>	3	<b>2</b>	<b>23</b>	0	0	0	0	<b>32</b>
Total Volume	0	0	0	0	4	33	0	37	9	48	13	3	73	0	0	0	0	110
% App. Total	0	0	0	0	10.8	89.2	0		12.3	65.8	17.8	4.1		0	0	0		
PHF	.000	.000	.000	.000	.500	.750	.000	.841	.450	.750	.542	.375	.793	.000	.000	.000	.000	.859



PRECISION  
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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 KKK  
Site Code : 10995.00  
Start Date : 2/15/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Frontage Road NB From North				West 4th Street From East				Frontage Road NB From South				East Berkeley Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	2	0	0	0	2	0	0	0	8	0	0	0	0	12
04:15 PM	0	0	0	5	0	1	0	2	0	0	0	18	0	1	0	0	27
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	11	0	1	0	0	12
04:45 PM	0	0	0	3	1	0	0	1	0	0	0	9	0	1	0	0	15
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>46</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>66</b>
05:00 PM	0	0	0	6	0	0	0	0	0	0	0	14	0	0	0	0	20
05:15 PM	0	0	0	3	0	0	0	0	0	0	0	14	0	1	0	0	18
05:30 PM	0	0	0	2	0	2	0	0	0	0	0	13	0	1	0	0	18
05:45 PM	0	0	0	2	0	0	0	1	0	0	0	19	0	1	0	0	23
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>60</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>79</b>
<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>106</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>145</b>
Apprch %	0	0	0	100	10	30	0	60	0	0	0	100	0	100	0	0	
Total %	0	0	0	15.9	0.7	2.1	0	4.1	0	0	0	73.1	0	4.1	0	0	

Start Time	Frontage Road NB From North					West 4th Street From East					Frontage Road NB From South					East Berkeley Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	<b>6</b>	<b>6</b>	0	0	0	0	0	0	0	0	14	14	0	0	0	0	0	20
05:15 PM	0	0	0	3	3	0	0	0	0	0	0	0	0	14	14	0	<b>1</b>	0	0	<b>1</b>	18
05:30 PM	0	0	0	2	2	0	<b>2</b>	0	0	<b>2</b>	0	0	0	13	13	0	1	0	0	1	18
05:45 PM	0	0	0	2	2	0	0	0	<b>1</b>	<b>1</b>	0	0	0	<b>19</b>	<b>19</b>	0	1	0	0	1	<b>23</b>
Total Volume	0	0	0	13	13	0	2	0	1	3	0	0	0	60	60	0	3	0	0	3	79
% App. Total	0	0	0	100		0	66.7	0	33.3		0	0	0	100		0	100	0	0		
PHF	.000	.000	.000	.542	.542	.000	.250	.000	.250	.375	.000	.000	.000	.789	.789	.000	.750	.000	.000	.750	.859



PRECISION  
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N/S/SW: Albany Street/Boston Herald Dr.  
E/W: I-93 SB Onramp/Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 A  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Albany Street From North				I-93 SB Onramp From East				Albany Street From South				Boston Herald Driveway From Southwest				Herald Street From West				Int. Total
	Right	Bear Right	Thru	Left	Right	Thru	Bear Left	Left	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	Hard Right	Right	Thru	Left	
11:00 AM	0	0	160	42	0	0	0	0	0	0	0	0	0	0	0	0	0	94	104	0	400
11:15 AM	0	1	132	43	0	0	0	0	0	0	0	0	0	0	0	0	0	102	102	0	380
11:30 AM	0	0	140	63	0	0	0	0	0	0	0	0	0	0	0	0	0	86	94	0	383
11:45 AM	0	0	131	47	0	0	0	0	0	0	0	0	0	0	0	0	0	104	104	0	386
<b>Total</b>	0	1	563	195	0	0	0	0	0	0	0	0	0	0	0	0	0	386	404	0	1549
12:00 PM	0	0	145	48	0	0	0	0	0	0	0	0	0	0	0	0	0	91	114	0	398
12:15 PM	0	1	154	59	0	0	0	0	0	0	0	0	0	1	0	0	0	88	92	0	395
12:30 PM	0	0	154	62	0	0	0	0	0	0	0	0	0	0	0	0	0	102	91	0	409
12:45 PM	0	0	163	45	0	0	0	0	0	0	0	0	0	0	0	0	0	117	98	0	423
<b>Total</b>	0	1	616	214	0	0	0	0	0	0	0	0	0	1	0	0	0	398	395	0	1625
01:00 PM	0	0	136	64	0	0	0	0	0	0	0	0	0	0	0	0	0	107	99	0	406
01:15 PM	0	0	132	50	0	0	0	0	0	0	0	0	0	0	0	0	0	111	116	0	409
01:30 PM	0	0	129	61	0	0	0	0	0	0	0	0	0	0	0	0	0	96	128	0	414
01:45 PM	0	0	127	55	0	0	0	0	0	0	0	0	0	0	0	0	0	109	120	0	411
<b>Total</b>	0	0	524	230	0	0	0	0	0	0	0	0	0	0	0	0	0	423	463	0	1640
Grand Total	0	2	1703	639	0	0	0	0	0	0	0	0	0	1	0	0	0	1207	1262	0	4814
Apprch %	0	0.1	72.7	27.3	0	0	0	0	0	0	0	0	0	100	0	0	0	48.9	51.1	0	
Total %	0	0	35.4	13.3	0	0	0	0	0	0	0	0	0	0	0	0	0	25.1	26.2	0	
Cars	0	1	1598	614	0	0	0	0	0	0	0	0	0	1	0	0	0	1160	1234	0	4608
% Cars	0	50	93.8	96.1	0	0	0	0	0	0	0	0	0	100	0	0	0	96.1	97.8	0	95.7
Heavy Vehicles	0	1	105	25	0	0	0	0	0	0	0	0	0	0	0	0	0	47	28	0	206
% Heavy Vehicles	0	50	6.2	3.9	0	0	0	0	0	0	0	0	0	0	0	0	0	3.9	2.2	0	4.3

Start Time	Albany Street From North					I-93 SB Onramp From East					Albany Street From South					Boston Herald Driveway From Southwest					Herald Street From West					Int. Total
	Right	Bear Right	Thru	Left	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Hard Right	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 12:45 PM																										
12:45 PM	0	0	163	45	208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	117	98	0	215	423
01:00 PM	0	0	136	64	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	107	99	0	206	406
01:15 PM	0	0	132	50	182	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	111	116	0	227	409
01:30 PM	0	0	129	61	190	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	128	0	224	414
Total Volume	0	0	560	220	780	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	431	441	0	872	1652
% App. Total	0	0	71.8	28.2		0	0	0	0		0	0	0	0		0	0	0	0		0	49.4	50.6	0		
PHF	.000	.000	.859	.859	.938	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.921	.861	.000	.960	.976
Cars	0	0	540	212	752	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	418	433	0	851	1603
% Cars	0	0	96.4	96.4	96.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97.0	98.2	0	97.6	97.0
Heavy Vehicles	0	0	20	8	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	8	0	21	49
% Heavy Vehicles	0	0	3.6	3.6	3.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.0	1.8	0	2.4	3.0



PRECISION  
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N/S/SW: Albany Street/Boston Herald Dr.  
E/W: I-93 SB Onramp/Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 A  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Albany Street From North				I-93 SB Onramp From East				Albany Street From South				Boston Herald Driveway From Southwest				Herald Street From West				Int. Total
	Right	Bear Right	Thru	Left	Right	Thru	Bear Left	Left	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	Hard Right	Right	Thru	Left	
11:00 AM	0	0	12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0	21
11:15 AM	0	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	17
11:30 AM	0	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	0	19
11:45 AM	0	0	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	24
<b>Total</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>13</b>	<b>0</b>	<b>81</b>
12:00 PM	0	0	10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	0	21
12:15 PM	0	1	15	3	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	24
12:30 PM	0	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	18
12:45 PM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	10
<b>Total</b>	<b>0</b>	<b>1</b>	<b>41</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>8</b>	<b>0</b>	<b>73</b>
01:00 PM	0	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	15
01:15 PM	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	13
01:30 PM	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	11
01:45 PM	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	13
<b>Total</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>7</b>	<b>0</b>	<b>52</b>
<b>Grand Total</b>	<b>0</b>	<b>1</b>	<b>105</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>28</b>	<b>0</b>	<b>206</b>
<b>Apprch %</b>	<b>0</b>	<b>0.8</b>	<b>80.2</b>	<b>19.1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>62.7</b>	<b>37.3</b>	<b>0</b>	
<b>Total %</b>	<b>0</b>	<b>0.5</b>	<b>51</b>	<b>12.1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22.8</b>	<b>13.6</b>	<b>0</b>	

Start Time	Albany Street From North					I-93 SB Onramp From East					Albany Street From South					Boston Herald Driveway From Southwest					Herald Street From West					Int. Total
	Right	Bear Right	Thru	Left	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Hard Right	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 11:30 AM																										
11:30 AM	0	0	11	1	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	0	7	19
11:45 AM	0	0	14	2	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	8	24
12:00 PM	0	0	10	3	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	0	8	21
12:15 PM	0	1	15	3	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	24
Total Volume	0	1	50	9	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	11	0	28	88
% App. Total	0	1.7	83.3	15		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60.7	39.3	0		
<b>PHF</b>	<b>.000</b>	<b>.250</b>	<b>.833</b>	<b>.750</b>	<b>.789</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.850</b>	<b>.688</b>	<b>.000</b>	<b>.875</b>	<b>.917</b>





PRECISION  
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N/S/SW: Albany Street/Boston Herald Dr.  
E/W: I-93 SB Onramp/Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 A  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Albany Street From North					I-93 SB Onramp From East					Albany Street From South					Boston Herald Driveway From Southwest					Herald Street From West					Int. Total				
	Right	Bear Right	Thru	Left	Peds	Right	Thru	Bear Left	Left	Peds	Right	Thru	Left	Hard Left	Peds	Hard Right	Bear Right	Bear Left	Hard Left	Peds	Hard Right	Right	Thru	Left	Peds					
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
<b>Total</b>	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	6
Grand Total	0	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	1	0	0	3					19
Apprch %	0	0	20	0	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	25	0	0	75					
Total %	0	0	5.3	0	21.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52.6	0	5.3	0	0	15.8					

Start Time	Albany Street From North						I-93 SB Onramp From East					Albany Street From South					Boston Herald Driveway From Southwest					Herald Street From West					Int. Total												
	Right	Bear Right	Thru	Left	Peds	App. Total	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Right		Thru	Left	Peds	App. Total								
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																																							
Peak Hour for Entire Intersection Begins at 12:15 PM																																							
12:15 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	1	1	3
12:30 PM	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:45 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	1	1	2
Total Volume																																							
% App. Total	0	0	0	0	100		0	0	0	0	0		0	0	0	0	0		0	0	0	0	100		0	0	0	0	100		0	0	0	0	100				
PHF	.000	.000	.000	.000	.500	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.417	.417	.000	.000	.000	.000	.500	.500	.688								



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INDUSTRIES, LLC

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N/S: Albany Street  
E/W: Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 C  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Albany Street From North			Traveler Street From East			Albany Street From South			Traveler Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
11:00 AM	24	99	123	0	0	0	0	0	0	10	36	0	292
11:15 AM	17	92	129	0	1	0	0	0	0	7	33	0	279
11:30 AM	23	88	115	0	0	0	0	0	0	9	33	0	268
11:45 AM	13	79	139	0	0	0	0	0	0	10	30	0	271
<b>Total</b>	<b>77</b>	<b>358</b>	<b>506</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>132</b>	<b>0</b>	<b>1110</b>
12:00 PM	20	97	122	0	0	1	0	0	0	12	36	0	288
12:15 PM	16	101	121	0	0	0	0	0	0	10	27	0	275
12:30 PM	22	100	136	0	0	0	0	0	0	11	27	0	296
12:45 PM	18	127	126	0	0	0	0	0	0	10	25	0	306
<b>Total</b>	<b>76</b>	<b>425</b>	<b>505</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>115</b>	<b>0</b>	<b>1165</b>
01:00 PM	19	97	137	0	0	0	0	0	0	9	27	0	289
01:15 PM	25	83	138	0	1	0	0	0	0	7	35	0	289
01:30 PM	20	83	127	0	0	0	0	0	0	12	33	0	275
01:45 PM	9	104	120	0	0	0	0	0	0	7	24	0	264
<b>Total</b>	<b>73</b>	<b>367</b>	<b>522</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>119</b>	<b>0</b>	<b>1117</b>
<b>Grand Total</b>	<b>226</b>	<b>1150</b>	<b>1533</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>114</b>	<b>366</b>	<b>0</b>	<b>3392</b>
Apprch %	7.8	39.5	52.7	0	66.7	33.3	0	0	0	23.8	76.2	0	
Total %	6.7	33.9	45.2	0	0.1	0	0	0	0	3.4	10.8	0	
Cars	223	1071	1480	0	2	1	0	0	0	113	358	0	3248
% Cars	98.7	93.1	96.5	0	100	100	0	0	0	99.1	97.8	0	95.8
Heavy Vehicles	3	79	53	0	0	0	0	0	0	1	8	0	144
% Heavy Vehicles	1.3	6.9	3.5	0	0	0	0	0	0	0.9	2.2	0	4.2

Start Time	Albany Street From North				Traveler Street From East				Albany Street From South				Traveler Street From West				Int. Total	
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total		
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 12:30 PM																		
12:30 PM	22	100	136	258	0	0	0	0	0	0	0	0	0	11	27	0	38	296
12:45 PM	18	127	126	271	0	0	0	0	0	0	0	0	0	10	25	0	35	306
01:00 PM	19	97	137	253	0	0	0	0	0	0	0	0	0	9	27	0	36	289
01:15 PM	25	83	138	246	0	1	0	1	0	0	0	0	0	7	35	0	42	289
Total Volume	84	407	537	1028	0	1	0	1	0	0	0	0	0	37	114	0	151	1180
% App. Total	8.2	39.6	52.2		0	100	0		0	0	0		24.5	75.5	0			
PHF	.840	.801	.973	.948	.000	.250	.000	.250	.000	.000	.000	.000	.841	.814	.000	.899	.964	
Cars	83	383	525	991	0	1	0	1	0	0	0	0	36	113	0	149	1141	
% Cars	98.8	94.1	97.8	96.4	0	100	0	100	0	0	0	0	97.3	99.1	0	98.7	96.7	
Heavy Vehicles	1	24	12	37	0	0	0	0	0	0	0	0	1	1	0	2	39	
% Heavy Vehicles	1.2	5.9	2.2	3.6	0	0	0	0	0	0	0	0	2.7	0.9	0	1.3	3.3	



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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 C  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Albany Street From North			Traveler Street From East			Albany Street From South			Traveler Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
11:00 AM	0	7	5	0	0	0	0	0	0	0	0	0	12
11:15 AM	1	6	6	0	0	0	0	0	0	0	0	0	13
11:30 AM	0	9	3	0	0	0	0	0	0	0	1	0	13
11:45 AM	1	7	6	0	0	0	0	0	0	0	1	0	15
<b>Total</b>	<b>2</b>	<b>29</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>53</b>
12:00 PM	0	6	4	0	0	0	0	0	0	0	3	0	13
12:15 PM	0	13	8	0	0	0	0	0	0	0	1	0	22
12:30 PM	0	10	3	0	0	0	0	0	0	1	0	0	14
12:45 PM	1	4	3	0	0	0	0	0	0	0	0	0	8
<b>Total</b>	<b>1</b>	<b>33</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>57</b>
01:00 PM	0	8	2	0	0	0	0	0	0	0	1	0	11
01:15 PM	0	2	4	0	0	0	0	0	0	0	0	0	6
01:30 PM	0	4	4	0	0	0	0	0	0	0	1	0	9
01:45 PM	0	3	5	0	0	0	0	0	0	0	0	0	8
<b>Total</b>	<b>0</b>	<b>17</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>34</b>
<b>Grand Total</b>	<b>3</b>	<b>79</b>	<b>53</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>144</b>
Apprch %	2.2	58.5	39.3	0	0	0	0	0	0	11.1	88.9	0	
Total %	2.1	54.9	36.8	0	0	0	0	0	0	0.7	5.6	0	

Start Time	Albany Street From North				Traveler Street From East				Albany Street From South				Traveler Street From West				Int. Total	
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total		
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 11:45 AM																		
11:45 AM	1	7	6	14	0	0	0	0	0	0	0	0	0	0	1	0	1	15
12:00 PM	0	6	4	10	0	0	0	0	0	0	0	0	0	0	3	0	3	13
12:15 PM	0	13	8	21	0	0	0	0	0	0	0	0	0	0	1	0	1	22
12:30 PM	0	10	3	13	0	0	0	0	0	0	0	0	0	1	0	0	1	14
<b>Total Volume</b>	<b>1</b>	<b>36</b>	<b>21</b>	<b>58</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>64</b>
% App. Total	1.7	62.1	36.2		0	0	0		0	0	0		16.7	83.3	0			
PHF	.250	.692	.656	.690	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.417	.000	.500	.727



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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 C  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Albany Street From North				Traveler Street From East				Albany Street From South				Traveler Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	1	4
11:15 AM	0	0	0	1	0	0	0	1	0	0	0	3	0	0	0	1	6
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	4
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	3
<b>Total</b>	0	0	0	2	0	0	0	1	0	0	0	8	0	1	0	5	17
12:00 PM	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0	1	5
12:15 PM	0	0	0	2	0	0	0	1	0	0	0	4	0	0	0	3	10
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
12:45 PM	0	0	0	2	0	0	0	0	0	0	0	4	0	0	0	3	9
<b>Total</b>	0	0	0	5	0	0	0	3	0	0	0	10	0	0	0	8	26
01:00 PM	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	1	4
01:15 PM	0	0	1	0	0	0	0	0	0	0	0	2	0	1	0	2	6
01:30 PM	0	1	0	0	0	1	0	1	0	0	0	10	0	0	0	4	17
01:45 PM	0	0	0	3	0	0	0	2	0	0	0	2	0	0	0	1	8
<b>Total</b>	0	1	1	3	0	1	0	4	0	0	0	16	0	1	0	8	35
<b>Grand Total</b>	0	1	1	10	0	1	0	8	0	0	0	34	0	2	0	21	78
Apprch %	0	8.3	8.3	83.3	0	11.1	0	88.9	0	0	0	100	0	8.7	0	91.3	
Total %	0	1.3	1.3	12.8	0	1.3	0	10.3	0	0	0	43.6	0	2.6	0	26.9	

Start Time	Albany Street From North					Traveler Street From East					Albany Street From South					Traveler Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:45 PM																					
12:45 PM	0	0	0	2	2	0	0	0	0	0	0	0	0	4	4	0	0	0	3	3	9
01:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	1	1	4
01:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	2	2	0	1	0	2	3	6
01:30 PM	0	1	0	0	1	0	1	0	1	2	0	0	0	10	10	0	0	0	4	4	17
Total Volume	0	1	1	2	4	0	1	0	2	3	0	0	0	18	18	0	1	0	10	11	36
% App. Total	0	25	25	50		0	33.3	0	66.7		0	0	0	100		0	9.1	0	90.9		
PHF	.000	.250	.250	.250	.500	.000	.250	.000	.500	.375	.000	.000	.000	.450	.450	.000	.250	.000	.625	.688	.529







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E/W: E. Berkeley Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 D  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Albany Street From North				E. Berkeley Street From East				Albany Street From South				E. Berkeley Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	0	5	0	1	0	1	0	0	0	3	0	0	0	1	11
11:15 AM	0	0	0	3	0	0	0	0	0	0	0	15	0	0	0	1	19
11:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
11:45 AM	0	0	0	1	0	1	0	0	0	0	0	5	0	0	0	1	8
Total	0	0	0	10	0	2	0	1	0	0	0	23	0	0	0	3	39
12:00 PM	0	0	0	5	0	2	0	0	0	0	0	2	0	0	0	0	9
12:15 PM	0	0	0	2	0	1	0	1	0	0	0	4	0	0	0	1	9
12:30 PM	0	0	0	2	0	0	0	0	0	0	0	4	0	0	0	2	8
12:45 PM	0	0	0	4	0	0	0	0	0	0	0	3	0	0	0	3	10
Total	0	0	0	13	0	3	0	1	0	0	0	13	0	0	0	6	36
01:00 PM	0	0	0	10	0	0	0	2	0	0	0	9	0	0	0	2	23
01:15 PM	0	0	0	3	0	1	0	0	0	0	0	10	0	0	0	2	16
01:30 PM	0	1	0	4	0	0	0	1	0	0	0	2	0	0	0	1	9
01:45 PM	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	5
Total	0	1	0	18	0	1	0	3	0	0	0	23	0	0	0	7	53
Grand Total	0	1	0	41	0	6	0	5	0	0	0	59	0	0	0	16	128
Apprch %	0	2.4	0	97.6	0	54.5	0	45.5	0	0	0	100	0	0	0	100	
Total %	0	0.8	0	32	0	4.7	0	3.9	0	0	0	46.1	0	0	0	12.5	

Start Time	Albany Street From North					E. Berkeley Street From East					Albany Street From South					E. Berkeley Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:45 PM																					
12:45 PM	0	0	0	4	4	0	0	0	0	0	0	0	0	3	3	0	0	0	3	3	10
01:00 PM	0	0	0	10	10	0	0	0	2	2	0	0	0	9	9	0	0	0	2	2	23
01:15 PM	0	0	0	3	3	0	1	0	0	1	0	0	0	10	10	0	0	0	2	2	16
01:30 PM	0	1	0	4	5	0	0	0	1	1	0	0	0	2	2	0	0	0	1	1	9
Total Volume	0	1	0	21	22	0	1	0	3	4	0	0	0	24	24	0	0	0	8	8	58
% App. Total	0	4.5	0	95.5		0	25	0	75		0	0	0	100		0	0	0	100		
PHF	.000	.250	.000	.525	.550	.000	.250	.000	.375	.500	.000	.000	.000	.600	.600	.000	.000	.000	.667	.667	.630



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N/S: Harrison Avenue  
E/W: Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 E  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Harrison Avenue From North			Herald Street From East			Harrison Avenue From South			Herald Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
11:00 AM	1	43	26	0	0	0	12	0	1	35	160	0	278
11:15 AM	0	50	28	0	0	0	16	0	2	50	164	0	310
11:30 AM	0	35	16	0	0	0	11	0	1	52	158	0	273
11:45 AM	0	37	25	0	0	0	16	0	0	39	172	0	289
<b>Total</b>	<b>1</b>	<b>165</b>	<b>95</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>55</b>	<b>0</b>	<b>4</b>	<b>176</b>	<b>654</b>	<b>0</b>	<b>1150</b>
12:00 PM	0	42	24	0	0	0	14	0	0	41	168	0	289
12:15 PM	0	45	22	0	0	0	15	0	0	50	166	0	298
12:30 PM	0	51	18	0	0	0	8	0	0	43	191	0	311
12:45 PM	0	48	21	0	0	0	11	0	1	46	177	0	304
<b>Total</b>	<b>0</b>	<b>186</b>	<b>85</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>1</b>	<b>180</b>	<b>702</b>	<b>0</b>	<b>1202</b>
01:00 PM	0	28	16	0	0	0	6	0	1	21	103	0	175
01:15 PM	0	31	23	0	0	0	7	0	0	36	200	0	297
01:30 PM	0	35	24	0	0	0	11	0	1	46	205	0	322
01:45 PM	0	43	29	0	0	0	14	0	0	54	179	0	319
<b>Total</b>	<b>0</b>	<b>137</b>	<b>92</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>0</b>	<b>2</b>	<b>157</b>	<b>687</b>	<b>0</b>	<b>1113</b>
<b>Grand Total</b>	<b>1</b>	<b>488</b>	<b>272</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>141</b>	<b>0</b>	<b>7</b>	<b>513</b>	<b>2043</b>	<b>0</b>	<b>3465</b>
Apprch %	0.1	64.1	35.7	0	0	0	95.3	0	4.7	20.1	79.9	0	
Total %	0	14.1	7.8	0	0	0	4.1	0	0.2	14.8	59	0	
Cars	1	485	263	0	0	0	141	0	7	504	1985	0	3386
% Cars	100	99.4	96.7	0	0	0	100	0	100	98.2	97.2	0	97.7
Heavy Vehicles	0	3	9	0	0	0	0	0	0	9	58	0	79
% Heavy Vehicles	0	0.6	3.3	0	0	0	0	0	0	1.8	2.8	0	2.3

Start Time	Harrison Avenue From North				Herald Street From East				Harrison Avenue From South				Herald Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	0	42	<b>24</b>	66	0	0	0	0	14	0	0	14	41	168	0	209	289
12:15 PM	0	45	22	67	0	0	0	0	<b>15</b>	0	0	<b>15</b>	<b>50</b>	166	0	216	298
12:30 PM	0	<b>51</b>	18	<b>69</b>	0	0	0	0	8	0	0	8	43	<b>191</b>	0	<b>234</b>	<b>311</b>
12:45 PM	0	48	21	69	0	0	0	0	11	0	<b>1</b>	12	46	177	0	223	304
Total Volume	0	186	85	271	0	0	0	0	48	0	1	49	180	702	0	882	1202
% App. Total	0	68.6	31.4		0	0	0		98	0	2		20.4	79.6	0		
PHF	.000	.912	.885	.982	.000	.000	.000	.000	.800	.000	.250	.817	.900	.919	.000	.942	.966
Cars	0	184	83	267	0	0	0	0	48	0	1	49	174	683	0	857	1173
% Cars	0	98.9	97.6	98.5	0	0	0	0	100	0	100	100	96.7	97.3	0	97.2	97.6
Heavy Vehicles	0	2	2	4	0	0	0	0	0	0	0	0	6	19	0	25	29
% Heavy Vehicles	0	1.1	2.4	1.5	0	0	0	0	0	0	0	0	3.3	2.7	0	2.8	2.4





PRECISION  
D A T A  
INDUSTRIES, LLC

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N/S: Harrison Avenue  
E/W: Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 E  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Harrison Avenue From North			Herald Street From East			Harrison Avenue From South			Herald Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
11:00 AM	0	1	0	0	0	0	0	0	0	1	4	0	6
11:15 AM	0	0	1	0	0	0	0	0	0	0	6	0	7
11:30 AM	0	0	1	0	0	0	0	0	0	1	5	0	7
11:45 AM	0	0	1	0	0	0	0	0	0	1	6	0	8
<b>Total</b>	0	1	3	0	0	0	0	0	0	3	21	0	28
12:00 PM	0	1	0	0	0	0	0	0	0	2	6	0	9
12:15 PM	0	0	0	0	0	0	0	0	0	4	4	0	8
12:30 PM	0	0	1	0	0	0	0	0	0	0	5	0	6
12:45 PM	0	1	1	0	0	0	0	0	0	0	4	0	6
<b>Total</b>	0	2	2	0	0	0	0	0	0	6	19	0	29
01:00 PM	0	0	1	0	0	0	0	0	0	0	4	0	5
01:15 PM	0	0	1	0	0	0	0	0	0	0	5	0	6
01:30 PM	0	0	2	0	0	0	0	0	0	0	4	0	6
01:45 PM	0	0	0	0	0	0	0	0	0	0	5	0	5
<b>Total</b>	0	0	4	0	0	0	0	0	0	0	18	0	22
<b>Grand Total</b>	0	3	9	0	0	0	0	0	0	9	58	0	79
Apprch %	0	25	75	0	0	0	0	0	0	13.4	86.6	0	
Total %	0	3.8	11.4	0	0	0	0	0	0	11.4	73.4	0	

Start Time	Harrison Avenue From North				Herald Street From East				Harrison Avenue From South				Herald Street From West				Int. Total	
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total		
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 11:30 AM																		
11:30 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	1	5	0	6	7
11:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	1	6	0	7	8
12:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	2	6	0	8	9
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	8	8
<b>Total Volume</b>	0	1	2	3	0	0	0	0	0	0	0	0	0	8	21	0	29	32
<b>% App. Total</b>	0	33.3	66.7		0	0	0		0	0	0		27.6	72.4	0			
<b>PHF</b>	.000	.250	.500	.750	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.875	.000	.906	.889



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N/S: Harrison Avenue  
E/W: Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 E  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Harrison Avenue From North				Herald Street From East				Harrison Avenue From South				Herald Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	0	1	0	0	0	8	0	0	0	2	0	0	0	7	18
11:15 AM	0	1	0	2	0	0	0	6	0	0	0	1	0	0	0	21	31
11:30 AM	0	1	0	0	0	0	0	10	0	1	0	3	0	0	0	25	40
11:45 AM	0	0	0	2	0	0	0	5	0	0	0	1	0	0	0	11	19
<b>Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>64</b>	<b>108</b>
12:00 PM	0	0	0	4	0	0	0	12	0	1	0	1	0	0	0	20	38
12:15 PM	0	1	0	1	0	0	0	9	0	0	0	0	0	0	0	20	31
12:30 PM	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0	17	21
12:45 PM	0	0	0	5	0	0	1	19	0	1	0	8	0	0	0	16	50
<b>Total</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>42</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>73</b>	<b>140</b>
01:00 PM	0	1	0	0	0	0	0	6	0	0	0	1	0	0	0	9	17
01:15 PM	0	1	0	1	0	0	0	11	0	0	0	2	0	1	0	11	27
01:30 PM	0	0	0	4	0	0	0	6	0	1	0	8	0	1	0	39	59
01:45 PM	0	0	0	2	0	0	0	6	0	0	0	3	0	0	0	25	36
<b>Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>84</b>	<b>139</b>
<b>Grand Total</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>100</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>31</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>221</b>	<b>387</b>
Apprch %	0	17.9	0	82.1	0	0	1	99	0	11.4	0	88.6	0	0.9	0	99.1	
Total %	0	1.3	0	5.9	0	0	0.3	25.8	0	1	0	8	0	0.5	0	57.1	

Start Time	Harrison Avenue From North					Herald Street From East					Harrison Avenue From South					Herald Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:45 PM																					
12:45 PM	0	0	0	<b>5</b>	<b>5</b>	0	0	<b>1</b>	<b>19</b>	<b>20</b>	0	<b>1</b>	0	<b>8</b>	<b>9</b>	0	0	0	16	16	50
01:00 PM	0	<b>1</b>	0	0	1	0	0	0	6	6	0	0	0	1	1	0	0	0	9	9	17
01:15 PM	0	<b>1</b>	0	1	2	0	0	0	11	11	0	0	0	2	2	0	<b>1</b>	0	11	12	27
01:30 PM	0	0	0	4	4	0	0	0	6	6	0	1	0	8	9	0	1	0	<b>39</b>	<b>40</b>	<b>59</b>
Total Volume	0	2	0	10	12	0	0	1	42	43	0	2	0	19	21	0	2	0	75	77	153
% App. Total	0	16.7	0	83.3		0	0	2.3	97.7		0	9.5	0	90.5		0	2.6	0	97.4		
PHF	.000	.500	.000	.500	.600	.000	.000	.250	.553	.538	.000	.500	.000	.594	.583	.000	.500	.000	.481	.481	.648



PRECISION  
D A T A  
INDUSTRIES, LLC

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N/S: Harrison Street  
E/W: Herald Driveway/ Wm. Mullins Way  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 F  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Harrison Street From North			Herald Driveway From East			Harrison Street From South				Wm. Mullins Way From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
11:00 AM	15	62	1	0	0	0	0	13	25	3	24	0	3	146
11:15 AM	24	75	0	0	0	0	0	8	20	2	22	0	9	160
11:30 AM	23	63	0	0	0	0	0	12	18	4	12	0	1	133
11:45 AM	19	55	0	0	0	0	0	12	15	3	24	0	6	134
<b>Total</b>	<b>81</b>	<b>255</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>78</b>	<b>12</b>	<b>82</b>	<b>0</b>	<b>19</b>	<b>573</b>
12:00 PM	13	69	0	0	0	0	0	9	21	0	25	0	5	142
12:15 PM	17	77	0	0	0	0	1	17	22	2	26	0	3	165
12:30 PM	16	70	0	0	0	0	0	8	31	1	19	0	2	147
12:45 PM	17	75	1	0	0	0	0	13	22	0	21	0	3	152
<b>Total</b>	<b>63</b>	<b>291</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>47</b>	<b>96</b>	<b>3</b>	<b>91</b>	<b>0</b>	<b>13</b>	<b>606</b>
01:00 PM	16	59	0	0	0	0	0	8	18	2	31	0	6	140
01:15 PM	15	49	0	0	0	0	0	10	18	1	29	0	3	125
01:30 PM	21	56	0	0	0	0	0	8	17	7	17	0	3	129
01:45 PM	25	66	1	1	0	0	0	12	15	2	31	0	3	156
<b>Total</b>	<b>77</b>	<b>230</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>68</b>	<b>12</b>	<b>108</b>	<b>0</b>	<b>15</b>	<b>550</b>
<b>Grand Total</b>	<b>221</b>	<b>776</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>130</b>	<b>242</b>	<b>27</b>	<b>281</b>	<b>0</b>	<b>47</b>	<b>1729</b>
Apprch %	22.1	77.6	0.3	100	0	0	0.2	32.5	60.5	6.8	85.7	0	14.3	
Total %	12.8	44.9	0.2	0.1	0	0	0.1	7.5	14	1.6	16.3	0	2.7	
Cars	220	763	3	1	0	0	1	128	237	26	280	0	46	1705
% Cars	99.5	98.3	100	100	0	0	100	98.5	97.9	96.3	99.6	0	97.9	98.6
Heavy Vehicles	1	13	0	0	0	0	0	2	5	1	1	0	1	24
% Heavy Vehicles	0.5	1.7	0	0	0	0	0	1.5	2.1	3.7	0.4	0	2.1	1.4

Start Time	Harrison Street From North				Herald Driveway From East				Harrison Street From South					Wm. Mullins Way From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 12:00 PM																		
12:00 PM	13	69	0	82	0	0	0	0	0	9	21	0	30	25	0	5	30	142
12:15 PM	17	77	0	94	0	0	0	0	1	17	22	2	42	26	0	3	29	165
12:30 PM	16	70	0	86	0	0	0	0	0	8	31	1	40	19	0	2	21	147
12:45 PM	17	75	1	93	0	0	0	0	0	13	22	0	35	21	0	3	24	152
Total Volume	63	291	1	355	0	0	0	0	1	47	96	3	147	91	0	13	104	606
% App. Total	17.7	82	0.3		0	0	0		0.7	32	65.3	2		87.5	0	12.5		
PHF	.926	.945	.250	.944	.000	.000	.000	.000	.250	.691	.774	.375	.875	.875	.000	.650	.867	.918
Cars	62	282	1	345	0	0	0	0	1	45	95	3	144	91	0	13	104	593
% Cars	98.4	96.9	100	97.2	0	0	0	0	100	95.7	99.0	100	98.0	100	0	100	100	97.9
Heavy Vehicles	1	9	0	10	0	0	0	0	0	2	1	0	3	0	0	0	0	13
% Heavy Vehicles	1.6	3.1	0	2.8	0	0	0	0	0	4.3	1.0	0	2.0	0	0	0	0	2.1



PRECISION  
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N/S: Harrison Street  
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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 F  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Harrison Street From North			Herald Driveway From East			Harrison Street From South				Wm. Mullins Way From West			Int. Total	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left		
11:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
11:15 AM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
11:30 AM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
11:45 AM	0	1	0	0	0	0	0	0	1	1	1	0	0	0	4
Total	0	4	0	0	0	0	0	0	3	1	1	0	0	0	9
12:00 PM	0	3	0	0	0	0	0	1	0	0	0	0	0	0	4
12:15 PM	1	5	0	0	0	0	0	1	1	0	0	0	0	0	8
12:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	9	0	0	0	0	0	2	1	0	0	0	0	0	13
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
Grand Total	1	13	0	0	0	0	0	2	5	1	1	0	1	24	
Apprch %	7.1	92.9	0	0	0	0	0	25	62.5	12.5	50	0	50		
Total %	4.2	54.2	0	0	0	0	0	8.3	20.8	4.2	4.2	0	4.2		

Start Time	Harrison Street From North				Herald Driveway From East				Harrison Street From South					Wm. Mullins Way From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 11:30 AM																		
11:30 AM	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	2
11:45 AM	0	1	0	1	0	0	0	0	0	0	1	1	2	1	0	0	1	4
12:00 PM	0	3	0	3	0	0	0	0	0	1	0	0	1	0	0	0	0	4
12:15 PM	1	5	0	6	0	0	0	0	0	1	1	0	2	0	0	0	0	8
Total Volume	1	10	0	11	0	0	0	0	0	2	3	1	6	1	0	0	1	18
% App. Total	9.1	90.9	0		0	0	0		0	33.3	50	16.7		100	0	0		
PHF	.250	.500	.000	.458	.000	.000	.000	.000	.000	.500	.750	.250	.750	.250	.000	.000	.250	.563



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Groups Printed- Peds and Bicycles

Start Time	Harrison Street From North				Herald Driveway From East				Harrison Street From South				Wm. Mullins Way From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	1	7
11:15 AM	0	1	0	0	0	0	0	3	0	0	0	3	0	0	0	17	24
11:30 AM	0	1	0	0	0	0	0	10	0	1	0	0	0	0	0	11	23
11:45 AM	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0	9	13
<b>Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>67</b>
12:00 PM	0	0	0	3	0	0	0	11	0	1	0	0	1	0	0	12	28
12:15 PM	0	0	0	2	0	0	0	10	0	0	0	0	0	0	0	8	20
12:30 PM	0	0	0	0	0	0	0	5	0	0	0	2	0	0	0	10	17
12:45 PM	0	0	0	1	0	0	0	7	0	0	0	0	0	0	0	12	20
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>42</b>	<b>85</b>
01:00 PM	0	1	0	0	0	0	0	8	0	0	0	0	0	0	0	10	19
01:15 PM	0	1	0	3	0	0	0	7	0	0	0	1	0	0	0	2	14
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	25
01:45 PM	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	21	33
<b>Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>58</b>	<b>91</b>
<b>Grand Total</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>78</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>10</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>138</b>	<b>243</b>
Apprch %	0	28.6	0	71.4	0	0	0	100	0	16.7	0	83.3	0.7	0	0	99.3	
Total %	0	1.6	0	4.1	0	0	0	32.1	0	0.8	0	4.1	0.4	0	0	56.8	

Start Time	Harrison Street From North					Herald Driveway From East					Harrison Street From South					Wm. Mullins Way From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 01:00 PM																					
01:00 PM	0	1	0	0	1	0	0	0	8	8	0	0	0	0	0	0	0	0	10	10	19
01:15 PM	0	1	0	3	4	0	0	0	7	7	0	0	0	1	1	0	0	0	2	2	14
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	25	25
01:45 PM	0	0	0	0	0	0	0	0	12	12	0	0	0	0	0	0	0	0	21	21	33
Total Volume	0	2	0	3	5	0	0	0	27	27	0	0	0	1	1	0	0	0	58	58	91
% App. Total	0	40	0	60		0	0	0	100		0	0	0	100		0	0	0	100		
PHF	.000	.500	.000	.250	.313	.000	.000	.000	.563	.563	.000	.000	.000	.250	.250	.000	.000	.000	.580	.580	.689



PRECISION  
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N/S: Harrison Street  
E/W: Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 G  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Harrison Street From North				Traveler Street From East			Harrison Street From South				Traveler Street From West			Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
11:00 AM	44	50	16	1	10	10	5	26	28	12	3	0	0	0	205
11:15 AM	31	56	22	0	5	12	4	18	21	15	4	0	0	0	188
11:30 AM	27	53	9	6	8	13	3	31	18	17	2	0	0	0	187
11:45 AM	35	45	14	0	7	9	0	25	19	20	1	0	0	0	175
Total	137	204	61	7	30	44	12	100	86	64	10	0	0	0	755
12:00 PM	37	43	21	2	8	6	3	23	23	15	0	0	0	0	181
12:15 PM	41	59	19	0	7	8	4	18	28	17	1	0	0	0	202
12:30 PM	38	43	17	3	8	6	4	23	23	24	1	0	0	0	190
12:45 PM	27	72	14	1	6	16	4	20	23	14	2	0	0	0	199
Total	143	217	71	6	29	36	15	84	97	70	4	0	0	0	772
01:00 PM	22	46	14	2	2	12	3	19	22	11	3	0	0	0	156
01:15 PM	22	41	28	1	5	14	4	20	20	21	3	0	0	0	179
01:30 PM	30	42	19	2	9	10	6	24	20	8	3	0	0	0	173
01:45 PM	36	50	14	0	3	4	2	15	26	11	5	0	0	0	166
Total	110	179	75	5	19	40	15	78	88	51	14	0	0	0	674
Grand Total	390	600	207	18	78	120	42	262	271	185	28	0	0	0	2201
Apprch %	32.1	49.4	17	1.5	32.5	50	17.5	35.1	36.3	24.8	3.8	0	0	0	
Total %	17.7	27.3	9.4	0.8	3.5	5.5	1.9	11.9	12.3	8.4	1.3	0	0	0	
Cars	390	589	203	18	75	120	40	257	265	177	28	0	0	0	2162
% Cars	100	98.2	98.1	100	96.2	100	95.2	98.1	97.8	95.7	100	0	0	0	98.2
Heavy Vehicles	0	11	4	0	3	0	2	5	6	8	0	0	0	0	39
% Heavy Vehicles	0	1.8	1.9	0	3.8	0	4.8	1.9	2.2	4.3	0	0	0	0	1.8

Start Time	Harrison Street From North					Traveler Street From East				Harrison Street From South					Traveler Street From West				Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 12:00 PM																			
12:00 PM	37	43	21	2	103	8	6	3	17	23	23	15	0	61	0	0	0	0	181
12:15 PM	41	59	19	0	119	7	8	4	19	18	28	17	1	64	0	0	0	0	202
12:30 PM	38	43	17	3	101	8	6	4	18	23	23	24	1	71	0	0	0	0	190
12:45 PM	27	72	14	1	114	6	16	4	26	20	23	14	2	59	0	0	0	0	199
Total Volume	143	217	71	6	437	29	36	15	80	84	97	70	4	255	0	0	0	0	772
% App. Total	32.7	49.7	16.2	1.4		36.2	45	18.8		32.9	38	27.5	1.6		0	0	0		
PHF	.872	.753	.845	.500	.918	.906	.563	.938	.769	.913	.866	.729	.500	.898	.000	.000	.000	.000	.955
Cars	143	212	68	6	429	28	36	13	77	83	95	67	4	249	0	0	0	0	755
% Cars	100	97.7	95.8	100	98.2	96.6	100	86.7	96.3	98.8	97.9	95.7	100	97.6	0	0	0	0	97.8
Heavy Vehicles	0	5	3	0	8	1	0	2	3	1	2	3	0	6	0	0	0	0	17
% Heavy Vehicles	0	2.3	4.2	0	1.8	3.4	0	13.3	3.8	1.2	2.1	4.3	0	2.4	0	0	0	0	2.2



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E/W: Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 G  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Harrison Street From North				Traveler Street From East				Harrison Street From South				Traveler Street From West			Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left		
11:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:15 AM	0	2	0	0	1	0	0	0	0	0	1	0	0	0	0	4
11:30 AM	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	3
11:45 AM	0	2	0	0	1	0	0	1	0	0	0	0	0	0	0	4
Total	0	6	1	0	2	0	0	1	1	2	0	0	0	0	0	13
12:00 PM	0	1	1	0	0	0	0	1	1	1	0	0	0	0	0	5
12:15 PM	0	3	1	0	0	0	1	0	1	1	0	0	0	0	0	7
12:30 PM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
12:45 PM	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	3
Total	0	5	3	0	1	0	2	1	2	3	0	0	0	0	0	17
01:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
01:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
01:30 PM	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	4
01:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	3	3	3	0	0	0	0	0	9
Grand Total	0	11	4	0	3	0	2	5	6	8	0	0	0	0	0	39
Apprch %	0	73.3	26.7	0	60	0	40	26.3	31.6	42.1	0	0	0	0	0	
Total %	0	28.2	10.3	0	7.7	0	5.1	12.8	15.4	20.5	0	0	0	0	0	

Start Time	Harrison Street From North					Traveler Street From East				Harrison Street From South					Traveler Street From West				Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 11:30 AM																			
11:30 AM	0	0	1	0	1	0	0	0	0	0	1	1	0	2	0	0	0	0	3
11:45 AM	0	2	0	0	2	1	0	0	1	1	0	0	0	1	0	0	0	0	4
12:00 PM	0	1	1	0	2	0	0	0	0	1	1	1	0	3	0	0	0	0	5
12:15 PM	0	3	1	0	4	0	0	1	1	0	1	1	0	2	0	0	0	0	7
Total Volume	0	6	3	0	9	1	0	1	2	2	3	3	0	8	0	0	0	0	19
% App. Total	0	66.7	33.3	0		50	0	50		25	37.5	37.5	0		0	0	0		
PHF	.000	.500	.750	.000	.563	.250	.000	.250	.500	.500	.750	.750	.000	.667	.000	.000	.000	.000	.679



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E/W: Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 G  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Harrison Street From North				Traveler Street From East				Harrison Street From South				Traveler Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	1	5
11:15 AM	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	3	8
11:30 AM	0	1	0	1	0	0	0	9	0	1	0	1	0	0	0	13	26
11:45 AM	0	0	1	2	0	0	0	4	1	0	0	1	0	0	0	11	20
<b>Total</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>59</b>
12:00 PM	0	0	0	1	0	0	1	7	0	1	0	2	0	0	0	8	20
12:15 PM	0	1	0	2	0	0	0	7	0	0	0	5	0	0	0	7	22
12:30 PM	0	0	0	1	0	0	0	10	0	0	0	1	0	0	0	6	18
12:45 PM	0	1	0	0	0	0	0	12	0	1	0	1	0	0	0	5	20
<b>Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>36</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>80</b>
01:00 PM	0	1	0	3	0	0	0	7	0	0	0	1	0	0	0	9	21
01:15 PM	1	0	0	1	0	0	0	4	0	0	0	0	0	0	0	9	15
01:30 PM	0	0	0	2	0	1	0	3	0	0	0	4	0	0	0	16	26
01:45 PM	0	0	0	3	0	0	0	8	0	0	0	5	0	0	0	27	43
<b>Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>61</b>	<b>105</b>
<b>Grand Total</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b>16</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>79</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>115</b>	<b>244</b>
Apprch %	4.5	18.2	4.5	72.7	0	1.2	1.2	97.5	3.8	11.5	0	84.6	0	0	0	100	
Total %	0.4	1.6	0.4	6.6	0	0.4	0.4	32.4	0.4	1.2	0	9	0	0	0	47.1	

Start Time	Harrison Street From North					Traveler Street From East					Harrison Street From South					Traveler Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 01:00 PM																					
01:00 PM	0	1	0	3	4	0	0	0	7	7	0	0	0	1	1	0	0	0	9	9	21
01:15 PM	1	0	0	1	2	0	0	0	4	4	0	0	0	0	0	0	0	0	9	9	15
01:30 PM	0	0	0	2	2	0	1	0	3	4	0	0	0	4	4	0	0	0	16	16	26
01:45 PM	0	0	0	3	3	0	0	0	8	8	0	0	0	5	5	0	0	0	27	27	43
Total Volume	1	1	0	9	11	0	1	0	22	23	0	0	0	10	10	0	0	0	61	61	105
% App. Total	9.1	9.1	0	81.8		0	4.3	0	95.7		0	0	0	100		0	0	0	100		
PHF	.250	.250	.000	.750	.688	.000	.250	.000	.688	.719	.000	.000	.000	.500	.500	.000	.000	.000	.565	.565	.610





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N/S: Harrison Street  
E/W: East Berkeley Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 H  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Harrison Street From North				East Berkeley Street From East			Harrison Street From South				East Berkeley Street From West			Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
11:00 AM	34	31	0	0	31	114	33	0	38	3	0	0	0	0	284
11:15 AM	16	39	0	2	38	111	25	0	28	8	0	0	0	0	267
11:30 AM	24	36	0	2	34	114	21	0	31	22	0	0	0	0	284
11:45 AM	23	21	0	0	39	100	34	0	30	11	0	0	0	0	258
Total	97	127	0	4	142	439	113	0	127	44	0	0	0	0	1093
12:00 PM	22	25	0	1	30	126	35	0	31	15	0	0	0	0	285
12:15 PM	28	30	0	2	26	143	37	0	33	11	0	0	0	0	310
12:30 PM	22	27	0	0	34	113	19	0	33	20	0	0	0	0	268
12:45 PM	33	36	0	4	27	121	24	0	27	12	0	0	0	0	284
Total	105	118	0	7	117	503	115	0	124	58	0	0	0	0	1147
01:00 PM	24	36	0	0	30	110	28	0	24	15	0	0	0	0	267
01:15 PM	18	27	0	0	31	117	29	0	34	9	0	0	0	0	265
01:30 PM	24	27	0	2	24	103	25	0	33	13	0	0	0	0	251
01:45 PM	23	36	0	0	20	112	24	0	38	6	0	0	0	0	259
Total	89	126	0	2	105	442	106	0	129	43	0	0	0	0	1042
Grand Total	291	371	0	13	364	1384	334	0	380	145	0	0	0	0	3282
Apprch %	43.1	55	0	1.9	17.5	66.5	16	0	72.4	27.6	0	0	0	0	
Total %	8.9	11.3	0	0.4	11.1	42.2	10.2	0	11.6	4.4	0	0	0	0	
Cars	285	365	0	13	351	1359	329	0	374	142	0	0	0	0	3218
% Cars	97.9	98.4	0	100	96.4	98.2	98.5	0	98.4	97.9	0	0	0	0	98
Heavy Vehicles	6	6	0	0	13	25	5	0	6	3	0	0	0	0	64
% Heavy Vehicles	2.1	1.6	0	0	3.6	1.8	1.5	0	1.6	2.1	0	0	0	0	2

Start Time	Harrison Street From North					East Berkeley Street From East				Harrison Street From South					East Berkeley Street From West				Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 12:00 PM																			
12:00 PM	22	25	0	1	48	30	126	35	191	0	31	15	0	46	0	0	0	0	285
12:15 PM	28	30	0	2	60	26	<b>143</b>	<b>37</b>	<b>206</b>	0	<b>33</b>	11	0	44	0	0	0	0	<b>310</b>
12:30 PM	22	27	0	0	49	<b>34</b>	113	19	166	0	33	<b>20</b>	0	<b>53</b>	0	0	0	0	268
12:45 PM	<b>33</b>	<b>36</b>	0	<b>4</b>	<b>73</b>	27	121	24	172	0	27	12	0	39	0	0	0	0	284
Total Volume	105	118	0	7	230	117	503	115	735	0	124	58	0	182	0	0	0	0	1147
% App. Total	45.7	51.3	0	3		15.9	68.4	15.6		0	68.1	31.9	0		0	0	0		
PHF	.795	.819	.000	.438	.788	.860	.879	.777	.892	.000	.939	.725	.000	.858	.000	.000	.000	.000	.925
Cars	100	116	0	7	223	111	495	112	718	0	123	56	0	179	0	0	0	0	1120
% Cars	95.2	98.3	0	100	97.0	94.9	98.4	97.4	97.7	0	99.2	96.6	0	98.4	0	0	0	0	97.6
Heavy Vehicles	5	2	0	0	7	6	8	3	17	0	1	2	0	3	0	0	0	0	27
% Heavy Vehicles	4.8	1.7	0	0	3.0	5.1	1.6	2.6	2.3	0	0.8	3.4	0	1.6	0	0	0	0	2.4



PRECISION  
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INDUSTRIES, LLC

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N/S: Harrison Street  
E/W: East Berkeley Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 H  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Harrison Street From North				East Berkeley Street From East			Harrison Street From South				East Berkeley Street From West			Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
11:00 AM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	4
11:15 AM	0	2	0	0	1	1	0	0	1	0	0	0	0	0	5
11:30 AM	0	1	0	0	2	6	1	0	0	1	0	0	0	0	11
11:45 AM	1	0	0	0	0	3	0	0	2	0	0	0	0	0	6
<b>Total</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>13</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>
12:00 PM	0	1	0	0	3	3	2	0	1	0	0	0	0	0	10
12:15 PM	3	1	0	0	2	1	1	0	0	1	0	0	0	0	9
12:30 PM	0	0	0	0	1	2	0	0	0	1	0	0	0	0	4
12:45 PM	2	0	0	0	0	2	0	0	0	0	0	0	0	0	4
<b>Total</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>8</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27</b>
01:00 PM	0	0	0	0	1	1	1	0	1	0	0	0	0	0	4
01:15 PM	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3
01:30 PM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
01:45 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>
<b>Grand Total</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>25</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>64</b>
Apprch %	50	50	0	0	30.2	58.1	11.6	0	66.7	33.3	0	0	0	0	
Total %	9.4	9.4	0	0	20.3	39.1	7.8	0	9.4	4.7	0	0	0	0	

Start Time	Harrison Street From North					East Berkeley Street From East				Harrison Street From South					East Berkeley Street From West				Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 11:30 AM																			
11:30 AM	0	1	0	0	1	2	6	1	9	0	0	1	0	1	0	0	0	0	11
11:45 AM	1	0	0	0	1	0	3	0	3	0	2	0	0	2	0	0	0	0	6
12:00 PM	0	1	0	0	1	3	3	2	8	0	1	0	0	1	0	0	0	0	10
12:15 PM	3	1	0	0	4	2	1	1	4	0	0	1	0	1	0	0	0	0	9
<b>Total Volume</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>7</b>	<b>13</b>	<b>4</b>	<b>24</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>36</b>
% App. Total	57.1	42.9	0	0		29.2	54.2	16.7		0	60	40	0		0	0	0		
PHF	.333	.750	.000	.000	.438	.583	.542	.500	.667	.000	.375	.500	.000	.625	.000	.000	.000	.000	.818



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N/S: Harrison Street  
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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 H  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Harrison Street From North				East Berkeley Street From East				Harrison Street From South				East Berkeley Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	0	7	0	1	0	3	0	0	0	14	0	0	0	11	36
11:15 AM	0	0	0	6	0	0	0	5	0	0	0	17	0	0	0	6	34
11:30 AM	0	1	0	11	0	0	0	4	0	1	0	14	0	0	1	8	40
11:45 AM	0	0	0	3	0	1	0	8	0	1	0	7	0	0	0	9	29
<b>Total</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>52</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>34</b>	<b>139</b>
12:00 PM	0	0	0	16	0	2	0	10	0	1	0	18	0	0	0	12	59
12:15 PM	0	1	0	3	0	1	0	5	0	0	0	12	0	0	0	7	29
12:30 PM	0	0	0	4	0	0	0	5	0	0	0	16	0	0	0	7	32
12:45 PM	0	1	0	4	0	0	0	4	0	1	0	8	0	0	0	3	21
<b>Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>54</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>141</b>
01:00 PM	0	1	0	10	0	0	0	8	0	0	0	22	0	0	0	6	47
01:15 PM	0	0	0	7	0	1	0	5	0	0	0	23	0	0	0	7	43
01:30 PM	0	0	0	6	0	0	0	3	0	0	0	9	0	0	0	4	22
01:45 PM	0	0	0	2	0	0	0	7	0	0	0	22	0	1	0	12	44
<b>Total</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>76</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>29</b>	<b>156</b>
<b>Grand Total</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>79</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>67</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>182</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>92</b>	<b>436</b>
Apprch %	0	4.8	0	95.2	0	8.2	0	91.8	0	2.2	0	97.8	0	1.1	1.1	97.9	
Total %	0	0.9	0	18.1	0	1.4	0	15.4	0	0.9	0	41.7	0	0.2	0.2	21.1	

Start Time	Harrison Street From North					East Berkeley Street From East					Harrison Street From South					East Berkeley Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	0	0	0	6	6	0	0	0	5	5	0	0	0	17	17	0	0	0	6	6	34
11:30 AM	0	1	0	11	12	0	0	0	4	4	0	1	0	14	15	0	0	1	8	9	40
11:45 AM	0	0	0	3	3	0	1	0	8	9	0	1	0	7	8	0	0	0	9	9	29
12:00 PM	0	0	0	16	16	0	2	0	10	12	0	1	0	18	19	0	0	0	12	12	59
Total Volume	0	1	0	36	37	0	3	0	27	30	0	3	0	56	59	0	0	1	35	36	162
% App. Total	0	2.7	0	97.3		0	10	0	90		0	5.1	0	94.9		0	0	2.8	97.2		
PHF	.000	.250	.000	.563	.578	.000	.375	.000	.675	.625	.000	.750	.000	.778	.776	.000	.000	.250	.729	.750	.686



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E/W: Herald Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 I  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Washington Street From North			Herald Street From East			Washington Street From South			Herald Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
11:00 AM	0	4	0	0	0	0	33	104	0	1	166	9	317
11:15 AM	0	1	1	0	0	0	37	91	0	1	179	8	318
11:30 AM	0	3	0	0	0	0	43	110	0	1	157	9	323
11:45 AM	0	3	0	0	0	0	34	110	0	0	174	12	333
<b>Total</b>	<b>0</b>	<b>11</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>147</b>	<b>415</b>	<b>0</b>	<b>3</b>	<b>676</b>	<b>38</b>	<b>1291</b>
12:00 PM	0	2	2	0	0	0	32	96	0	0	179	8	319
12:15 PM	0	3	0	0	0	0	27	97	0	1	190	11	329
12:30 PM	0	4	0	0	0	0	20	125	0	1	197	12	359
12:45 PM	0	4	0	0	0	0	40	102	0	0	176	12	334
<b>Total</b>	<b>0</b>	<b>13</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>119</b>	<b>420</b>	<b>0</b>	<b>2</b>	<b>742</b>	<b>43</b>	<b>1341</b>
01:00 PM	0	3	0	0	0	0	32	103	0	0	210	8	356
01:15 PM	0	4	0	0	0	0	31	114	0	1	213	15	378
01:30 PM	1	3	1	0	0	0	45	84	0	1	203	13	351
01:45 PM	0	4	0	0	0	0	35	87	0	0	203	9	338
<b>Total</b>	<b>1</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>143</b>	<b>388</b>	<b>0</b>	<b>2</b>	<b>829</b>	<b>45</b>	<b>1423</b>
<b>Grand Total</b>	<b>1</b>	<b>38</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>409</b>	<b>1223</b>	<b>0</b>	<b>7</b>	<b>2247</b>	<b>126</b>	<b>4055</b>
Apprch %	2.3	88.4	9.3	0	0	0	25.1	74.9	0	0.3	94.4	5.3	
Total %	0	0.9	0.1	0	0	0	10.1	30.2	0	0.2	55.4	3.1	
Cars	1	7	3	0	0	0	402	1170	0	6	2185	125	3899
% Cars	100	18.4	75	0	0	0	98.3	95.7	0	85.7	97.2	99.2	96.2
Heavy Vehicles	0	31	1	0	0	0	7	53	0	1	62	1	156
% Heavy Vehicles	0	81.6	25	0	0	0	1.7	4.3	0	14.3	2.8	0.8	3.8

Start Time	Washington Street From North				Herald Street From East				Washington Street From South				Herald Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:30 PM																	
12:30 PM	0	4	0	4	0	0	0	0	20	125	0	145	1	197	12	210	359
12:45 PM	0	4	0	4	0	0	0	0	40	102	0	142	0	176	12	188	334
01:00 PM	0	3	0	3	0	0	0	0	32	103	0	135	0	210	8	218	356
01:15 PM	0	4	0	4	0	0	0	0	31	114	0	145	1	213	15	229	378
Total Volume	0	15	0	15	0	0	0	0	123	444	0	567	2	796	47	845	1427
% App. Total	0	100	0		0	0	0		21.7	78.3	0		0.2	94.2	5.6		
PHF	.000	.938	.000	.938	.000	.000	.000	.000	.769	.888	.000	.978	.500	.934	.783	.922	.944
Cars	0	3	0	3	0	0	0	0	122	426	0	548	2	782	47	831	1382
% Cars	0	20.0	0	20.0	0	0	0	0	99.2	95.9	0	96.6	100	98.2	100	98.3	96.8
Heavy Vehicles	0	12	0	12	0	0	0	0	1	18	0	19	0	14	0	14	45
% Heavy Vehicles	0	80.0	0	80.0	0	0	0	0	0.8	4.1	0	3.4	0	1.8	0	1.7	3.2



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File Name : 112441 I  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Washington Street From North			Herald Street From East			Washington Street From South			Herald Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
11:00 AM	0	3	0	0	0	0	0	4	0	0	7	0	14
11:15 AM	0	1	0	0	0	0	0	4	0	1	8	0	14
11:30 AM	0	2	0	0	0	0	1	5	0	0	6	0	14
11:45 AM	0	3	0	0	0	0	0	2	0	0	8	0	13
<b>Total</b>	0	9	0	0	0	0	1	15	0	1	29	0	55
12:00 PM	0	2	0	0	0	0	2	4	0	0	7	0	15
12:15 PM	0	2	0	0	0	0	3	5	0	0	6	0	16
12:30 PM	0	4	0	0	0	0	0	4	0	0	5	0	13
12:45 PM	0	2	0	0	0	0	0	4	0	0	4	0	10
<b>Total</b>	0	10	0	0	0	0	5	17	0	0	22	0	54
01:00 PM	0	2	0	0	0	0	1	5	0	0	2	0	10
01:15 PM	0	4	0	0	0	0	0	5	0	0	3	0	12
01:30 PM	0	3	1	0	0	0	0	5	0	0	2	1	12
01:45 PM	0	3	0	0	0	0	0	6	0	0	4	0	13
<b>Total</b>	0	12	1	0	0	0	1	21	0	0	11	1	47
<b>Grand Total</b>	0	31	1	0	0	0	7	53	0	1	62	1	156
Apprch %	0	96.9	3.1	0	0	0	11.7	88.3	0	1.6	96.9	1.6	
Total %	0	19.9	0.6	0	0	0	4.5	34	0	0.6	39.7	0.6	

Start Time	Washington Street From North				Herald Street From East				Washington Street From South				Herald Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:30 AM																	
11:30 AM	0	2	0	2	0	0	0	0	1	5	0	6	0	6	0	6	14
11:45 AM	0	3	0	3	0	0	0	0	0	2	0	2	0	8	0	8	13
12:00 PM	0	2	0	2	0	0	0	0	2	4	0	6	0	7	0	7	15
12:15 PM	0	2	0	2	0	0	0	0	3	5	0	8	0	6	0	6	16
<b>Total Volume</b>	0	9	0	9	0	0	0	0	6	16	0	22	0	27	0	27	58
<b>% App. Total</b>	0	100	0		0	0	0		27.3	72.7	0		0	100	0		
<b>PHF</b>	.000	.750	.000	.750	.000	.000	.000	.000	.500	.800	.000	.688	.000	.844	.000	.844	.906



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Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Washington Street From North				Herald Street From East				Washington Street From South				Herald Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	0	6	0	0	0	31	0	1	0	5	0	0	0	37	80
11:15 AM	0	0	0	5	0	0	0	29	0	0	0	11	0	0	0	37	82
11:30 AM	0	0	0	4	0	0	0	23	0	0	0	4	0	0	0	31	62
11:45 AM	0	0	0	0	0	0	0	37	0	0	0	5	0	0	0	31	73
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>120</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>136</b>	<b>297</b>
12:00 PM	0	0	0	1	0	0	0	33	0	0	0	8	0	0	0	33	75
12:15 PM	0	1	0	5	0	0	0	13	0	0	0	2	0	0	0	51	72
12:30 PM	0	0	0	2	0	0	0	19	0	0	0	3	0	0	0	49	73
12:45 PM	0	0	0	3	0	0	0	24	0	0	0	8	0	0	0	36	71
<b>Total</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>89</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>169</b>	<b>291</b>
01:00 PM	0	0	0	2	0	0	0	12	0	0	0	2	0	0	0	56	72
01:15 PM	0	0	0	0	0	0	0	30	0	1	0	7	0	0	0	28	66
01:30 PM	0	0	0	0	0	0	0	25	0	0	0	5	0	0	0	28	58
01:45 PM	0	0	0	2	0	0	0	27	0	0	0	7	0	0	0	32	68
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>94</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>144</b>	<b>264</b>
<b>Grand Total</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>303</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>67</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>449</b>	<b>852</b>
Apprch %	0	3.2	0	96.8	0	0	0	100	0	2.9	0	97.1	0	0	0	100	
Total %	0	0.1	0	3.5	0	0	0	35.6	0	0.2	0	7.9	0	0	0	52.7	

Start Time	Washington Street From North					Herald Street From East					Washington Street From South					Herald Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	0	0	0	<b>6</b>	<b>6</b>	0	0	0	31	31	0	<b>1</b>	0	5	6	0	0	0	<b>37</b>	<b>37</b>	80
11:15 AM	0	0	0	5	5	0	0	0	29	29	0	0	0	<b>11</b>	<b>11</b>	0	0	0	37	37	<b>82</b>
11:30 AM	0	0	0	4	4	0	0	0	23	23	0	0	0	4	4	0	0	0	31	31	62
11:45 AM	0	0	0	0	0	0	0	0	<b>37</b>	<b>37</b>	0	0	0	5	5	0	0	0	31	31	73
Total Volume	0	0	0	15	15	0	0	0	120	120	0	1	0	25	26	0	0	0	136	136	297
% App. Total	0	0	0	100		0	0	0	100		0	3.8	0	96.2		0	0	0	100		
PHF	.000	.000	.000	.625	.625	.000	.000	.000	.811	.811	.000	.250	.000	.568	.591	.000	.000	.000	.919	.919	.905



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N/NE/S: I-93 NB/ I-90 WB/ Frontage Rd NB  
 E/W: W. Broadway Street/ Traveler Street  
 City, State: Boston, MA  
 Client: VHB/ E. Guidoboni

File Name : 112441 J  
 Site Code : 10995.00  
 Start Date : 2/12/2011  
 Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	I-93 NB Ramp From North				West Broadway Street From East					Frontage Road NB From South				Traveler Street From West				I-90 Ramps From Northwest				Int. Total
	Hard Right	Right	Thru	Left	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	
11:00 AM	0	0	0	0	92	17	0	0	2	7	99	39	0	0	95	51	4	0	0	0	0	406
11:15 AM	0	0	0	0	73	33	1	0	0	7	87	23	0	0	105	57	8	0	0	0	0	394
11:30 AM	0	0	0	0	89	37	0	0	1	4	75	35	0	0	94	48	6	0	0	0	0	389
11:45 AM	0	0	0	0	83	26	0	0	1	8	84	35	0	0	111	49	10	0	0	0	0	407
<b>Total</b>	0	0	0	0	337	113	1	0	4	26	345	132	0	0	405	205	28	0	0	0	0	1596
12:00 PM	0	0	0	0	119	29	1	0	0	6	81	42	0	0	93	50	8	0	0	0	0	429
12:15 PM	0	0	0	0	91	17	0	0	0	7	96	37	0	0	99	50	8	0	0	0	0	405
12:30 PM	0	0	0	0	104	34	0	0	0	7	84	34	0	0	114	37	5	0	0	0	0	419
12:45 PM	0	0	0	0	70	17	0	0	1	6	82	45	0	0	93	48	15	0	0	0	0	377
<b>Total</b>	0	0	0	0	384	97	1	0	1	26	343	158	0	0	399	185	36	0	0	0	0	1630
01:00 PM	0	0	0	0	87	20	0	0	0	9	74	33	0	0	93	57	7	0	0	0	0	380
01:15 PM	0	0	0	0	74	24	1	0	0	13	93	36	0	0	101	54	8	0	0	0	0	404
01:30 PM	0	0	0	0	97	30	0	0	0	7	70	23	0	0	105	62	8	0	0	0	0	402
01:45 PM	0	0	0	0	58	20	0	0	0	10	86	35	0	0	93	42	8	0	0	0	0	352
<b>Total</b>	0	0	0	0	316	94	1	0	0	39	323	127	0	0	392	215	31	0	0	0	0	1538
Grand Total	0	0	0	0	1037	304	3	0	5	91	1011	417	0	0	1196	605	95	0	0	0	0	4764
Apprch %	0	0	0	0	76.9	22.5	0.2	0	0.4	6	66.6	27.5	0	0	63.1	31.9	5	0	0	0	0	
Total %	0	0	0	0	21.8	6.4	0.1	0	0.1	1.9	21.2	8.8	0	0	25.1	12.7	2	0	0	0	0	
Cars	0	0	0	0	1021	288	3	0	5	85	927	399	0	0	1137	597	94	0	0	0	0	4556
% Cars	0	0	0	0	98.5	94.7	100	0	100	93.4	91.7	95.7	0	0	95.1	98.7	98.9	0	0	0	0	95.6
Heavy Vehicles	0	0	0	0	16	16	0	0	0	6	84	18	0	0	59	8	1	0	0	0	0	208
% Heavy Vehicles	0	0	0	0	1.5	5.3	0	0	0	6.6	8.3	4.3	0	0	4.9	1.3	1.1	0	0	0	0	4.4

Start Time	I-93 NB Ramp From North					West Broadway Street From East					Frontage Road NB From South					Traveler Street From West					I-90 Ramps From Northwest					Int. Total		
	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left		App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																												
Peak Hour for Entire Intersection Begins at 11:45 AM																												
11:45 AM	0	0	0	0	0	83	26	0	0	1	110	8	84	35	0	127	0	111	49	10	170	0	0	0	0	0	407	
12:00 PM	0	0	0	0	0	119	29	1	0	0	149	6	81	42	0	129	0	93	50	8	151	0	0	0	0	0	429	
12:15 PM	0	0	0	0	0	91	17	0	0	0	108	7	96	37	0	140	0	99	50	8	157	0	0	0	0	0	405	
12:30 PM	0	0	0	0	0	104	34	0	0	0	138	7	84	34	0	125	0	114	37	5	156	0	0	0	0	0	419	
Total Volume	0	0	0	0	0	397	106	1	0	1	505	28	345	148	0	521	0	417	186	31	634	0	0	0	0	0	1660	
% App. Total	0	0	0	0	0	78.6	21	0.2	0	0.2	5.4	66.2	28.4	0	0	65.8	29.3	4.9	0	0	0	0	0	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.834	.779	.250	.000	.250	.847	.875	.898	.881	.000	.930	.000	.914	.930	.775	.932	.000	.000	.000	.000	.000	.967	
Cars	0	0	0	0	0	393	100	1	0	1	495	28	309	141	0	478	0	391	184	31	606	0	0	0	0	0	1579	
% Cars	0	0	0	0	0	99.0	94.3	100	0	100	98.0	100	89.6	95.3	0	91.7	0	93.8	98.9	100	95.6	0	0	0	0	0	95.1	
Heavy Vehicles	0	0	0	0	0	4	6	0	0	0	10	0	36	7	0	43	0	26	2	0	28	0	0	0	0	0	81	
% Heavy Vehicles	0	0	0	0	0	1.0	5.7	0	0	0	2.0	0	10.4	4.7	0	8.3	0	6.2	1.1	0	4.4	0	0	0	0	0	4.9	



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E/W: W. Broadway Street/ Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 J  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	I-93 NB Ramp From North				West Broadway Street From East					Frontage Road NB From South				Traveler Street From West				I-90 Ramps From Northwest				Int. Total
	Hard Right	Right	Thru	Left	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	
11:00 AM	0	0	0	0	1	0	0	0	0	2	8	4	0	0	6	0	0	0	0	0	0	21
11:15 AM	0	0	0	0	1	1	0	0	0	0	8	0	0	0	6	1	0	0	0	0	0	17
11:30 AM	0	0	0	0	1	1	0	0	0	1	10	3	0	0	3	1	0	0	0	0	0	20
11:45 AM	0	0	0	0	0	2	0	0	0	0	10	0	0	0	7	1	0	0	0	0	0	20
<b>Total</b>	0	0	0	0	3	4	0	0	0	3	36	7	0	0	22	3	0	0	0	0	0	78
12:00 PM	0	0	0	0	1	1	0	0	0	0	11	2	0	0	7	0	0	0	0	0	0	22
12:15 PM	0	0	0	0	3	2	0	0	0	0	7	2	0	0	8	1	0	0	0	0	0	23
12:30 PM	0	0	0	0	0	1	0	0	0	0	8	3	0	0	4	0	0	0	0	0	0	16
12:45 PM	0	0	0	0	2	2	0	0	0	2	10	1	0	0	4	0	0	0	0	0	0	21
<b>Total</b>	0	0	0	0	6	6	0	0	0	2	36	8	0	0	23	1	0	0	0	0	0	82
01:00 PM	0	0	0	0	1	2	0	0	0	0	4	0	0	0	1	2	0	0	0	0	0	10
01:15 PM	0	0	0	0	3	0	0	0	0	1	5	0	0	0	3	1	0	0	0	0	0	13
01:30 PM	0	0	0	0	2	3	0	0	0	0	3	1	0	0	5	0	0	0	0	0	0	14
01:45 PM	0	0	0	0	1	1	0	0	0	0	0	2	0	0	5	1	1	0	0	0	0	11
<b>Total</b>	0	0	0	0	7	6	0	0	0	1	12	3	0	0	14	4	1	0	0	0	0	48
<b>Grand Total</b>	0	0	0	0	16	16	0	0	0	6	84	18	0	0	59	8	1	0	0	0	0	208
<b>Apprch %</b>	0	0	0	0	50	50	0	0	0	5.6	77.8	16.7	0	0	86.8	11.8	1.5	0	0	0	0	
<b>Total %</b>	0	0	0	0	7.7	7.7	0	0	0	2.9	40.4	8.7	0	0	28.4	3.8	0.5	0	0	0	0	

Start Time	I-93 NB Ramp From North					West Broadway Street From East					Frontage Road NB From South					Traveler Street From West					I-90 Ramps From Northwest					Int. Total		
	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left		App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																												
Peak Hour for Entire Intersection Begins at 11:30 AM																												
11:30 AM	0	0	0	0	0	1	1	0	0	0	2	1	10	3	0	14	0	3	1	0	4	0	0	0	0	0	20	
11:45 AM	0	0	0	0	0	0	2	0	0	0	2	0	10	0	0	10	0	7	1	0	8	0	0	0	0	0	20	
12:00 PM	0	0	0	0	0	1	1	0	0	0	2	0	11	2	0	13	0	7	0	0	7	0	0	0	0	0	22	
12:15 PM	0	0	0	0	0	3	2	0	0	0	5	0	7	2	0	9	0	8	1	0	9	0	0	0	0	0	23	
<b>Total Volume</b>	0	0	0	0	0	5	6	0	0	0	11	1	38	7	0	46	0	25	3	0	28	0	0	0	0	0	85	
<b>% App. Total</b>	0	0	0	0	0	45.5	54.5	0	0	0	2.2	82.6	15.2	0	0	89.3	10.7	0	0	0	0	0	0	0	0	0	0	
<b>PHF</b>	.000	.000	.000	.000	.000	.417	.750	.000	.000	.000	.550	.250	.864	.583	.000	.821	.000	.781	.750	.000	.778	.000	.000	.000	.000	.000	.924	





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E/W: W. Broadway Street/ Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 J  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	I-93 NB Ramp From North					West Broadway Street From East					Frontage Road NB From South					Traveler Street From West					I-90 Ramps From Northwest					Int. Total
	Hard Right	Right	Thru	Left	Peds	Right	Bear Right	Thru	Left	Peds	Right	Thru	Bear Left	Left	Peds	Right	Thru	Left	Hard Left	Peds	Hard Right	Bear Right	Bear Left	Hard Left	Peds	
11:00 AM	0	0	0	0	1	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	1	7
11:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	1	5
11:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
<b>Total</b>	0	0	0	0	2	0	0	0	0	3	0	0	0	0	9	1	0	0	0	0	0	0	0	0	2	17
12:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5
12:15 PM	0	0	0	0	4	0	0	0	0	2	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	14
12:30 PM	0	0	0	0	2	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	7
12:45 PM	0	0	0	0	4	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	4	13
<b>Total</b>	0	0	0	0	10	0	0	0	0	4	0	0	0	0	15	0	0	0	0	0	0	0	0	0	10	39
01:00 PM	0	0	0	0	6	0	0	0	0	0	0	0	0	0	3	0	0	0	0	2	0	0	0	0	6	17
01:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	1	0	0	0	1	0	0	0	0	0	6
01:30 PM	0	0	0	0	4	0	0	0	0	2	0	0	0	0	9	0	0	0	0	0	0	0	0	0	4	19
01:45 PM	0	0	0	0	3	0	0	0	0	1	0	0	0	0	4	0	0	0	0	0	0	0	0	0	3	11
<b>Total</b>	0	0	0	0	13	0	0	0	0	4	0	0	0	0	19	1	0	0	0	3	0	0	0	0	13	53
Grand Total	0	0	0	0	25	0	0	0	0	11	0	0	0	0	43	2	0	0	0	3	0	0	0	0	25	109
Apprch %	0	0	0	0	100	0	0	0	0	100	0	0	0	0	100	40	0	0	0	60	0	0	0	0	100	
Total %	0	0	0	0	22.9	0	0	0	0	10.1	0	0	0	0	39.4	1.8	0	0	0	2.8	0	0	0	0	22.9	

Start Time	I-93 NB Ramp From North						West Broadway Street From East						Frontage Road NB From South						Traveler Street From West						I-90 Ramps From Northwest						Int. Total	
	Hard Right	Right	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Left	Peds	App. Total	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total		
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																																
Peak Hour for Entire Intersection Begins at 12:45 PM																																
12:45 PM	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	4	4	13	
01:00 PM	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	2	2	0	0	0	0	6	6	17	
01:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	3	3	1	0	0	0	1	2	0	0	0	0	0	0	6	
01:30 PM	0	0	0	0	4	4	0	0	0	0	2	2	0	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0	4	4	19	
Total Volume	0	0	0	0	14	14	0	0	0	0	3	3	0	0	0	0	20	20	1	0	0	0	3	4	0	0	0	0	14	14	55	
% App. Total	0	0	0	0	100		0	0	0	0	100		0	0	0	0	100		25	0	0	0	75		0	0	0	0	100			
PHF	.000	.000	.000	.000	.583	.583	.000	.000	.000	.000	.375	.375	.000	.000	.000	.000	.556	.556	.250	.000	.000	.000	.375	.500	.000	.000	.000	.000	.583	.583	.724	



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E/W: W. 4th Street/ E. Berkeley Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 K  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Frontage Road NB From North			W. 4th Street From East				Frontage Road NB From South				E. Berkeley Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	
11:00 AM	0	0	0	21	90	0	0	35	115	59	2	0	0	0	322
11:15 AM	0	0	0	24	99	0	0	26	103	66	5	0	0	0	323
11:30 AM	0	0	0	16	95	0	0	26	102	61	1	0	0	0	301
11:45 AM	0	0	0	18	86	0	0	31	108	89	9	0	0	0	341
Total	0	0	0	79	370	0	0	118	428	275	17	0	0	0	1287
12:00 PM	0	0	0	23	99	0	0	34	123	80	11	0	0	0	370
12:15 PM	0	0	0	17	106	0	0	35	119	70	7	0	0	0	354
12:30 PM	0	0	0	11	70	0	0	29	120	75	8	0	0	0	313
12:45 PM	0	0	0	25	91	0	0	25	97	81	5	0	0	0	324
Total	0	0	0	76	366	0	0	123	459	306	31	0	0	0	1361
01:00 PM	0	0	0	19	80	0	0	38	106	61	11	0	0	0	315
01:15 PM	0	0	0	21	98	0	2	32	104	66	17	0	0	0	340
01:30 PM	0	0	0	8	78	0	0	31	98	62	11	0	0	0	288
01:45 PM	0	0	0	11	69	0	0	29	108	69	18	0	0	0	304
Total	0	0	0	59	325	0	2	130	416	258	57	0	0	0	1247
Grand Total	0	0	0	214	1061	0	2	371	1303	839	105	0	0	0	3895
Apprch %	0	0	0	16.8	83.1	0	0.2	14.2	49.8	32	4	0	0	0	
Total %	0	0	0	5.5	27.2	0	0.1	9.5	33.5	21.5	2.7	0	0	0	
Cars	0	0	0	206	1012	0	2	348	1198	830	96	0	0	0	3692
% Cars	0	0	0	96.3	95.4	0	100	93.8	91.9	98.9	91.4	0	0	0	94.8
Heavy Vehicles	0	0	0	8	49	0	0	23	105	9	9	0	0	0	203
% Heavy Vehicles	0	0	0	3.7	4.6	0	0	6.2	8.1	1.1	8.6	0	0	0	5.2

Start Time	Frontage Road NB From North				W. 4th Street From East					Frontage Road NB From South					E. Berkeley Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 11:45 AM																			
11:45 AM	0	0	0	0	18	86	0	0	104	31	108	<b>89</b>	9	237	0	0	0	0	341
12:00 PM	0	0	0	0	<b>23</b>	99	0	0	122	34	<b>123</b>	80	<b>11</b>	<b>248</b>	0	0	0	0	<b>370</b>
12:15 PM	0	0	0	0	17	<b>106</b>	0	0	<b>123</b>	<b>35</b>	119	70	7	231	0	0	0	0	354
12:30 PM	0	0	0	0	11	70	0	0	81	29	120	75	8	232	0	0	0	0	313
Total Volume	0	0	0	0	69	361	0	0	430	129	470	314	35	948	0	0	0	0	1378
% App. Total	0	0	0	0	16	84	0	0		13.6	49.6	33.1	3.7		0	0	0		
PHF	.000	.000	.000	.000	.750	.851	.000	.000	.874	.921	.955	.882	.795	.956	.000	.000	.000	.000	.931
Cars	0	0	0	0	65	341	0	0	406	123	428	309	31	891	0	0	0	0	1297
% Cars	0	0	0	0	94.2	94.5	0	0	94.4	95.3	91.1	98.4	88.6	94.0	0	0	0	0	94.1
Heavy Vehicles	0	0	0	0	4	20	0	0	24	6	42	5	4	57	0	0	0	0	81
% Heavy Vehicles	0	0	0	0	5.8	5.5	0	0	5.6	4.7	8.9	1.6	11.4	6.0	0	0	0	0	5.9



PRECISION  
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N/S: Frontage Road NB  
E/W: W. 4th Street/ E. Berkeley Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 K  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Frontage Road NB From North			W. 4th Street From East				Frontage Road NB From South				E. Berkeley Street From West			Int. Total	
	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left		
11:00 AM	0	0	0	1	2	0	0	1	15	0	0	0	0	0	0	19
11:15 AM	0	0	0	0	6	0	0	5	8	0	1	0	0	0	0	20
11:30 AM	0	0	0	2	5	0	0	2	13	2	1	0	0	0	0	25
11:45 AM	0	0	0	0	5	0	0	0	9	0	1	0	0	0	0	15
Total	0	0	0	3	18	0	0	8	45	2	3	0	0	0	0	79
12:00 PM	0	0	0	1	5	0	0	3	14	2	1	0	0	0	0	26
12:15 PM	0	0	0	2	5	0	0	1	9	2	1	0	0	0	0	20
12:30 PM	0	0	0	1	5	0	0	2	10	1	1	0	0	0	0	20
12:45 PM	0	0	0	1	5	0	0	2	12	1	0	0	0	0	0	21
Total	0	0	0	5	20	0	0	8	45	6	3	0	0	0	0	87
01:00 PM	0	0	0	0	3	0	0	1	5	0	0	0	0	0	0	9
01:15 PM	0	0	0	0	3	0	0	1	5	0	1	0	0	0	0	10
01:30 PM	0	0	0	0	1	0	0	4	3	1	1	0	0	0	0	10
01:45 PM	0	0	0	0	4	0	0	1	2	0	1	0	0	0	0	8
Total	0	0	0	0	11	0	0	7	15	1	3	0	0	0	0	37
Grand Total	0	0	0	8	49	0	0	23	105	9	9	0	0	0	0	203
Apprch %	0	0	0	14	86	0	0	15.8	71.9	6.2	6.2	0	0	0	0	
Total %	0	0	0	3.9	24.1	0	0	11.3	51.7	4.4	4.4	0	0	0	0	

Start Time	Frontage Road NB From North				W. 4th Street From East					Frontage Road NB From South					E. Berkeley Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 12:00 PM																			
12:00 PM	0	0	0	0	1	5	0	0	6	3	14	2	1	20	0	0	0	0	26
12:15 PM	0	0	0	0	2	5	0	0	7	1	9	2	1	13	0	0	0	0	20
12:30 PM	0	0	0	0	1	5	0	0	6	2	10	1	1	14	0	0	0	0	20
12:45 PM	0	0	0	0	1	5	0	0	6	2	12	1	0	15	0	0	0	0	21
Total Volume	0	0	0	0	5	20	0	0	25	8	45	6	3	62	0	0	0	0	87
% App. Total	0	0	0	0	20	80	0	0		12.9	72.6	9.7	4.8		0	0	0		
PHF	.000	.000	.000	.000	.625	1.000	.000	.000	.893	.667	.804	.750	.750	.775	.000	.000	.000	.000	.837



PRECISION  
D A T A  
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N/S: Frontage Road NB  
E/W: W. 4th Street/ E. Berkeley Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112441 K  
Site Code : 10995.00  
Start Date : 2/12/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Frontage Road NB From North				W. 4th Street From East				Frontage Road NB From South				E. Berkeley Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	0	0	0	1	0	4	0	0	0	4	0	0	0	1	10
11:15 AM	0	0	0	4	0	0	0	1	0	0	0	9	0	0	0	2	16
11:30 AM	0	0	0	1	0	0	0	1	0	0	0	5	0	0	0	0	7
11:45 AM	0	0	0	1	0	1	0	0	0	0	0	6	0	0	0	0	8
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>41</b>
12:00 PM	0	0	0	4	0	2	0	0	0	0	0	4	0	0	0	0	10
12:15 PM	0	0	0	2	0	1	0	0	0	0	0	3	0	0	0	0	6
12:30 PM	0	0	0	1	0	0	0	1	0	0	0	8	0	0	0	0	10
12:45 PM	0	0	0	1	0	0	2	0	0	0	0	5	0	0	0	0	8
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>34</b>
01:00 PM	0	0	0	11	0	0	0	0	0	1	0	8	0	0	0	0	20
01:15 PM	0	0	0	3	0	1	0	1	0	0	0	7	0	0	0	0	12
01:30 PM	0	0	0	3	0	0	0	0	0	0	0	2	0	1	0	0	6
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>40</b>
<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>31</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>63</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>115</b>
Apprch %	0	0	0	100	0	37.5	12.5	50	0	1.6	0	98.4	0	25	0	75	
Total %	0	0	0	27	0	5.2	1.7	7	0	0.9	0	54.8	0	0.9	0	2.6	

Start Time	Frontage Road NB From North					W. 4th Street From East					Frontage Road NB From South					E. Berkeley Street From West					Int. Total	
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total		
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 12:30 PM																						
12:30 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	8	8	0	0	0	0	0	0	10
12:45 PM	0	0	0	1	1	0	0	2	0	2	0	0	0	5	5	0	0	0	0	0	0	8
01:00 PM	0	0	0	11	11	0	0	0	0	0	0	1	0	8	9	0	0	0	0	0	0	20
01:15 PM	0	0	0	3	3	0	1	0	1	2	0	0	0	7	7	0	0	0	0	0	0	12
Total Volume	0	0	0	16	16	0	1	2	2	5	0	1	0	28	29	0	0	0	0	0	0	50
% App. Total	0	0	0	100		0	20	40	40		0	3.4	0	96.6		0	0	0	0	0		
PHF	.000	.000	.000	.364	.364	.000	.250	.250	.500	.625	.000	.250	.000	.875	.806	.000	.000	.000	.000	.000	.625	



PRECISION  
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N/S: Washington Street  
E: Traveler Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112722 A  
Site Code : 10995.00  
Start Date : 12/3/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Washington Street From North		Traveler Street From East		Washington Street From South		Int. Total
	Thru	Left	Right	Left	Right	Thru	
11:00 AM	2	0	58	0	0	77	137
11:15 AM	4	0	68	0	0	90	162
11:30 AM	1	0	70	0	0	59	130
11:45 AM	5	0	73	0	0	94	172
<b>Total</b>	<b>12</b>	<b>0</b>	<b>269</b>	<b>0</b>	<b>0</b>	<b>320</b>	<b>601</b>
12:00 PM	5	0	67	0	0	88	160
12:15 PM	3	0	53	0	0	90	146
12:30 PM	2	0	72	0	0	99	173
12:45 PM	4	0	76	0	1	89	170
<b>Total</b>	<b>14</b>	<b>0</b>	<b>268</b>	<b>0</b>	<b>1</b>	<b>366</b>	<b>649</b>
01:00 PM	5	0	56	0	0	90	151
01:15 PM	2	0	65	0	1	86	154
01:30 PM	5	0	73	0	0	104	182
01:45 PM	5	0	69	0	1	88	163
<b>Total</b>	<b>17</b>	<b>0</b>	<b>263</b>	<b>0</b>	<b>2</b>	<b>368</b>	<b>650</b>
<b>Grand Total</b>	<b>43</b>	<b>0</b>	<b>800</b>	<b>0</b>	<b>3</b>	<b>1054</b>	<b>1900</b>
Apprch %	100	0	100	0	0.3	99.7	
Total %	2.3	0	42.1	0	0.2	55.5	
Cars	8	0	792	0	3	996	1799
% Cars	18.6	0	99	0	100	94.5	94.7
Heavy Vehicles	35	0	8	0	0	58	101
% Heavy Vehicles	81.4	0	1	0	0	5.5	5.3

Start Time	Washington Street From North			Traveler Street From East			Washington Street From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:45 PM										
12:45 PM	4	0	4	76	0	76	1	89	90	170
01:00 PM	5	0	5	56	0	56	0	90	90	151
01:15 PM	2	0	2	65	0	65	1	86	87	154
01:30 PM	5	0	5	73	0	73	0	104	104	182
<b>Total Volume</b>	<b>16</b>	<b>0</b>	<b>16</b>	<b>270</b>	<b>0</b>	<b>270</b>	<b>2</b>	<b>369</b>	<b>371</b>	<b>657</b>
<b>% App. Total</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>0.5</b>	<b>99.5</b>	<b>99.5</b>	
<b>PHF</b>	<b>.800</b>	<b>.000</b>	<b>.800</b>	<b>.888</b>	<b>.000</b>	<b>.888</b>	<b>.500</b>	<b>.887</b>	<b>.892</b>	<b>.902</b>
Cars	4	0	4	266	0	266	2	345	347	617
% Cars	25.0	0	25.0	98.5	0	98.5	100	93.5	93.5	93.9
Heavy Vehicles	12	0	12	4	0	4	0	24	24	40
% Heavy Vehicles	75.0	0	75.0	1.5	0	1.5	0	6.5	6.5	6.1



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N/S: Washington Street  
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City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112722 A  
Site Code : 10995.00  
Start Date : 12/3/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Washington Street From North		Traveler Street From East		Washington Street From South		Int. Total
	Thru	Left	Right	Left	Right	Thru	
11:00 AM	1	0	0	0	0	1	2
11:15 AM	4	0	1	0	0	2	7
11:30 AM	1	0	0	0	0	9	10
11:45 AM	5	0	0	0	0	2	7
<b>Total</b>	<b>11</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>26</b>
12:00 PM	2	0	0	0	0	7	9
12:15 PM	3	0	3	0	0	4	10
12:30 PM	2	0	0	0	0	5	7
12:45 PM	4	0	1	0	0	5	10
<b>Total</b>	<b>11</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>36</b>
01:00 PM	3	0	0	0	0	6	9
01:15 PM	1	0	2	0	0	8	11
01:30 PM	4	0	1	0	0	5	10
01:45 PM	5	0	0	0	0	4	9
<b>Total</b>	<b>13</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>39</b>
<b>Grand Total</b>	<b>35</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>58</b>	<b>101</b>
Apprch %	100	0	100	0	0	100	
Total %	34.7	0	7.9	0	0	57.4	

Start Time	Washington Street From North			Traveler Street From East			Washington Street From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:45 PM										
12:45 PM	4	0	4	1	0	1	0	5	5	10
01:00 PM	3	0	3	0	0	0	0	6	6	9
01:15 PM	1	0	1	2	0	2	0	8	8	11
<b>01:30 PM</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>10</b>
<b>Total Volume</b>	<b>12</b>	<b>0</b>	<b>12</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>24</b>	<b>24</b>	<b>40</b>
<b>% App. Total</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>PHF</b>	<b>.750</b>	<b>.000</b>	<b>.750</b>	<b>.500</b>	<b>.000</b>	<b>.500</b>	<b>.000</b>	<b>.750</b>	<b>.750</b>	<b>.909</b>



PRECISION  
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File Name : 112722 A  
Site Code : 10995.00  
Start Date : 12/3/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Washington Street From North			Traveler Street From East			Washington Street From South			Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	
11:00 AM	1	0	4	0	0	28	0	2	15	50
11:15 AM	0	0	1	0	1	25	0	2	7	36
11:30 AM	0	0	1	1	0	31	0	2	12	47
11:45 AM	2	0	7	0	0	26	1	1	15	52
<b>Total</b>	<b>3</b>	<b>0</b>	<b>13</b>	<b>1</b>	<b>1</b>	<b>110</b>	<b>1</b>	<b>7</b>	<b>49</b>	<b>185</b>
12:00 PM	0	0	3	0	0	34	0	2	17	56
12:15 PM	1	1	0	0	0	61	0	0	6	69
12:30 PM	1	0	0	0	0	50	0	2	4	57
12:45 PM	0	2	2	0	1	44	0	2	10	61
<b>Total</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>189</b>	<b>0</b>	<b>6</b>	<b>37</b>	<b>243</b>
01:00 PM	0	0	4	1	0	44	0	0	15	64
01:15 PM	1	0	4	2	0	41	0	2	3	53
01:30 PM	2	0	1	0	0	53	0	1	10	67
01:45 PM	0	0	3	2	0	64	0	1	12	82
<b>Total</b>	<b>3</b>	<b>0</b>	<b>12</b>	<b>5</b>	<b>0</b>	<b>202</b>	<b>0</b>	<b>4</b>	<b>40</b>	<b>266</b>
<b>Grand Total</b>	<b>8</b>	<b>3</b>	<b>30</b>	<b>6</b>	<b>2</b>	<b>501</b>	<b>1</b>	<b>17</b>	<b>126</b>	<b>694</b>
Apprch %	19.5	7.3	73.2	1.2	0.4	98.4	0.7	11.8	87.5	
Total %	1.2	0.4	4.3	0.9	0.3	72.2	0.1	2.4	18.2	

Start Time	Washington Street From North				Traveler Street From East				Washington Street From South				Int. Total
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 01:00 PM													
01:00 PM	0	0	4	4	1	0	44	45	0	0	15	15	64
01:15 PM	1	0	4	5	2	0	41	43	0	2			
<b>01:30 PM</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>53</b>	<b>53</b>	<b>0</b>	<b>1</b>	<b>10</b>	<b>11</b>	<b>67</b>
01:45 PM	0	0	3	3	2	0	64	66	0	1	12	13	82
Total Volume	3	0	12	15	5	0	202	207	0	4	40	44	266
% App. Total	20	0	80		2.4	0	97.6		0	9.1	90.9		
PHF	.375	.000	.750	.750	.625	.000	.789	.784	.000	.500	.667	.733	.811



PRECISION  
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Email: datarequests@pdillc.com

N/S: Washington Street  
E/W: East Berkeley Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112722 B  
Site Code : 10995.00  
Start Date : 12/3/2011  
Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Washington Street From North			East Berkeley Street From East			Washington Street From South				East Berkeley Street From West			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	
11:00 AM	0	3	0	10	116	20	0	55	20	0	0	0	0	224
11:15 AM	0	6	0	17	118	24	0	60	21	0	0	0	0	246
11:30 AM	0	2	0	21	123	24	0	38	12	0	0	0	0	220
11:45 AM	0	5	0	27	124	23	0	54	18	2	0	0	0	253
<b>Total</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>75</b>	<b>481</b>	<b>91</b>	<b>0</b>	<b>207</b>	<b>71</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>943</b>
12:00 PM	2	2	0	19	132	22	0	60	18	0	0	0	0	255
12:15 PM	0	4	0	24	131	19	0	55	26	1	0	0	0	260
12:30 PM	0	3	0	36	126	22	0	62	22	0	0	0	0	271
12:45 PM	0	3	0	20	142	25	0	48	23	0	0	0	0	261
<b>Total</b>	<b>2</b>	<b>12</b>	<b>0</b>	<b>99</b>	<b>531</b>	<b>88</b>	<b>0</b>	<b>225</b>	<b>89</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1047</b>
01:00 PM	0	6	0	22	124	19	0	58	19	1	0	0	0	249
01:15 PM	0	3	0	19	127	28	0	55	23	0	0	0	0	255
01:30 PM	0	6	0	21	135	23	0	57	26	0	0	0	0	268
01:45 PM	0	4	0	26	113	18	0	52	12	2	0	0	0	227
<b>Total</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>88</b>	<b>499</b>	<b>88</b>	<b>0</b>	<b>222</b>	<b>80</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>999</b>
<b>Grand Total</b>	<b>2</b>	<b>47</b>	<b>0</b>	<b>262</b>	<b>1511</b>	<b>267</b>	<b>0</b>	<b>654</b>	<b>240</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2989</b>
Apprch %	4.1	95.9	0	12.8	74.1	13.1	0	72.7	26.7	0.7	0	0	0	
Total %	0.1	1.6	0	8.8	50.6	8.9	0	21.9	8	0.2	0	0	0	
Cars	2	10	0	248	1474	261	0	608	237	6	0	0	0	2846
% Cars	100	21.3	0	94.7	97.6	97.8	0	93	98.8	100	0	0	0	95.2
Heavy Vehicles	0	37	0	14	37	6	0	46	3	0	0	0	0	143
% Heavy Vehicles	0	78.7	0	5.3	2.4	2.2	0	7	1.2	0	0	0	0	4.8

Start Time	Washington Street From North				East Berkeley Street From East				Washington Street From South					East Berkeley Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 12:00 PM																		
12:00 PM	2	2	0	4	19	132	22	173	0	60	18	0	78	0	0	0	0	255
12:15 PM	0	4	0	4	24	131	19	174	0	55	26	1	84	0	0	0	0	271
<b>12:30 PM</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>36</b>	<b>126</b>	<b>22</b>	<b>184</b>	<b>0</b>	<b>62</b>	<b>22</b>	<b>0</b>	<b>84</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>271</b>
12:45 PM	0	3	0	3	20	142	25	187	0	48	23	0	71	0	0	0	0	261
Total Volume	2	12	0	14	99	531	88	718	0	225	89	1	315	0	0	0	0	1047
% App. Total	14.3	85.7	0		13.8	74	12.3		0	71.4	28.3	0.3		0	0	0		
PHF	.250	.750	.000	.875	.688	.935	.880	.960	.000	.907	.856	.250	.938	.000	.000	.000	.000	.966
Cars	2	2	0	4	94	517	86	697	0	208	88	1	297	0	0	0	0	998
% Cars	100	16.7	0	28.6	94.9	97.4	97.7	97.1	0	92.4	98.9	100	94.3	0	0	0	0	95.3
Heavy Vehicles	0	10	0	10	5	14	2	21	0	17	1	0	18	0	0	0	0	49
% Heavy Vehicles	0	83.3	0	71.4	5.1	2.6	2.3	2.9	0	7.6	1.1	0	5.7	0	0	0	0	4.7





PRECISION  
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N/S: Washington Street  
E/W: East Berkeley Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112722 B  
Site Code : 10995.00  
Start Date : 12/3/2011  
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Washington Street From North			East Berkeley Street From East			Washington Street From South				East Berkeley Street From West			Int. Total	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left		
11:00 AM	0	2	0	0	3	1	0	3	1	0	0	0	0	0	10
11:15 AM	0	5	0	0	1	1	0	2	0	0	0	0	0	0	9
11:30 AM	0	2	0	4	2	0	0	5	0	0	0	0	0	0	13
11:45 AM	0	5	0	0	2	2	0	2	1	0	0	0	0	0	12
<b>Total</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>4</b>	<b>8</b>	<b>4</b>	<b>0</b>	<b>12</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>44</b>
12:00 PM	0	0	0	1	5	1	0	6	0	0	0	0	0	0	13
12:15 PM	0	4	0	2	2	1	0	2	0	0	0	0	0	0	11
12:30 PM	0	3	0	2	6	0	0	4	1	0	0	0	0	0	16
12:45 PM	0	3	0	0	1	0	0	5	0	0	0	0	0	0	9
<b>Total</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>5</b>	<b>14</b>	<b>2</b>	<b>0</b>	<b>17</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>49</b>
01:00 PM	0	3	0	1	5	0	0	5	0	0	0	0	0	0	14
01:15 PM	0	2	0	2	1	0	0	6	0	0	0	0	0	0	11
01:30 PM	0	4	0	1	4	0	0	3	0	0	0	0	0	0	12
01:45 PM	0	4	0	1	5	0	0	3	0	0	0	0	0	0	13
<b>Total</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>5</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>
<b>Grand Total</b>	<b>0</b>	<b>37</b>	<b>0</b>	<b>14</b>	<b>37</b>	<b>6</b>	<b>0</b>	<b>46</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>143</b>
Apprch %	0	100	0	24.6	64.9	10.5	0	93.9	6.1	0	0	0	0	0	
Total %	0	25.9	0	9.8	25.9	4.2	0	32.2	2.1	0	0	0	0	0	

Start Time	Washington Street From North				East Berkeley Street From East				Washington Street From South					East Berkeley Street From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 11:45 AM																		
11:45 AM	0	5	0	5	0	2	2	4	0	2	1	0	3	0	0	0	0	12
12:00 PM	0	0	0	0	1	5	1	7	0	6	0	0	6	0	0	0	0	13
12:15 PM	0	4	0	4	2	2	1	5	0	2	0	0	2	0	0	0	0	11
12:30 PM	0	3	0	3	2	6	0	8	0	4	1	0	5	0	0	0	0	16
Total Volume	0	12	0	12	5	15	4	24	0	14	2	0	16	0	0	0	0	52
% App. Total	0	100	0		20.8	62.5	16.7		0	87.5	12.5	0		0	0	0		
PHF	.000	.600	.000	.600	.625	.625	.500	.750	.000	.583	.500	.000	.667	.000	.000	.000	.000	.813



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N/S: Washington Street  
E/W: East Berkeley Street  
City, State: Boston, MA  
Client: VHB/ E. Guidoboni

File Name : 112722 B  
Site Code : 10995.00  
Start Date : 12/3/2011  
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Washington Street From North				East Berkeley Street From East				Washington Street From South				East Berkeley Street From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	1	0	27	0	0	0	43	1	2	0	30	0	0	0	16	120
11:15 AM	1	1	0	22	0	2	0	58	0	1	0	33	0	0	0	25	143
11:30 AM	0	0	0	35	2	2	1	40	0	0	0	28	0	2	0	34	144
11:45 AM	0	0	0	40	0	1	0	54	0	0	0	42	0	0	1	30	168
<b>Total</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>124</b>	<b>2</b>	<b>5</b>	<b>1</b>	<b>195</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>133</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>105</b>	<b>575</b>
12:00 PM	0	3	0	29	1	4	0	35	0	1	1	10	0	0	0	16	100
12:15 PM	0	1	0	23	0	0	0	42	0	0	0	40	0	0	1	30	137
12:30 PM	0	1	1	25	0	0	1	44	0	2	0	31	0	0	0	14	119
12:45 PM	1	0	0	17	0	3	0	31	0	1	1	25	0	0	1	21	101
<b>Total</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>94</b>	<b>1</b>	<b>7</b>	<b>1</b>	<b>152</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>106</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>81</b>	<b>457</b>
01:00 PM	0	1	0	29	0	0	0	41	0	1	0	34	0	0	0	26	132
01:15 PM	1	0	0	19	0	3	0	57	1	2	0	34	0	0	0	10	127
01:30 PM	0	0	1	20	0	1	0	71	0	0	0	38	0	1	0	23	155
01:45 PM	2	0	0	35	0	3	0	50	0	1	0	39	1	0	0	24	155
<b>Total</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>103</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>219</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>145</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>83</b>	<b>569</b>
<b>Grand Total</b>	<b>5</b>	<b>8</b>	<b>2</b>	<b>321</b>	<b>3</b>	<b>19</b>	<b>2</b>	<b>566</b>	<b>2</b>	<b>11</b>	<b>2</b>	<b>384</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>269</b>	<b>1601</b>
Apprch %	1.5	2.4	0.6	95.5	0.5	3.2	0.3	95.9	0.5	2.8	0.5	96.2	0.4	1.1	1.1	97.5	
Total %	0.3	0.5	0.1	20	0.2	1.2	0.1	35.4	0.1	0.7	0.1	24	0.1	0.2	0.2	16.8	

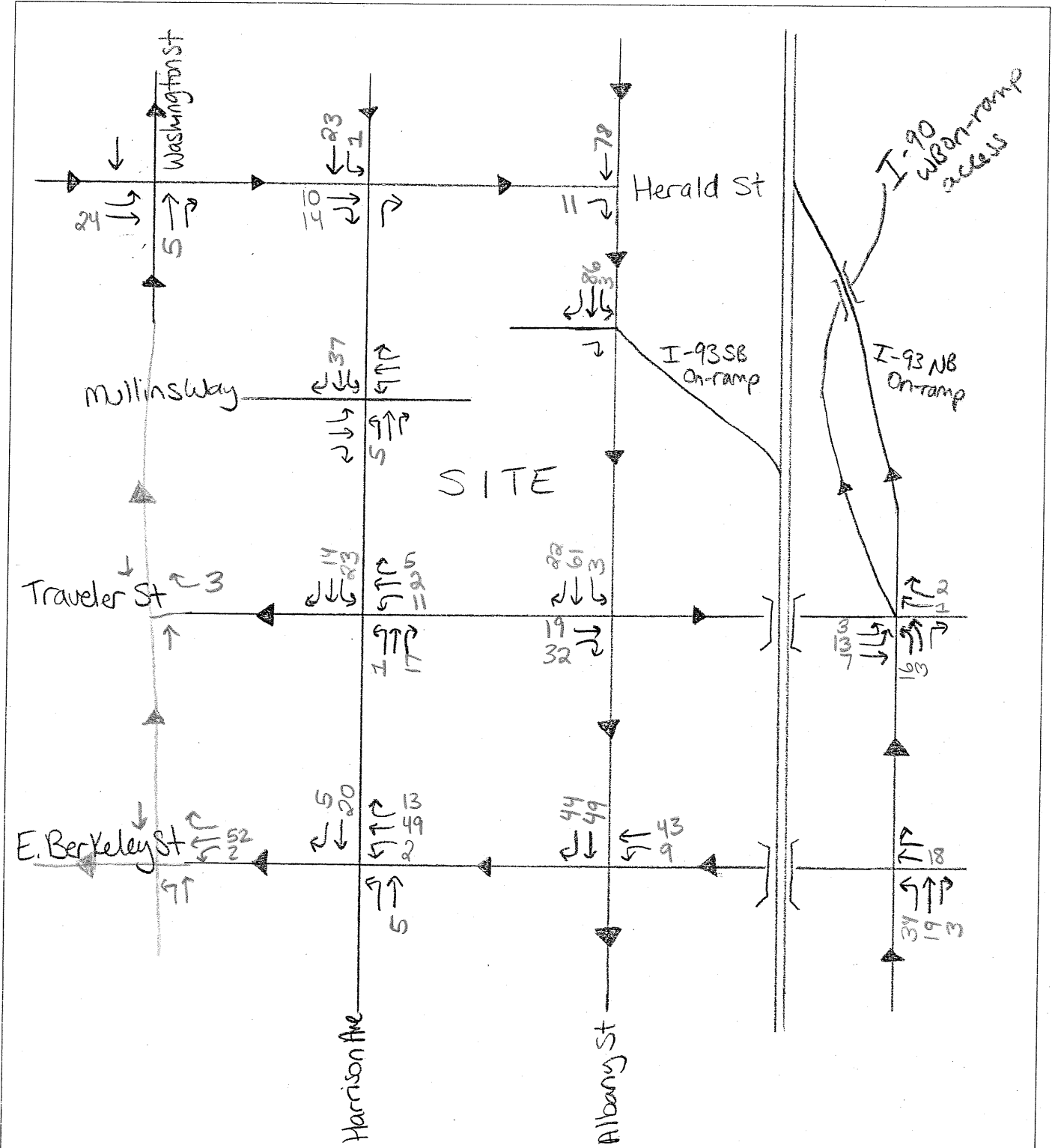
Start Time	Washington Street From North					East Berkeley Street From East					Washington Street From South					East Berkeley Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	0	1	0	27	28	0	0	0	43	43	1	2	0	30	33	0	0	0	16	16	120
11:15 AM	1	1	0	22	24	0	2	0	58	60	0	1	0	33	34	0	0	0	25	25	143
11:30 AM	0	0	0	35	35	2	2	1			0	0	0			0	2	0	34	36	144
11:45 AM	0	0	0	40	40	0	1	0	54	55	0	0	0	42	42	0	0	1			168
Total Volume	1	2	0	124	127	2	5	1	195	203	1	3	0	133	137	0	2	1	105	108	575
% App. Total	0.8	1.6	0	97.6		1	2.5	0.5	96.1		0.7	2.2	0	97.1		0	1.9	0.9	97.2		
PHF	.250	.500	.000	.775	.794	.250	.625	.250	.841	.846	.250	.375	.000	.792	.815	.000	.250	.250	.772	.750	.856

# Background Project Networks



# Computations

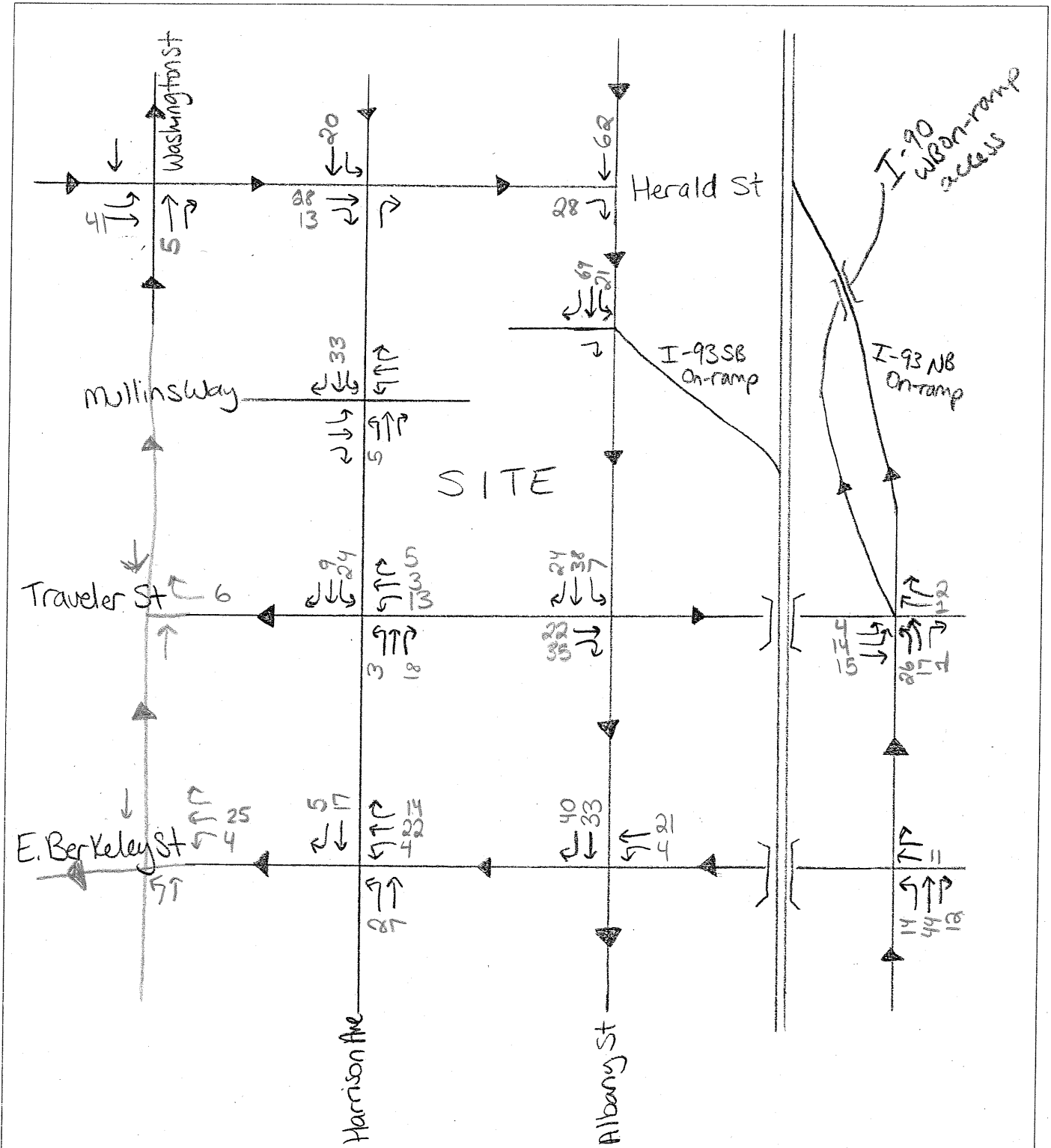
Project: Boston Herald Project # 10995.00  
 Location: South Boston Sheet of  
 Calculated by: ELG Date: 4/20/11  
 Checked by: Date:  
 Title: Total BG projects AM





# Computations

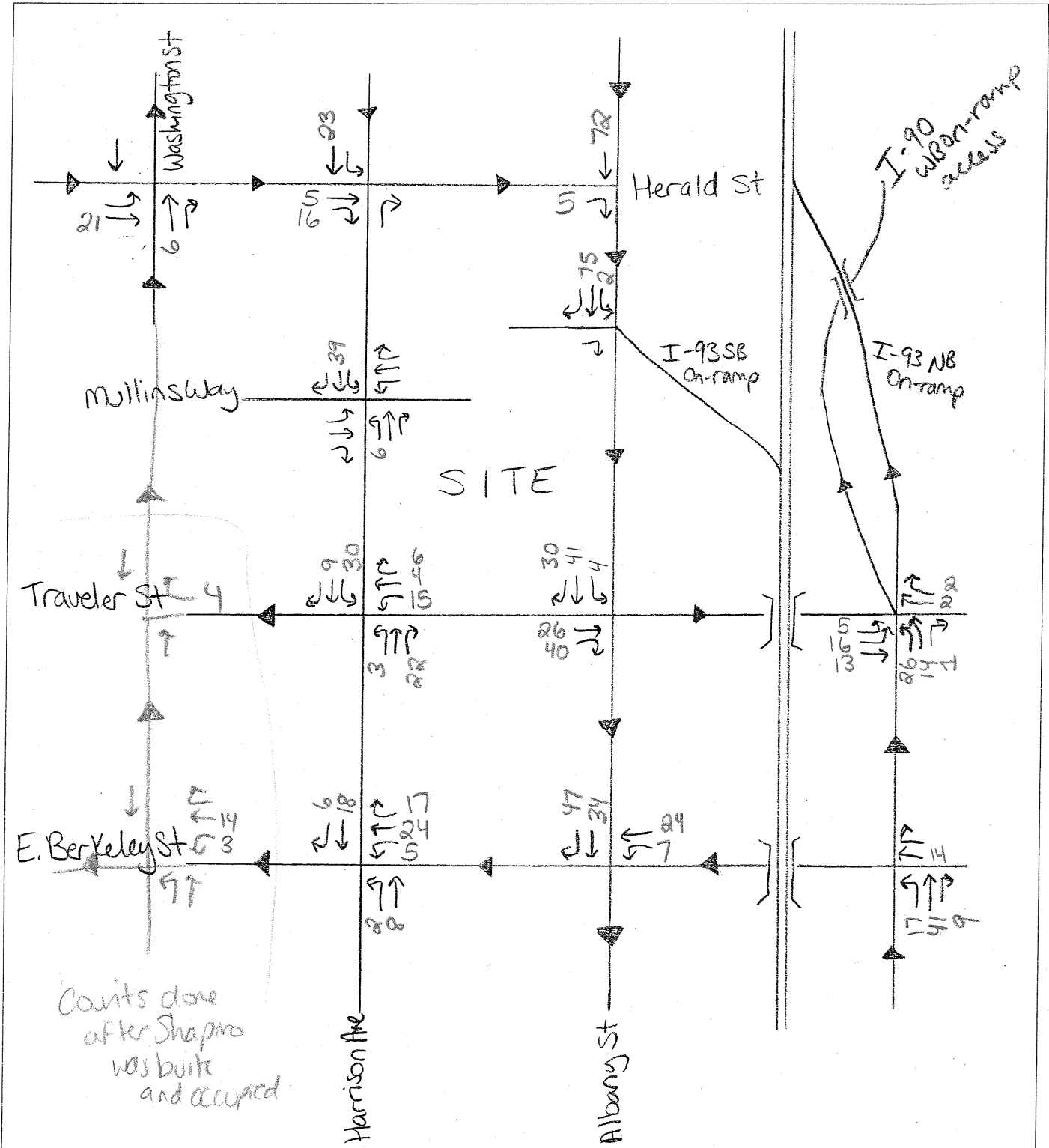
Project: Boston Herald Project # 10995.00  
 Location: South Boston Sheet of  
 Calculated by: ELG Date: 4/21/11  
 Checked by: Date:  
 Title: Total BG Projects PM





# Computations

Project: Boston Herald Project # 10995.00  
 Location: South Boston Sheet of  
 Calculated by: ELG Date: 4/21/11  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title: Total BG Projects SAT



# Trip Generation

# Site Trip Networks

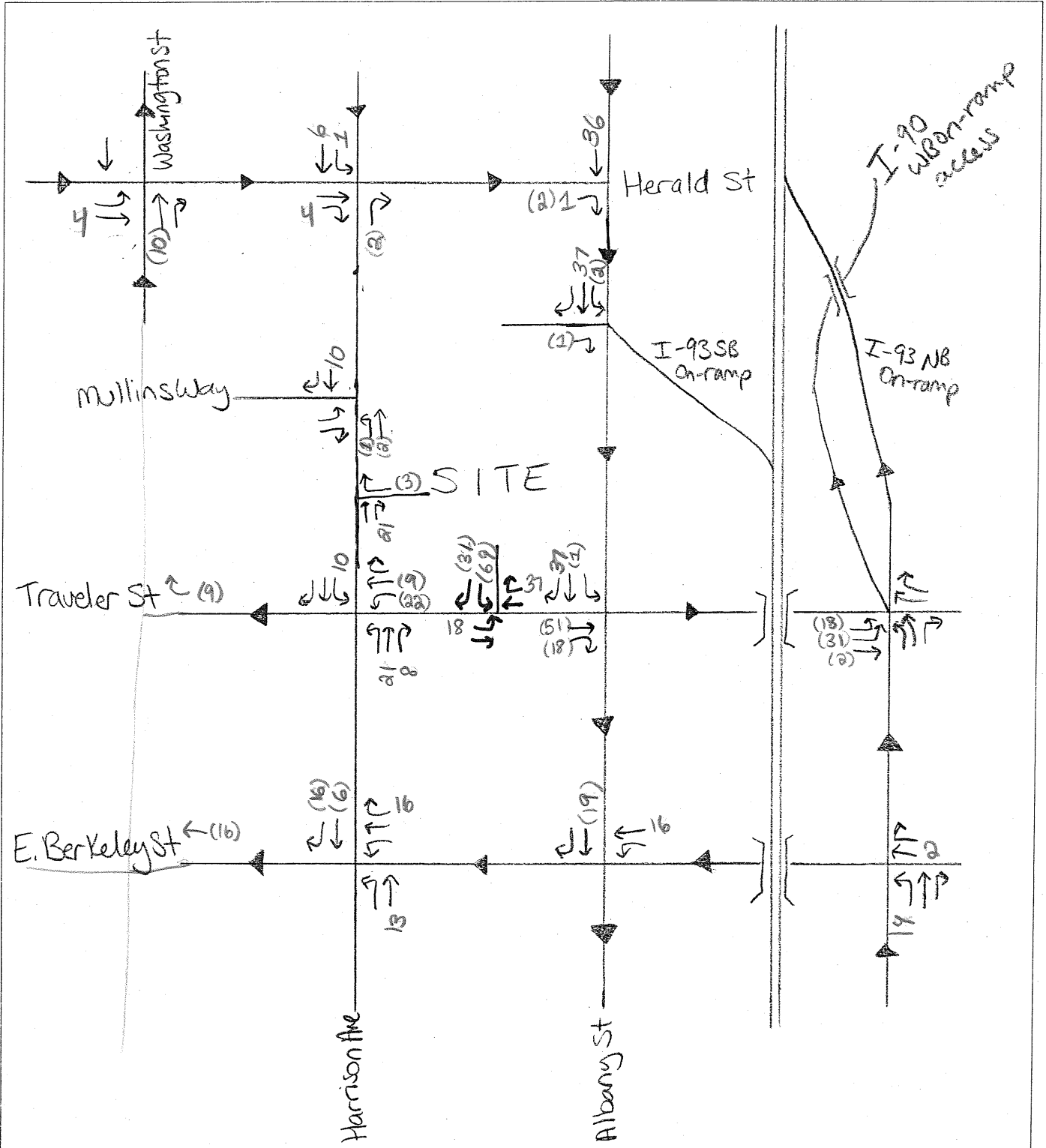




# Computations

Primary  
 In 76  
 Out (104)  
 Total 180

Project: Boston Herald Project # 10995.00  
 Location: South Boston Sheet of  
 Calculated by: ELG Date: 12/23/11  
 Checked by: Date:  
 Title: AM Primary site Trips - Full Program

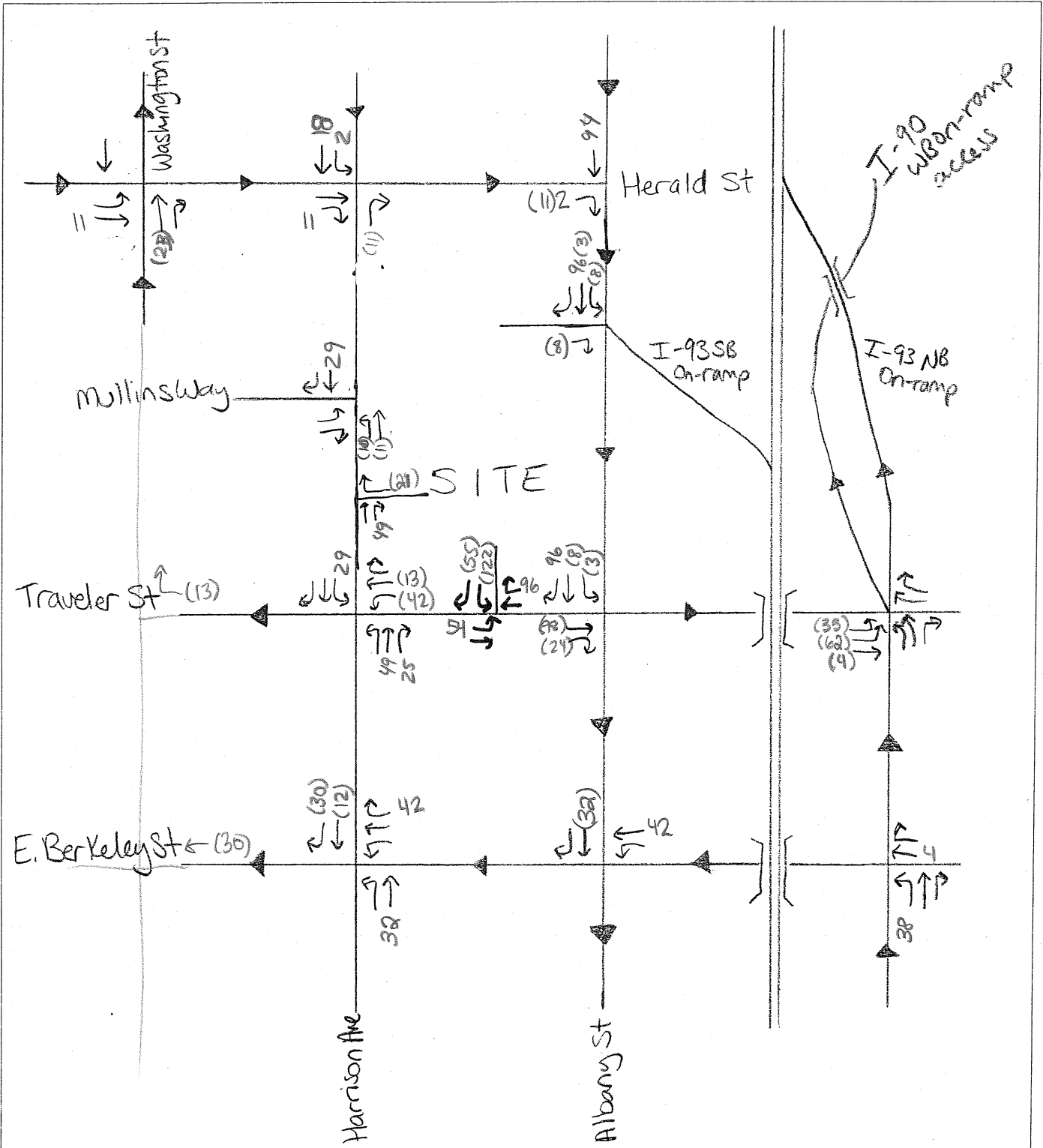




# Computations

Primary  
 In 199  
 Out (206)  
 -----  
 Total 405

Project: Boston Herald Project # 10995.00  
 Location: South Boston Sheet of  
 Calculated by: ELG Date: 12/23/11  
 Checked by: Date:  
 Title: PM Primary site trips - Full Program





# Computations

In Primary  
 Out 234  
 (225)  
 -----  
 Total 459

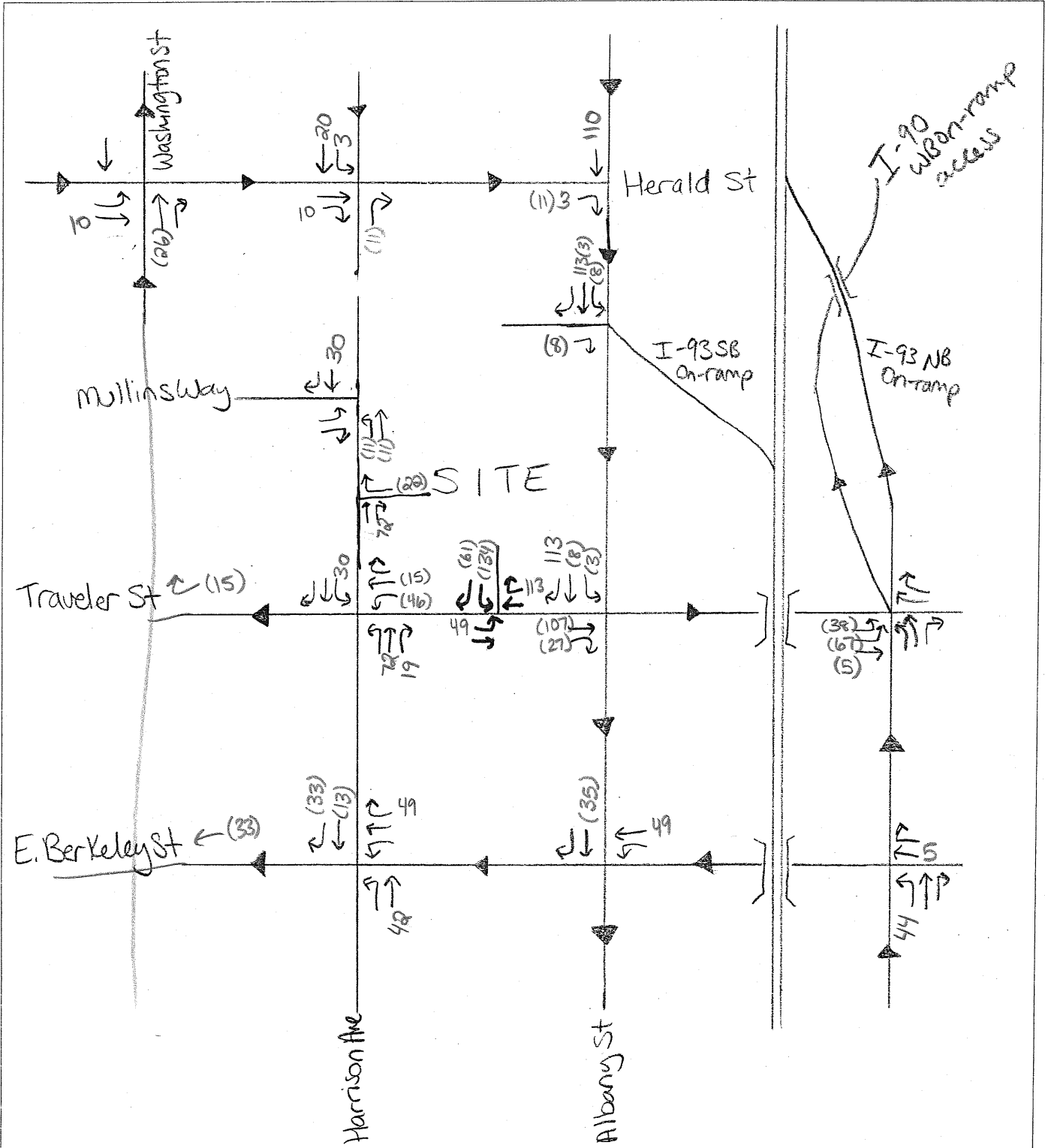
Project: Boston Herald Project # 10995.00

Location: South Boston Sheet of

Calculated by: ELG Date: 12/23/11

Checked by: Date:

Title SAT Primary Site Trips - Full Program





# Computations

IN (OUT)  
11 (11)

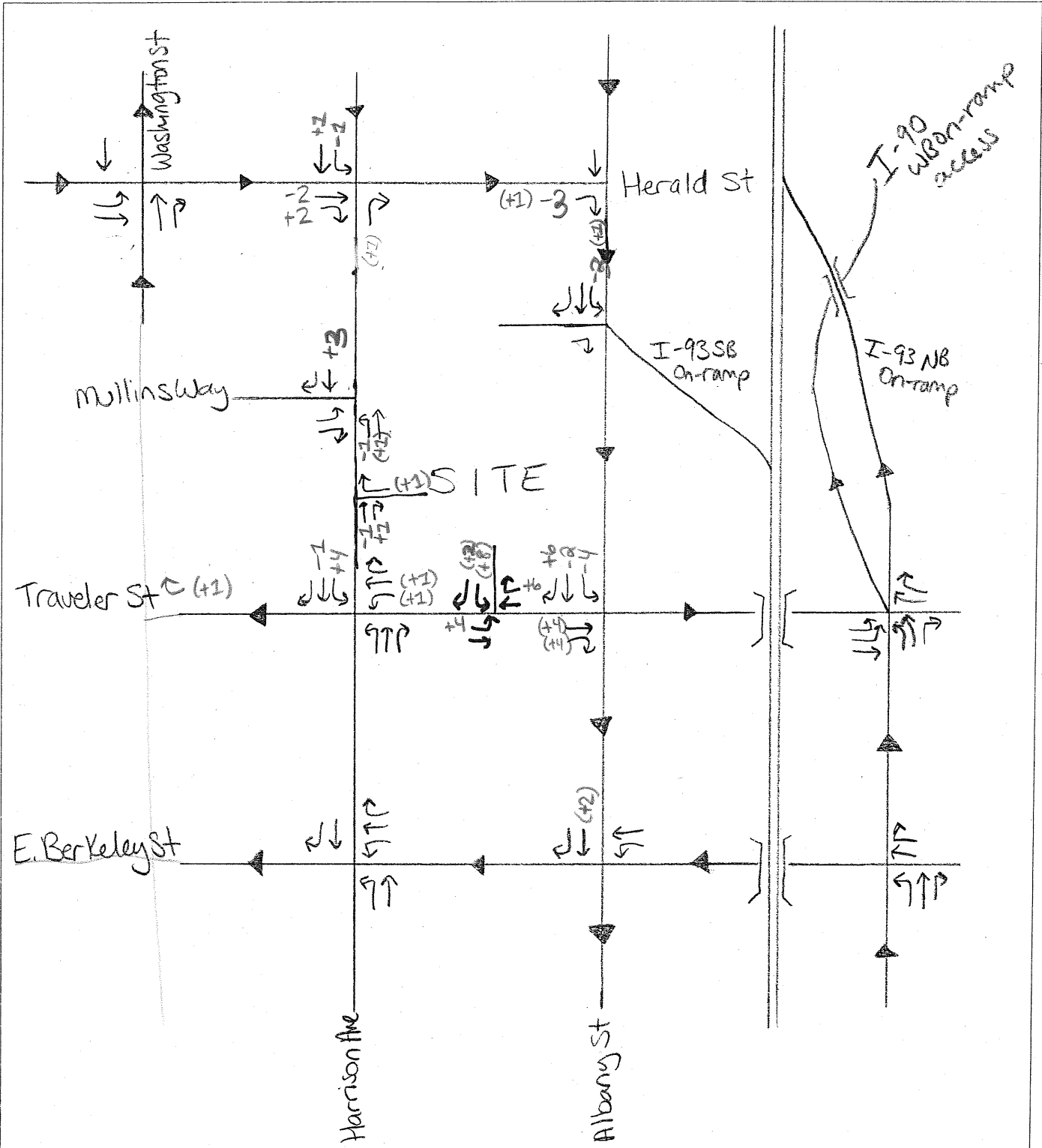
Project: Boston Herald Project # 10995.00

Location: South Boston Sheet of

Calculated by: ELG Date: 12/27/11

Checked by: Date:

Title: AM Pass-By Trips - Full Program

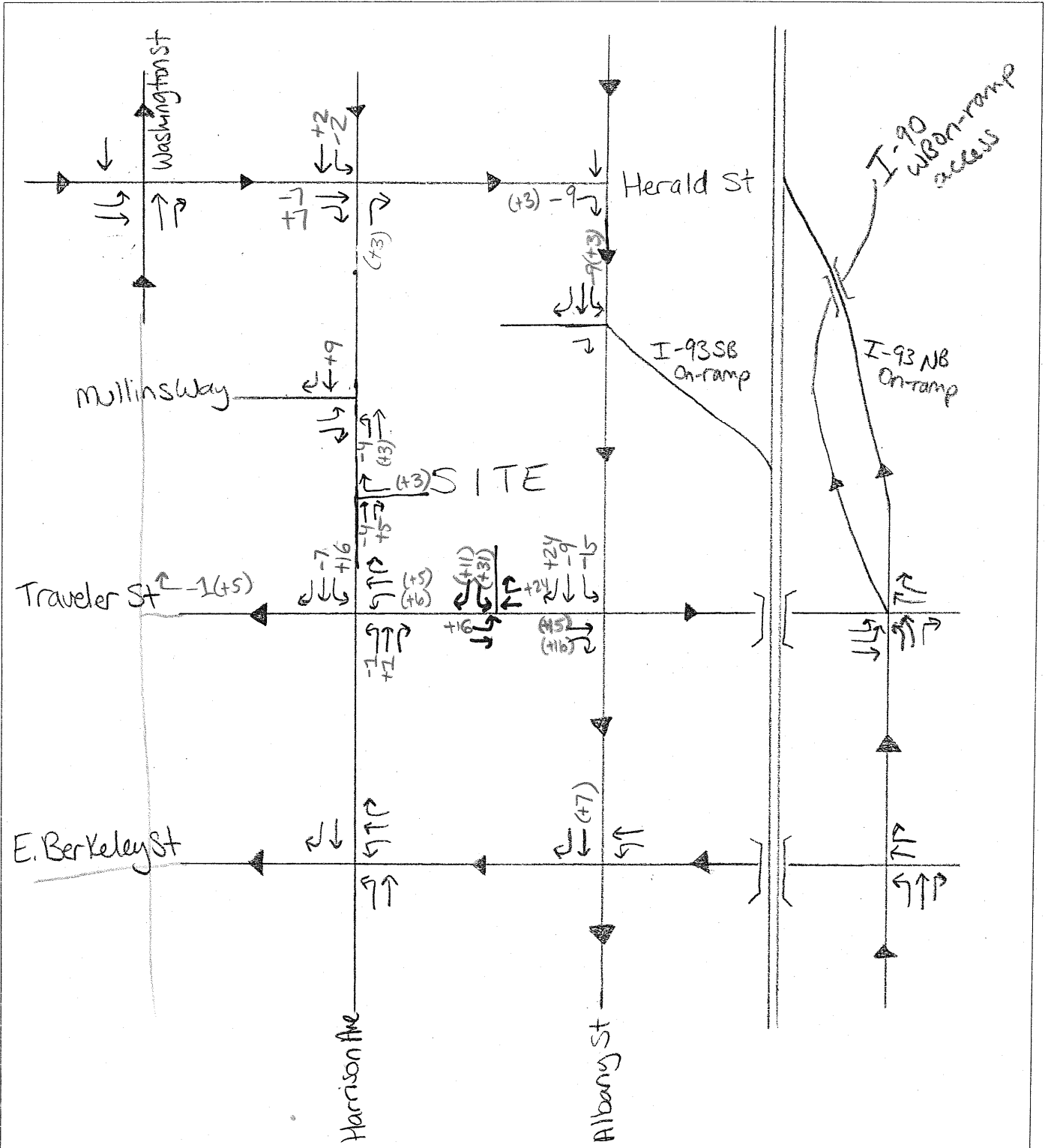




# Computations

N (out)  
45 (45)

Project: Boston Herald Project # 10995.00  
 Location: South Boston Sheet of  
 Calculated by: ELG Date: 12/27/11  
 Checked by: Date:  
 Title: PM Pass-By Trips - Full Program





# Computations

IN (OUT)  
S6 (S6)

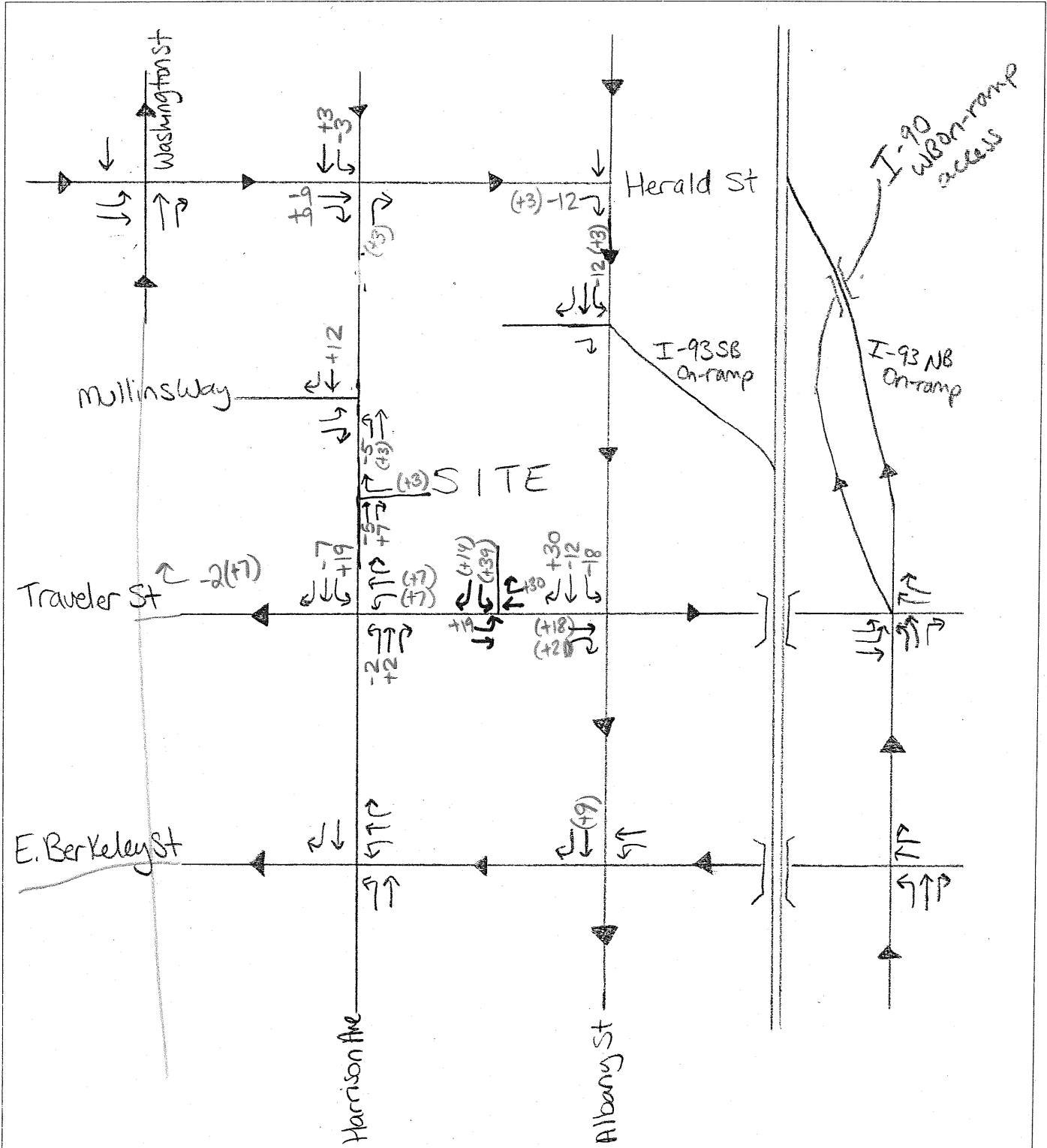
Project: Boston Herald Project # 10995.00

Location: South Boston Sheet of

Calculated by: ELG Date: 12/27/11

Checked by: Date:

Title SAT Pass-By Trips - Full Program





# Computations

Project: Boston Herald Project # 10995.00

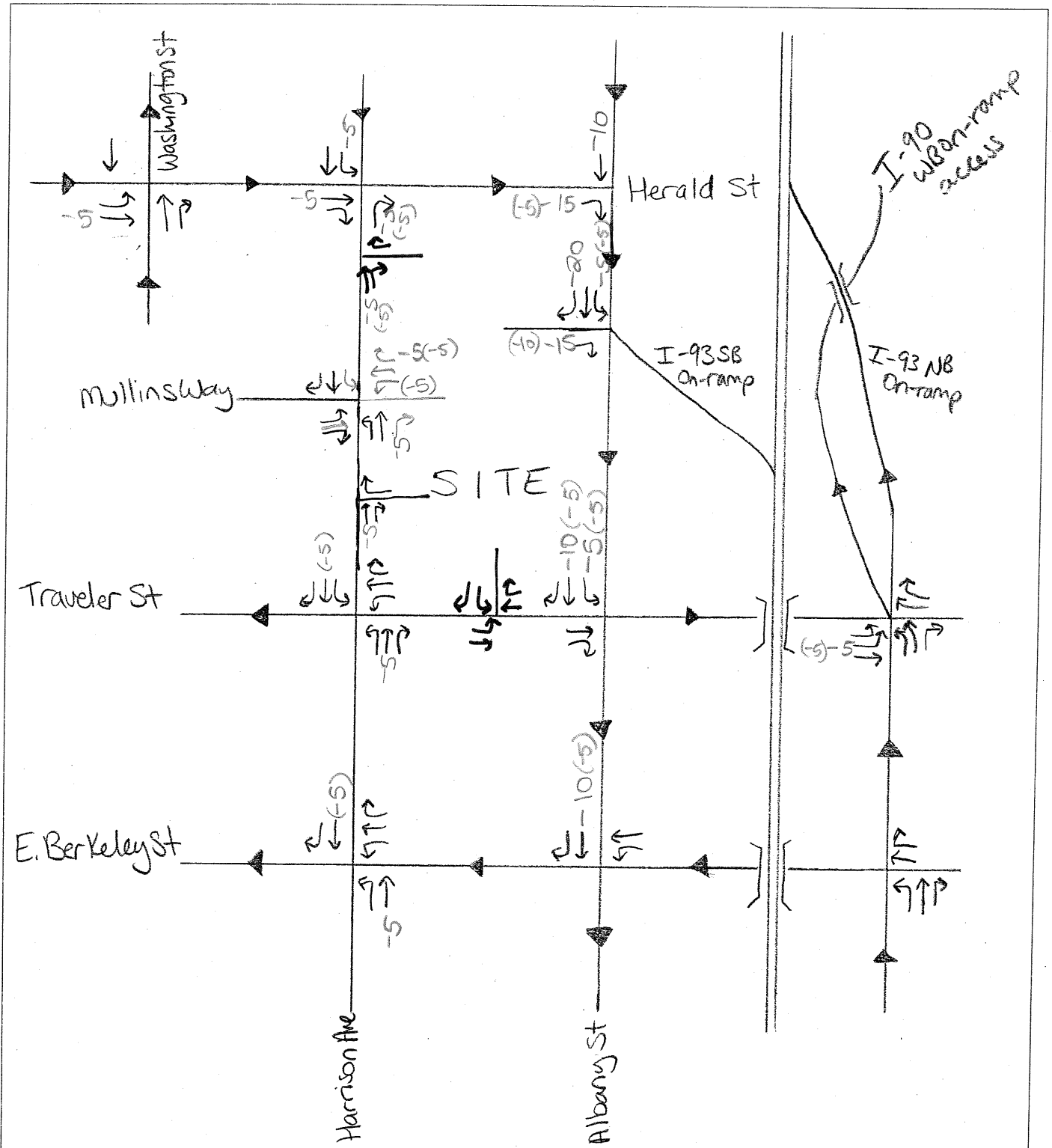
Location: South Boston Sheet of

Calculated by: ELG Date: 4/27/11

Checked by: Date:

Title: Existing site trips removal

AM(CPM)[SAT]  
↑  
Neg in all  
aunts



# Trip Generation Calculations



Pass-By Site Trips Distributed to network	Total Site Trips Distributed to network
--	--

### Boston Herald Redevelopment Program Site Trips

Pass-by Rate = 0.25

	Size	Unadjusted Vehicle Trips	VOR	Person Trips	Transit Share	Walk/Other Share	Vehicle Share	Local VOR	Transit Trips	Walk/Other Trips	Vehicle Share Raw Trips	Retail Pass-By Vehicles	NET NEW Vehicle Trips
<b>Weekday Daily Residential - Apts</b>													
In	471	1,489	1.1	1,638	17%	26%	57%	1.1	278	426	849		849
Out	units	1,489	1.1	1,638	17%	26%	57%	1.1	278	426	849		849
<b>Weekday Daily Supermarket</b>													
In	30.000	1,534	1.8	2,760	12%	35%	53%	1.8	331	966	1,626	406	1,220
Out	ksf	1,534	1.8	2,760	12%	35%	53%	1.8	331	966	813	203	610
<b>Weekday Daily Retail</b>													
In	54.845	1,973	1.8	3,551	12%	35%	53%	1.8	426	1,243	2,091	522	1,569
Out	ksf	1,973	1.8	3,551	12%	35%	53%	1.8	426	1,243	1,045	261	784
<b>Total Weekday Daily</b>													
In		4,995							1,036	2,635	2,707	464	2,243
Out		4,995							1,036	2,635	2,707	464	2,243
<b>AM Residential - Apts</b>													
In	471	47	1.1	52	19%	27%	54%	1.1	10	14	25	0	25
Out	units	188	1.1	206	29%	27%	44%	1.1	60	56	83	0	83
<b>AM Supermarket</b>													
In	30.000	66	1.8	118	13%	36%	51%	1.8	15	43	34	6	28
Out	ksf	42	1.8	76	21%	37%	42%	1.8	16	28	18	6	12
<b>AM Retail</b>													
In	54.845	55	1.8	99	13%	36%	51%	1.8	13	36	28	5	23
Out	ksf	35	1.8	63	21%	37%	42%	1.8	13	23	15	5	10
<b>Total AM Peak Hour</b>													
In		168							38	92	87	11	76
Out		265							89	107	115	11	104
<b>PM Residential - Apts</b>													
In	471	180	1.1	198	29%	27%	44%	1.1	57	53	79	0	79
Out	units	97	1.1	107	19%	27%	54%	1.1	20	29	52	0	52
<b>PM Supermarket</b>													
In	30.000	211	1.8	380	21%	37%	42%	1.8	80	140	89	24	65
Out	ksf	203	1.8	365	13%	36%	51%	1.8	47	131	103	24	79
<b>PM Retail</b>													
In	54.845	180	1.8	325	21%	37%	42%	1.8	68	120	76	21	55
Out	ksf	188	1.8	338	13%	36%	51%	1.8	44	122	96	21	75
<b>Total PM Peak Hour</b>													
In		571							205	314	244	45	199
Out		487							112	282	251	45	206
<b>SAT Daily Residential - Apts</b>													
In	471	1,721	1.1	1,893	17%	26%	57%	1.1	322	492	981	0	981
Out	units	1,721	1.1	1,893	17%	26%	57%	1.1	322	492	981	0	981
<b>SAT Daily Supermarket</b>													
In	30.000	2,664	1.8	4,795	12%	35%	53%	1.8	575	1,678	1,412	353	1,059
Out	ksf	2,664	1.8	4,795	12%	35%	53%	1.8	575	1,678	1,412	353	1,059
<b>SAT Daily Retail</b>													
In	54.845	2,693	1.8	4,847	12%	35%	53%	1.8	582	1,696	1,427	357	1,070
Out	ksf	2,693	1.8	4,847	12%	35%	53%	1.8	582	1,696	1,427	357	1,070
<b>Total SAT Daily</b>													
In		7,077							1,479	3,867	3,820	710	3,110
Out		7,077							1,479	3,867	3,820	710	3,110
<b>SAT Residential - Apts</b>													
In	471	106	1.1	117	17%	26%	57%	1.1	20	30	61	0	61
Out	units	106	1.1	117	12%	26%	62%	1.1	14	30	66	0	66
<b>SAT Supermarket</b>													
In	30.000	166	1.8	299	12%	34%	54%	1.8	36	102	90	22	68
Out	ksf	159	1.8	287	11%	35%	54%	1.8	32	100	86	22	64
<b>SAT Retail</b>													
In	54.845	259	1.8	466	12%	34%	54%	1.8	56	158	140	34	106
Out	ksf	239	1.8	430	11%	35%	54%	1.8	47	151	129	34	95
<b>Total SAT Peak Hour</b>													
In		531							112	290	290	56	234
Out		505							93	281	281	56	225

Notes:

- LUC 820 - Retail
- LUC 220 Apartments
- LUC 850 - Supermarket
- Mode Split: BTD Area 15
- VOR for Residential based on Census Tract data for area 712 and Retail based on local data

# ITE Trip Generation by Land-use

**ITE TRIP GENERATION WORKSHEET**  
*(8th Edition, Updated 2008)*

**LANDUSE:** Apartment  
**LANDUSE CODE:** 220

Independent Variable --- Number of Units

**JOB NAME:**  
**JOB NUMBER:**

**Peak Hour Traffic on Adjacent Street:** 471 units

**WEEKDAY**

RATES:	# Studies	R <sup>2</sup>	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	88	0.87	6.65	1.27	12.50	210	0	1,000	50%	50%
AM PEAK (ADJACENT ST)	78	0.83	0.51	0.10	1.02	235	0	1,100	20%	80%
PM PEAK (ADJACENT ST)	90	0.77	0.62	0.10	1.64	233	0	1,100	65%	35%

TRIPS:		BY AVERAGE			BY REGRESSION		
		Total	Enter	Exit	Total	Enter	Exit
	DAILY	3,132	1,566	1,566	2978	1489	1489
	AM PEAK (ADJACENT ST)	240	48	192	235	47	188
	PM PEAK (ADJACENT ST)	292	190	102	277	180	97

**SATURDAY**

RATES:	# Studies	R <sup>2</sup>	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	15	0.85	6.39	2.84	8.40	175	65	360	50%	50%
PEAK OF GENERATOR	14	0.56	0.52	0.26	1.05	178	65	360	<i>Peak Distribution Not Available</i>	

TRIPS:		BY AVERAGE			BY REGRESSION		
		Total	Enter	Exit	Total	Enter	Exit
	DAILY	3,010	1,505	1,505	3441	1,721	1,721
	PEAK OF GENERATOR	245	NA	NA	212	NA	NA

**SUNDAY**

RATES:	# Studies	R <sup>2</sup>	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	14	0.82	5.86	3.21	7.53	182	90	360	50%	50%
PEAK OF GENERATOR	13	--	0.51	0.26	1.43	186	90	360	<i>Peak Distribution Not Available</i>	

TRIPS:		BY AVERAGE			BY REGRESSION		
		Total	Enter	Exit	Total	Enter	Exit
	DAILY	2,760	1,505	1,505	2923	1,461	1,461
	PEAK OF GENERATOR	240	NA	NA	NA	NA	NA

**ITE TRIP GENERATION WORKSHEET**  
*(8th Edition, Updated April 2009)*

**LANDUSE:** Shopping Center (non-Christmas)  
**LANDUSE CODE:** 820

Independent Variable --- 1,000 square feet GLA

**JOB NAME:**  
**JOB NUMBER:** 10995

**SIZE (ksf):** 84.845  
54.845 Retail outparcel size

**WEEKDAY**

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	302	0.78	42.94	12.50	270.89	328	0	1500	50%	50%
AM PEAK	101	0.52	1.00	0.10	9.05	296	0	1500	61%	39%
PM PEAK	412	0.81	3.73	0.68	29.27	379	0	2400	49%	51%

TRIPS:		BY AVERAGE			BY REGRESSION			Rate per ksf	54.85 Trips
		Total	Enter	Exit	Total	Enter	Exit		
	DAILY	3,643	1,822	1,822	6103	3052	3052	71.93	3945
	AM PEAK (ADJACENT ST)	85	52	33	140	85	55	1.65	90
	PM PEAK (ADJACENT ST)	316	155	161	570	279	291	6.72	368

**SATURDAY**

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	123	0.82	49.97	16.70	227.50	450	0	1500	50%	50%
PEAK OF GENERATOR	127	0.83	4.89	1.46	18.32	450	0	1500	52%	48%

TRIPS:		BY AVERAGE			BY REGRESSION			Rate per ksf	54.85 Trips
		Total	Enter	Exit	Total	Enter	Exit		
	DAILY	4,240	2,120	2,120	8,331	4,165	4,165	98.19	5385
	PEAK OF GENERATOR	415	216	199	770	400	370	9.08	498

**SUNDAY**

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	77	0.52	25.24	4.15	148.15	439	0	1600	50%	50%
PEAK OF GENERATOR	39	---	3.12	0.39	12.40	369	0	1300	49%	51%

TRIPS:		BY AVERAGE			BY REGRESSION		
		Total	Enter	Exit	Total	Enter	Exit
	DAILY	2,141	1,071	1,071	5541	2770	2770
	PEAK OF GENERATOR	265	130	135	NA	NA	NA

**ITE TRIP GENERATION WORKSHEET**  
*(8th Edition, Updated 2008)*

**LANDUSE:** Supermarket  
**LANDUSE CODE:** 850

Independent Variable --- Peak Hour Traffic on Adjacent Street

**JOB NAME:**  
**JOB NUMBER:**

**FLOOR AREA (KSF):** 30.000

**WEEKDAY**

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	4	0.52	102.24	68.65	168.88	39	20	60	50%	50%
AM PEAK (ADJACENT ST)	5	NA	3.59	1.00	7.78	30	22	33	61%	39%
PM PEAK (ADJACENT ST)	40	0.52	10.50	5.15	20.29	59	10	130	51%	49%

TRIPS:		BY AVERAGE			BY REGRESSION		
		Total	Enter	Exit	Total	Enter	Exit
	DAILY	3,067	1,534	1,534	3,400	1,700	1,700
	AM PEAK (ADJACENT ST)	108	66	42	NA	NA	NA
	PM PEAK (ADJACENT ST)	315	161	154	414	211	203

**SATURDAY**

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	2	NA	177.59	168.41	190.43	27	22	32	50%	50%
PEAK OF GENERATOR	32	NA	10.85	5.78	22.60	67	20	130	51%	49%

TRIPS:		BY AVERAGE			BY REGRESSION		
		Total	Enter	Exit	Total	Enter	Exit
	DAILY	5,328	2,664	2,664	NA	NA	NA
	PEAK OF GENERATOR	326	166	159	NA	NA	NA

**SUNDAY**

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	2	NA	166.44	150.52	177.81	27	22	32	50%	50%
PEAK OF GENERATOR	2	NA	18.93	17.79	19.75	27	22	32	NA	NA

TRIPS:		BY AVERAGE			BY REGRESSION		
		Total	Enter	Exit	Total	Enter	Exit
	DAILY	4,993	2,497	2,497	NA	NA	NA
	PEAK OF GENERATOR	568	NA	NA	NA	NA	NA

# Capacity Analysis

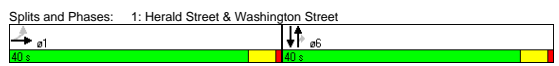
# 2011 Existing Conditions

Lanes, Volumes, Timings  
1: Herald Street & Washington Street

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Weekday Morning Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑							↑↑↑	↑		↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50						50	50	50		
Trailing Detector (ft)	0	0						0	0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red	No				Yes			Yes		Yes		Yes
Link Speed (mph)	30				30			25		30		
Link Distance (ft)	376				396			338		464		
Travel Time (s)	8.5				9.0			9.2		10.5		
Volume (vph)	60	830	0	0	0	0	595	50	35	0	20	0
Confl. Peds. (#/hr)	9							102	102			
Confl. Bikes (#/hr)	1							8				
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.89	0.89	0.89	0.59	0.59	0.59
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	8%	8%	8%	100%	100%	100%
Bus Blockages (#/hr)	0	9	9	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	947	0	0	0	0	0	669	39	0	34	0
Turn Type	Perm						Perm					
Protected Phases	1								6		6	
Permitted Phases	1								6		6	
Detector Phases	1								6		6	
Minimum Initial (s)	12.0	12.0							12.0	12.0	12.0	
Minimum Split (s)	31.0	31.0							31.0	31.0	31.0	
Total Split (s)	40.0	40.0	0.0	0.0	0.0	0.0	0.0	40.0	40.0	0.0	40.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	50.0%	0.0%
Yellow Time (s)	4.0	4.0							4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0							1.0	1.0	1.0	
Lead/Lag												
Recall Mode	Max	Max							C-Max	C-Max	C-Max	
v/c Ratio	0.49								0.49	0.07	0.09	
Control Delay	16.7								20.1	6.7	13.5	
Queue Delay	0.0								0.0	0.0	0.0	
Total Delay	16.7								20.1	6.7	13.5	
Queue Length 50th (ft)	117								131	1	9	
Queue Length 95th (ft)	153								183	m17	17	
Internal Link Dist (ft)	296		316				258		384			
Turn Bay Length (ft)												
Base Capacity (vph)	1915								1354	545	385	
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	0.49								0.49	0.07	0.09	

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 45 (56%), Referenced to phase 6:NBSB, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 m Volume for 95th percentile queue is metered by upstream signal.



HCM Signalized Intersection Capacity Analysis  
1: Herald Street & Washington Street

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Weekday Morning Peak

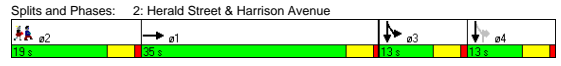
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑							↑↑↑	↑		↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0								4.0	4.0	4.0	
Lane Util. Factor	0.91								0.95	1.00	1.00	
Frpb, ped/bikes	1.00								1.00	0.86	1.00	
Flpb, ped/bikes	1.00								1.00	1.00	1.00	
Frt	1.00								1.00	0.85	1.00	
Flt Protected	1.00								1.00	1.00	1.00	
Satd. Flow (prot)	4253								3008	1164	855	
Flt Permitted	1.00								1.00	1.00	1.00	
Satd. Flow (perm)	4253								3008	1164	855	
Volume (vph)	60	830	0	0	0	0	0	595	35	0	20	0
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.89	0.89	0.89	0.59	0.59	0.59
Adj. Flow (vph)	64	883	0	0	0	0	0	669	39	0	34	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	21	0	0
Lane Group Flow (vph)	0	947	0	0	0	0	0	669	18	0	34	0
Confl. Peds. (#/hr)	9								16	102	102	
Confl. Bikes (#/hr)	1								8			
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	8%	8%	8%	100%	100%	100%
Bus Blockages (#/hr)	0	9	9	0	0	0	0	0	0	0	0	0
Turn Type	Perm						Perm					
Protected Phases	1								6		6	
Permitted Phases	1								6		6	
Actuated Green, G (s)	35.0								35.0	35.0	35.0	
Effective Green, g (s)	36.0								36.0	36.0	36.0	
Actuated g/C Ratio	0.45								0.45	0.45	0.45	
Clearance Time (s)	5.0								5.0	5.0	5.0	
Vehicle Extension (s)	3.0								3.0	3.0	3.0	
Lane Grp Cap (vph)	1914								1354	524	385	
v/s Ratio Prot									c0.22		0.04	
v/s Ratio Perm	0.22									0.02		
v/c Ratio	0.49								0.49	0.03	0.09	
Uniform Delay, d1	15.6								15.6	12.3	12.6	
Progression Factor	1.00								1.19	1.41	1.00	
Incremental Delay, d2	0.9								1.3	0.1	0.5	
Delay (s)	16.5								19.7	17.4	13.1	
Level of Service	B								B	B	B	
Approach Delay (s)	16.5		0.0				19.6		13.1			
Approach LOS	B		A				B		B			

**Intersection Summary**  
 HCM Average Control Delay: 17.7 HCM Level of Service: B  
 HCM Volume to Capacity ratio: 0.49  
 Actuated Cycle Length (s): 80.0 Sum of lost time (s): 8.0  
 Intersection Capacity Utilization: 44.1% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50									50	50	50	
Trailing Detector (ft)	0									0	0	0	
Turning Speed (mph)	15		9	15		9	15			9	15	9	
Right Turn on Red	Yes Yes Yes No Yes												
Link Speed (mph)	30			30			30			30		30	
Link Distance (ft)	396			540			356			340		340	
Travel Time (s)	9.0			12.3			8.1			7.7		7.7	
Volume (vph)	0	735	130	0	0	0	0	0	60	95	125	0	
Confl. Bikes (#/hr)	1												
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.96	0.96	0.96	0.96	0.73	0.73	0.73	
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	3%	3%	3%	21%	21%	21%	
Parking (#/hr)	2												
Lane Group Flow (vph)	0	901	0	0	0	0	0	0	62	130	171	0	
Turn Type	custom custom												
Protected Phases	1									3	3	4	2
Permitted Phases										4	4		
Detector Phases	1									4	3	3	4
Minimum Initial (s)	1.0									8.0	8.0		4.0
Minimum Split (s)	19.0									13.0	13.0		19.0
Total Split (s)	0.0	35.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	13.0	26.0	0.0	19.0
Total Split (%)	0.0%	43.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.3%	16.3%	32.5%	0.0%	24%
Yellow Time (s)	4.0									4.0	4.0		4.0
All-Red Time (s)	1.0									1.0	1.0		1.0
Lead/Lag	Lag									Lag	Lead		Lead
Lead-Lag Optimize?	Yes									Yes	Yes		Yes
Recall Mode	Max									Max	Max		Max
v/c Ratio	0.53									0.07	0.35	0.23	
Control Delay	19.2									0.1	26.6	23.5	
Queue Delay	0.0									0.0	0.0	0.0	
Total Delay	19.2									0.1	26.6	23.5	
Queue Length 50th (ft)	116									0	52	34	
Queue Length 95th (ft)	155									0	78	47	
Internal Link Dist (ft)	316			460			276					260	
Turn Bay Length (ft)													
Base Capacity (vph)	1685									933	369	738	
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	0.53									0.07	0.35	0.23	

Intersection Summary	
Area Type:	CBD
Cycle Length:	80
Actuated Cycle Length:	80
Natural Cycle:	65
Control Type:	Semi Act-Uncoord



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0									4.0	4.0	4.0
Lane Util. Factor	0.91									0.88	1.00	0.95
Frpb, ped/bikes	1.00									0.99	1.00	1.00
Flpb, ped/bikes	1.00									1.00	1.00	1.00
Frt	0.98									0.85	1.00	1.00
Flt Protected	1.00									1.00	0.95	1.00
Satd. Flow (prot)	4265									2314	1343	2685
Flt Permitted	1.00									1.00	0.95	1.00
Satd. Flow (perm)	4265									2314	1343	2685
Volume (vph)	0	735	130	0	0	0	0	0	0	60	95	125
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.96	0.96	0.96	0.96	0.73	0.73	0.73
Adj. Flow (vph)	0	766	135	0	0	0	0	0	0	62	130	171
RTOR Reduction (vph)	0	31	0	0	0	0	0	0	0	55	0	0
Lane Group Flow (vph)	0	870	0	0	0	0	0	0	0	7	130	171
Confl. Bikes (#/hr)	1											
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	3%	3%	3%	21%	21%	21%
Parking (#/hr)	2											
Turn Type	custom custom											
Protected Phases	1									3	3	4
Permitted Phases										4	4	
Actuated Green, G (s)	30.0									8.0	16.0	21.0
Effective Green, g (s)	31.0									9.0	18.0	22.0
Actuated g/C Ratio	0.39									0.11	0.22	0.28
Clearance Time (s)	5.0									5.0	5.0	
Vehicle Extension (s)	3.0									2.0	2.0	
Lane Grp Cap (vph)	1653									260	369	738
v/s Ratio Prot	c0.20									c0.04	0.06	
v/s Ratio Perm										0.00	0.06	
v/c Ratio	0.53									0.03	0.35	0.23
Uniform Delay, d1	18.8									31.6	26.6	22.5
Progression Factor	1.00									1.00	1.00	1.00
Incremental Delay, d2	1.2									0.2	2.6	0.7
Delay (s)	20.1									31.8	29.2	23.2
Level of Service	C									C	C	C
Approach Delay (s)	20.1				0.0					31.8		25.8
Approach LOS	C				A					C		C

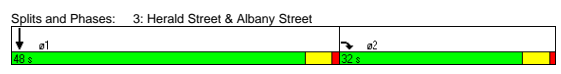
Intersection Summary	
HCM Average Control Delay	22.0 HCM Level of Service C
HCM Volume to Capacity ratio	0.45
Actuated Cycle Length (s)	80.0 Sum of lost time (s) 27.0
Intersection Capacity Utilization	42.3% ICU Level of Service A
Analysis Period (min)	15
c	Critical Lane Group

Lanes, Volumes, Timings  
3: Herald Street & Albany Street

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Weekday Morning Peak

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50			50	
Trailing Detector (ft)		0			0	
Turning Speed (mph)	15	9	15			9
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	540			158	348	
Travel Time (s)	12.3			3.6	7.9	
Volume (vph)	0	890	0	0	1240	0
Peak Hour Factor	0.90	0.90	0.92	0.92	0.95	0.95
Heavy Vehicles (%)	7%	7%	2%	2%	9%	9%
Lane Group Flow (vph)	0	989	0	0	1305	0
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Detector Phases	2		1			
Minimum Initial (s)	8.0		8.0			
Minimum Split (s)	23.0		23.0			
Total Split (s)	0.0	32.0	0.0	0.0	48.0	0.0
Total Split (%)	0.0%	40.0%	0.0%	0.0%	60.0%	0.0%
Yellow Time (s)	4.0		4.0			
All-Red Time (s)	1.0		1.0			
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	Max		C-Max			
v/c Ratio	0.91		0.55			
Control Delay	39.1		12.8			
Queue Delay	0.0		0.0			
Total Delay	39.1		12.8			
Queue Length 50th (ft)	203		143			
Queue Length 95th (ft)	#305		182			
Internal Link Dist (ft)	460		78			
Turn Bay Length (ft)						
Base Capacity (vph)	1084		2356			
Starvation Cap Reductn	0		0			
Spillback Cap Reductn	0		0			
Storage Cap Reductn	0		0			
Reduced v/c Ratio	0.91		0.55			

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 19 (24%), Referenced to phase 1:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



HCM Signalized Intersection Capacity Analysis  
3: Herald Street & Albany Street

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2011 Existing Conditions :: Weekday Morning Peak

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			
Lane Util. Factor	0.76		0.91			
Frt	0.85		1.00			
Flt Protected	1.00		1.00			
Satd. Flow (prot)	3097		4283			
Flt Permitted	1.00		1.00			
Satd. Flow (perm)	3097		4283			
Volume (vph)	0	890	0	0	1240	0
Peak-hour factor, PHF	0.90	0.90	0.92	0.92	0.95	0.95
Adj. Flow (vph)	0	989	0	0	1305	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	989	0	0	1305	0
Heavy Vehicles (%)	7%	7%	2%	2%	9%	9%
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Actuated Green, G (s)	27.0		43.0			
Effective Green, g (s)	28.0		44.0			
Actuated g/C Ratio	0.35		0.55			
Clearance Time (s)	5.0		5.0			
Vehicle Extension (s)	2.0		2.0			
Lane Grp Cap (vph)	1084		2356			
v/s Ratio Prot	c0.32		c0.30			
v/s Ratio Perm						
v/c Ratio	0.91		0.55			
Uniform Delay, d1	24.8		11.6			
Progression Factor	1.00		1.00			
Incremental Delay, d2	13.0		0.9			
Delay (s)	37.8		12.6			
Level of Service	D		B			
Approach Delay (s)	37.8		0.0	12.6		
Approach LOS	D		A	B		
<b>Intersection Summary</b>						
HCM Average Control Delay	23.5		HCM Level of Service		C	
HCM Volume to Capacity ratio	0.69					
Actuated Cycle Length (s)	80.0		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	56.4%		ICU Level of Service		B	
Analysis Period (min)	15					

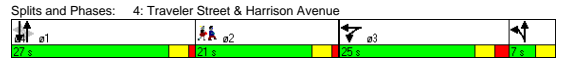
c Critical Lane Group

Lanes, Volumes, Timings  
4: Traveler Street & Harrison Avenue

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Weekday Morning Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations				↔	↔			↔	↔		↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50		
Trailing Detector (ft)	0	0		0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			No		
Link Speed (mph)		30			25			30			30		
Link Distance (ft)	422			513			372			364			
Travel Time (s)	9.6			14.0			8.5			8.3			
Volume (vph)	0	0	0	15	55	100	140	170	120	50	190	30	
Confl. Bikes (#/hr)					1			4			4		
Peak Hour Factor	0.92	0.92	0.92	0.86	0.86	0.86	0.92	0.92	0.84	0.84	0.84	0.84	
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	5%	5%	11%	11%	11%		
Lane Group Flow (vph)	0	0	0	17	180	0	0	467	0	322	0		
Turn Type				Split		D.P+P			Perm				
Protected Phases				3	3		4	14		1		2	
Permitted Phases							1			1			
Detector Phases				3	3		4	14		1	1		
Minimum Initial (s)				7.0	7.0		4.0		7.0	7.0	2.0		
Minimum Split (s)				21.0	21.0		7.0		20.0	20.0	21.0		
Total Split (s)	0.0	0.0	0.0	25.0	25.0	0.0	7.0	34.0	0.0	27.0	27.0	0.0	21.0
Total Split (%)	0.0%	0.0%	0.0%	31.3%	31.3%	0.0%	8.8%	42.5%	0.0%	33.8%	33.8%	0.0%	26%
Yellow Time (s)				3.0	3.0		3.0		3.0	3.0	3.0		
All-Red Time (s)				2.0	2.0		0.0		1.0	1.0	1.0		
Lead/Lag				Lead	Lead		Lag		Lead	Lead	Lag		
Lead-Lag Optimize?				Yes	Yes		Yes		Yes	Yes	Yes		
Recall Mode				Max	Max		Max		C-Max	C-Max	None		
v/c Ratio				0.03	0.27			0.61		0.49			
Control Delay				20.0	10.2			21.6		26.8			
Queue Delay				0.0	0.0			0.0		0.0			
Total Delay				20.0	10.2			21.6		26.8			
Queue Length 50th (ft)				4	16			73		70			
Queue Length 95th (ft)				20	73			113		101			
Internal Link Dist (ft)		342			433			292		284			
Turn Bay Length (ft)													
Base Capacity (vph)				644	671			763		653			
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				0.03	0.27			0.61		0.49			

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 48 (60%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis  
4: Traveler Street & Harrison Avenue

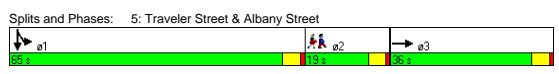
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2011 Existing Conditions :: Weekday Morning Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔	↔			↔	↔		↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0			4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	0.99		1.00			0.95	0.95	
Frbp, ped/bikes	1.00	0.99		1.00			1.00			1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00			1.00			1.00	1.00	
Frt	1.00	0.90					0.96			0.98	0.98	
Flt Protected				0.95	1.00		0.98			0.99	0.99	
Satd. Flow (prot)				1533	1445		2905			2843	2843	
Flt Permitted				0.95	1.00		0.71			0.77	0.77	
Satd. Flow (perm)				1533	1445		2085			2200	2200	
Volume (vph)	0	0	0	15	55	100	140	170	120	50	190	30
Peak-hour factor, PHF	0.92	0.92	0.92	0.86	0.86	0.86	0.92	0.92	0.84	0.84	0.84	0.84
Adj. Flow (vph)	0	0	0	17	64	116	152	185	130	60	226	36
RTOR Reduction (vph)	0	0	0	0	64	0	0	53	0	0	0	0
Lane Group Flow (vph)	0	0	0	17	116	0	0	414	0	322	0	
Confl. Bikes (#/hr)					1			4		4		
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	5%	5%	11%	11%	11%	
Turn Type				Split		D.P+P			Perm			
Protected Phases				3	3		4	14		1		
Permitted Phases							1			1		
Actuated Green, G (s)				32.6	32.6		24.6			20.6		
Effective Green, g (s)				33.6	33.6		23.6			20.6		
Actuated g/C Ratio				0.42	0.42		0.30			0.26		
Clearance Time (s)				5.0	5.0		1.0			4.0		
Vehicle Extension (s)				2.0	2.0					2.0		
Lane Grp Cap (vph)				644	607		646			567		
v/s Ratio Prot				0.01	c0.08		c0.02					
v/s Ratio Perm							c0.17			0.15		
v/c Ratio				0.03	0.19		0.64			0.57		
Uniform Delay, d1				13.6	14.6		24.5			25.8		
Progression Factor				1.00	1.00		1.00			1.00		
Incremental Delay, d2				0.1	0.7		4.8			4.1		
Delay (s)				13.7	15.3		29.3			29.9		
Level of Service				B	B		C			C		
Approach Delay (s)	0.0				15.2		29.3			29.9		
Approach LOS	A				B		C			C		

**Intersection Summary**  
 HCM Average Control Delay: 26.7 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.38  
 Actuated Cycle Length (s): 80.0 Sum of lost time (s): 22.8  
 Intersection Capacity Utilization: 42.6% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations		↕								↕	↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50									50	50		
Trailing Detector (ft)	0									0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes	Yes	Yes		No	
Link Speed (mph)	30			25				30		30			
Link Distance (ft)	513			322				416		557			
Travel Time (s)	11.7			8.8				9.5		12.7			
Volume (vph)	0	120	45	0	0	0	0	0	0	705	705	180	
Confl. Bikes (#/hr)		5											
Peak Hour Factor	0.74	0.74	0.74	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94	
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	2%	2%	2%	7%	7%	7%	
Lane Group Flow (vph)	0	223	0	0	0	0	0	0	0	709	982	0	
Turn Type										Split			
Protected Phases	3									1	1		2
Permitted Phases													
Detector Phases	3									1	1		
Minimum Initial (s)	8.0									10.0	10.0		4.0
Minimum Split (s)	24.0									24.0	24.0		19.0
Total Split (s)	0.0	36.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	65.0	65.0	0.0	19.0
Total Split (%)	0.0%	30.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	54.2%	54.2%	0.0%	16%
Yellow Time (s)	4.0									4.0	4.0		4.0
All-Red Time (s)	1.0									1.0	1.0		1.0
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?										Yes	Yes		Yes
Recall Mode	None									C-Max	C-Max		None
v/c Ratio	0.66									0.57	0.44		
Control Delay	50.4									2.7	5.9		
Queue Delay	0.0									0.3	0.0		
Total Delay	50.4									3.0	5.9		
Queue Length 50th (ft)	70									3	82		
Queue Length 95th (ft)	85									56	274		
Internal Link Dist (ft)	433			242				336			477		
Turn Bay Length (ft)													
Base Capacity (vph)	785									1240	2246		
Starvation Cap Reductn	0									143	0		
Spillback Cap Reductn	0									0	0		
Storage Cap Reductn	0									0	0		
Reduced v/c Ratio	0.28									0.65	0.44		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 116 (97%), Referenced to phase 1:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕								↕	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0									4.0	4.0	
Lane Util. Factor	0.95									0.91	0.91	
Frpb, ped/bikes	0.99									1.00	1.00	
Flpb, ped/bikes	1.00									1.00	1.00	
Frt	0.96									1.00	0.97	
Flt Protected	1.00									0.95	1.00	
Satd. Flow (prot)	2815									1382	2818	
Flt Permitted	1.00									0.95	1.00	
Satd. Flow (perm)	2815									1382	2818	
Volume (vph)	0	120	45	0	0	0	0	0	0	705	705	180
Peak-hour factor, PHF	0.74	0.74	0.74	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	162	61	0	0	0	0	0	0	750	750	191
RTOR Reduction (vph)	0	40	0	0	0	0	0	0	0	162	1	0
Lane Group Flow (vph)	0	183	0	0	0	0	0	0	0	547	981	0
Confl. Bikes (#/hr)		5										
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	2%	2%	2%	7%	7%	7%
Turn Type										Split		
Protected Phases	3									1	1	
Permitted Phases												
Actuated Green, G (s)	11.6									90.6	90.6	
Effective Green, g (s)	12.6									91.6	91.6	
Actuated g/C Ratio	0.10									0.76	0.76	
Clearance Time (s)	5.0									5.0	5.0	
Vehicle Extension (s)	2.0									2.0	2.0	
Lane Grp Cap (vph)	296									1055	2151	
v/s Ratio Prot	c0.06									c0.40	0.35	
v/s Ratio Perm												
v/c Ratio	0.62									0.52	0.46	
Uniform Delay, d1	51.4									5.6	5.2	
Progression Factor	1.00									1.00	1.00	
Incremental Delay, d2	2.7									1.8	0.7	
Delay (s)	54.1									7.4	5.9	
Level of Service	D									A	A	
Approach Delay (s)	54.1				0.0				0.0			6.5
Approach LOS	D				A				A			A

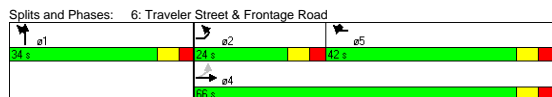
**Intersection Summary**  
 HCM Average Control Delay: 12.0 HCM Level of Service: B  
 HCM Volume to Capacity ratio: 0.53  
 Actuated Cycle Length (s): 120.0 Sum of lost time (s): 15.8  
 Intersection Capacity Utilization: 47.2% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lanes, Volumes, Timings  
6: Traveler Street & Frontage Road

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Weekday Morning Peak

	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0
Turning Speed (mph)	15	15		9	9	15		9
Right Turn on Red	No			Yes				No
Link Speed (mph)			30				30	
Link Distance (ft)			322				432	
Travel Time (s)			7.3				9.8	
Volume (vph)	45	185	595	365	740	290	510	50
Confl. Peds. (#/hr)								4
Peak Hour Factor	0.95	0.95	0.95	0.91	0.91	0.98	0.98	0.98
Heavy Vehicles (%)	7%	7%	7%	3%	3%	10%	10%	10%
Lane Group Flow (vph)	0	242	626	401	813	296	571	0
Turn Type	Prot	Perm	custom	custom	Split			
Protected Phases	2	4	5	5	1	1		
Permitted Phases		4						
Detector Phases	2	4	4	5	5	1	1	
Minimum Initial (s)	10.0	10.0	10.0	8.0	8.0	10.0	10.0	
Minimum Split (s)	24.0	34.0	34.0	34.0	34.0	34.0	34.0	
Total Split (s)	24.0	66.0	66.0	42.0	42.0	34.0	34.0	0.0
Total Split (%)	24.0%	66.0%	66.0%	42.0%	42.0%	34.0%	34.0%	0.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead			Lag	Lag			
Lead-Lag Optimize?	Yes			Yes	Yes			
Recall Mode	Max	Max	Max	Max	Max	Max	Max	
v/c Ratio	0.26	0.33	0.85	1.08	0.34	0.45		
Control Delay	9.5	9.7	47.1	76.7	28.7	29.8		
Queue Delay	1.3	1.1	0.0	0.0	0.0	0.0		
Total Delay	10.8	10.8	47.1	76.7	28.7	29.8		
Queue Length 50th (ft)	64	92	261	-436	75	107		
Queue Length 95th (ft)	104	124	#459	#670	112	143		
Internal Link Dist (ft)			242			352		
Turn Bay Length (ft)								
Base Capacity (vph)	941	1882	472	751	860	1255		
Starvation Cap Reductn	503	955	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0		
Reduced v/c Ratio	0.55	0.68	0.85	1.08	0.34	0.45		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Natural Cycle: 105  
 Control Type: Actuated-Uncoordinated  
 - 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.



HCM Signalized Intersection Capacity Analysis  
6: Traveler Street & Frontage Road

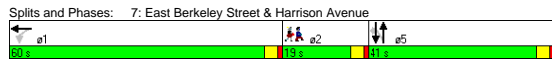
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	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.97	0.91		
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	1.00	0.85	0.85	1.00	0.99		
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1518	3036	1242	1411	2865	4181		
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1518	3036	1242	1411	2865	4181		
Volume (vph)	45	185	595	365	740	290	510	50
Peak-hour factor, PHF	0.95	0.95	0.95	0.91	0.91	0.98	0.98	0.98
Adj. Flow (vph)	47	195	626	401	813	296	520	51
RTOR Reduction (vph)	0	0	0	0	215	0	0	0
Lane Group Flow (vph)	0	242	626	401	598	296	571	0
Confl. Peds. (#/hr)								4
Heavy Vehicles (%)	7%	7%	7%	3%	3%	10%	10%	10%
Turn Type	Prot	Perm	custom	custom	Split			
Protected Phases	2	4	5	5	1	1		
Permitted Phases		4						
Actuated Green, G (s)	59.0	59.0	35.0	35.0	27.0	27.0		
Effective Green, g (s)	62.0	62.0	38.0	38.0	30.0	30.0		
Actuated g/C Ratio	0.62	0.62	0.38	0.38	0.30	0.30		
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		
Lane Grp Cap (vph)	941	1882	472	536	860	1254		
v/s Ratio Prot			c0.21	0.32	c0.42	0.10	c0.14	
v/s Ratio Perm		0.16						
v/c Ratio	0.26	0.33	0.85	1.12	0.34	0.46		
Uniform Delay, d1	8.6	9.1	28.4	31.0	27.3	28.4		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	0.7	0.5	17.2	74.5	1.1	1.2		
Delay (s)	9.3	9.6	45.6	105.5	28.4	29.6		
Level of Service	A	A	D	F	C	C		
Approach Delay (s)		9.5				29.2		
Approach LOS		A				C		

**Intersection Summary**  
 HCM Average Control Delay: 46.7  
 HCM Level of Service: D  
 HCM Volume to Capacity ratio: 0.72  
 Actuated Cycle Length (s): 100.0  
 Sum of lost time (s): 12.0  
 Intersection Capacity Utilization: 88.7%  
 ICU Level of Service: E  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50			50	50			50	
Trailing Detector (ft)				0	0			0	0			0	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			Yes		
Link Speed (mph)		30			25			30			30		
Link Distance (ft)		493			501			284			372		
Travel Time (s)		11.2			13.7			6.5			8.5		
Volume (vph)	0	0	0	175	1060	265	50	160	0	0	145	75	
Confl. Bikes (#/hr)					1								
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.80	0.80	0.80	0.81	0.81	0.81	
Heavy Vehicles (%)	2%	2%	2%	7%	7%	7%	4%	4%	4%	7%	7%	7%	
Bus Blockages (#/hr)	0	0	0	0	20	20	0	0	0	0	0	0	
Parking (#/hr)					1	1							
Lane Group Flow (vph)	0	0	0	0	1579	0	0	262	0	0	179	93	
Turn Type				Perm		Perm				Perm			
Protected Phases				1		5				5		2	
Permitted Phases				1		5				5		5	
Detector Phases				1	1	5	5			5	5		
Minimum Initial (s)				5.0	5.0	5.0	5.0			5.0	5.0	4.0	
Minimum Split (s)				22.0	22.0	20.0	20.0			20.0	20.0	19.0	
Total Split (s)	0.0	0.0	0.0	60.0	60.0	0.0	41.0	41.0	0.0	0.0	41.0	41.0	19.0
Total Split (%)	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	34.2%	34.2%	0.0%	0.0%	34.2%	34.2%	16%
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0	3.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0	1.0
Lead/Lag				Lead	Lead						Lag		
Lead-Lag Optimize?				Yes	Yes						Yes		
Recall Mode				C-Max	C-Max		Max	Max		Max	Max	None	
v/c Ratio				0.81			0.54			0.30		0.17	
Control Delay				22.6			37.5			31.0		6.9	
Queue Delay				5.8			0.0			0.0		0.0	
Total Delay				28.5			37.5			31.0		6.9	
Queue Length 50th (ft)				400			175			108		0	
Queue Length 95th (ft)				m447			233			153		30	
Internal Link Dist (ft)		413			421			204			292		
Turn Bay Length (ft)													
Base Capacity (vph)				1940			484			594		557	
Starvation Cap Reductn				312			0			0		0	
Spillback Cap Reductn				0			0			0		0	
Storage Cap Reductn				0			0			0		0	
Reduced v/c Ratio				0.97			0.54			0.30		0.17	

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 71 (59%), Referenced to phase 1:WBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)												
Lane Util. Factor												
Frpb, ped/bikes												
Flpb, ped/bikes												
Fr												
Fl Protected												
Satd. Flow (prot)												
Fl Permitted												
Satd. Flow (perm)												
Volume (vph)	0	0	0	175	1060	265	50	160	0	0	145	75
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.80	0.80	0.80	0.81	0.81	0.81
Adj. Flow (vph)	0	0	0	184	1116	279	62	200	0	0	179	93
RTOR Reduction (vph)	0	0	0	0	28	0	0	0	0	0	0	58
Lane Group Flow (vph)	0	0	0	0	1551	0	0	262	0	0	179	35
Confl. Bikes (#/hr)					1							1
Heavy Vehicles (%)	2%	2%	2%	7%	7%	7%	4%	4%	4%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	20	20	0	0	0	0	0	0
Parking (#/hr)					1	1						
Turn Type				Perm		Perm				Perm		
Protected Phases				1		5				5		5
Permitted Phases				1		5				5		5
Actuated Green, G (s)				54.4		44.6				44.6		44.6
Effective Green, g (s)				54.4		44.6				44.6		44.6
Actuated g/C Ratio				0.45		0.37				0.37		0.37
Clearance Time (s)				4.0		4.0				4.0		4.0
Vehicle Extension (s)				2.0		2.0				2.0		2.0
Lane Grp Cap (vph)				1859		485				594		498
v/s Ratio Prot												0.11
v/s Ratio Perm				0.38		0.20				0.30		0.03
v/c Ratio				0.83		0.54				0.30		0.07
Uniform Delay, d1				28.8		29.6				26.7		24.3
Progression Factor				0.78		1.00				1.00		1.00
Incremental Delay, d2				2.1		4.3				1.3		0.3
Delay (s)				24.5		33.9				28.0		24.6
Level of Service				C		C				C		C
Approach Delay (s)	0.0			24.5		33.9				26.8		
Approach LOS	A			C		C				C		

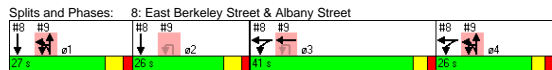
**Intersection Summary**  
 HCM Average Control Delay: 25.9 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.70  
 Actuated Cycle Length (s): 120.0 Sum of lost time (s): 21.0  
 Intersection Capacity Utilization: 64.2% ICU Level of Service: C  
 Analysis Period (min): 15  
 c Critical Lane Group

Lanes, Volumes, Timings  
8: East Berkeley Street & Albany Street

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø3	ø4
Lane Configurations					↑↑						↑↑↑					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Leading Detector (ft)				50	50						50					
Trailing Detector (ft)				0	0						0					
Turning Speed (mph)	15		9	15		9	15		9	15		9				
Right Turn on Red			Yes	Yes		Yes			Yes			No				
Link Speed (mph)		30			25			30			30					
Link Distance (ft)		501			316			383			416					
Travel Time (s)		11.4			8.6			8.7			9.5					
Volume (vph)	0	0	0	195	1225	0	0	0	0	0	475	275				
Confl. Peds. (#/hr)												7				
Peak Hour Factor	0.92	0.92	0.92	0.91	0.91	0.91	0.92	0.92	0.92	0.83	0.83	0.83				
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	8%	8%	8%				
Lane Group Flow (vph)	0	0	0	0	1560	0	0	0	0	0	903	0				
Turn Type				Split												
Protected Phases		3.4	3.4								1.2		1	2	3	4
Permitted Phases																
Detector Phases				3.4	3.4						1.2					
Minimum Initial (s)													11.0	18.0	8.0	8.0
Minimum Split (s)													26.0	26.0	25.0	26.0
Total Split (s)	0.0	0.0	0.0	67.0	67.0	0.0	0.0	0.0	0.0	0.0	53.0	0.0	27.0	26.0	41.0	26.0
Total Split (%)	0.0%	0.0%	0.0%	55.8%	55.8%	0.0%	0.0%	0.0%	0.0%	0.0%	44.2%	0.0%	23%	22%	34%	22%
Yellow Time (s)				4.0	4.0	3.0	3.0						4.0	4.0	3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	2.0						2.0	2.0	2.0	2.0
Lead/Lag				Lead	Lag	Lead	Lag						Yes	Yes	Yes	Yes
Lead-Lag Optimize?				Yes	Yes	Yes	Yes						Max	C-Max	None	None
Recall Mode																
v/c Ratio					0.97						0.55					
Control Delay					23.8						25.1					
Queue Delay					86.6						0.3					
Total Delay					110.4						25.4					
Queue Length 50th (ft)					630						197					
Queue Length 95th (ft)					m#775						129					
Internal Link Dist (ft)		421			236			303			336					
Turn Bay Length (ft)																
Base Capacity (vph)					1609						1651					
Starvation Cap Reductn					312						239					
Spillback Cap Reductn					72						24					
Storage Cap Reductn					0						0					
Reduced v/c Ratio					1.20						0.64					

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:, Start of Green  
 Natural Cycle: 105  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.



HCM Signalized Intersection Capacity Analysis  
8: East Berkeley Street & Albany Street

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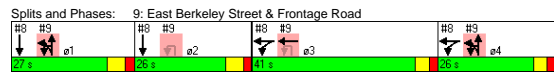
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑						↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)					4.0						4.0	
Lane Util. Factor					0.95						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.95	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					3044						4044	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					3044						4044	
Volume (vph)	0	0	0	195	1225	0	0	0	0	0	475	275
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.92	0.92	0.92	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	214	1346	0	0	0	0	0	572	331
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1550	0	0	0	0	0	903	0
Confl. Peds. (#/hr)											7	
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	8%	8%	8%
Turn Type				Split								
Protected Phases		26.0	26.0		3.4	3.4					1.2	
Permitted Phases												
Actuated Green, G (s)					62.0						47.0	
Effective Green, g (s)					63.0						49.0	
Actuated g/C Ratio					0.52						0.41	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1598						1651	
v/s Ratio Prot					c0.51						c0.22	
v/s Ratio Perm												
v/c Ratio					0.97						0.55	
Uniform Delay, d1					27.6						27.0	
Progression Factor					0.49						0.88	
Incremental Delay, d2					8.6						1.2	
Delay (s)					22.2						24.9	
Level of Service					C						C	
Approach Delay (s)		0.0			22.2			0.0			24.9	
Approach LOS		A			C			A			C	

**Intersection Summary**

HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c	Critical Lane Group		

Diagrammatic Lane Configurations																
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø4	
Lane Configurations	← → ↖ ↗			← →			← →			← →						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Storage Length (ft)	0	0	0	0	200	0	0	0	0	0	0	0				
Storage Lanes	0	0	0	0	2	1	0	0	0	0	0	0				
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Leading Detector (ft)					50	50	50	50								
Trailing Detector (ft)					0	0	0	0								
Turning Speed (mph)	15		9	15		9	9	15		9	15		9			
Right Turn on Red		Yes			No		Yes		No		Yes					
Link Speed (mph)	30			25			30			30						
Link Distance (ft)	316			393			366			432						
Travel Time (s)	7.2			10.4			8.3			9.8						
Volume (vph)	0	0	0	0	925	175	135	495	675	205	0	0	0	0	0	
Conf. Peds. (#/hr)				9			4									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92				
Heavy Vehicles (%)	2%	2%	2%	7%	7%	2%	9%	9%	9%	2%	2%	2%				
Lane Group Flow (vph)	0	0	0	0	1195	0	0	697	978	0	0	0				
Turn Type	Protected			custom			Split									
Protected Phases	3			1.4			1.4			1.4			1	2	4	
Permitted Phases	2.3															
Detector Phases	3			1.4			1.4			1.4						
Minimum Initial (s)	8.0												11.0	18.0	8.0	
Minimum Split (s)	25.0												26.0	26.0	26.0	
Total Split (s)	0.0	0.0	0.0	0.0	41.0	0.0	53.0	53.0	53.0	0.0	0.0	0.0	0.0	23%	22%	22%
Total Split (%)	0.0%	0.0%	0.0%	0.0%	34.2%	0.0%	44.2%	44.2%	44.2%	0.0%	0.0%	0.0%	0.0%	23%	22%	22%
Yellow Time (s)	3.0												4.0	4.0	3.0	
All-Red Time (s)	2.0												2.0	2.0	2.0	
Lead/Lag	Lead			Lead			Lag			Lag						
Lead-Lag Optimize?	Yes			Yes			Yes			Yes						
Recall Mode	None			None			None			None						
v/c Ratio	0.92			0.87			0.87									
Control Delay	51.8			27.1			42.4									
Queue Delay	15.6			0.6			0.0									
Total Delay	67.3			27.7			42.4									
Queue Length 50th (ft)	326			264			375									
Queue Length 95th (ft)	#414			#571			#484									
Internal Link Dist (ft)	236			303			286			352						
Turn Bay Length (ft)																
Base Capacity (vph)	1306			797			1125									
Starvation Cap Reductn	0			0			0									
Spillover Cap Reductn	134			12			0									
Storage Cap Reductn	0			0			0									
Reduced v/c Ratio	1.02			0.89			0.87									

Intersection Summary														
Area Type:	CBD													
Cycle Length:	120													
Actuated Cycle Length:	120													
Offset:	0 (0%), Referenced to phase 2:SBT and 6:, Start of Green													
Natural Cycle:	105													
Control Type:	Actuated-Coordinated													
#	95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.													



Diagrammatic Lane Configurations															
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø4
Lane Configurations	← → ↖ ↗			← →			← →			← →					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Total Lost time (s)	4.0			4.0			4.0			4.0					
Lane Util. Factor	0.91			0.91			0.91			0.91					
Frpb, ped/bikes	0.99			1.00			1.00			1.00					
Flpb, ped/bikes	1.00			1.00			1.00			1.00					
Fit	0.98			1.00			0.97			1.00					
Fit Protected	1.00			0.95			1.00			1.00					
Satd. Flow (prot)	4236			1375			2755			2755					
Fit Permitted	1.00			0.95			1.00			1.00					
Satd. Flow (perm)	4236			1375			2755			2755					
Volume (vph)	0	0	0	0	925	175	135	495	675	205	0	0	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92			
Adj. Flow (vph)	0	0	0	0	1005	190	147	550	750	228	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	235	0	0	0	0	0			
Lane Group Flow (vph)	0	0	0	0	1195	0	0	462	978	0	0	0			
Conf. Peds. (#/hr)	9			4											
Heavy Vehicles (%)	2%	2%	2%	7%	7%	2%	9%	9%	9%	2%	2%	2%			
Turn Type	Protected			custom			Split								
Protected Phases	3			1.4			1.4			1.4					
Permitted Phases	2.3														
Actuated Green, G (s)	36.0			47.0			47.0			47.0					
Effective Green, g (s)	37.0			49.0			49.0			49.0					
Actuated g/C Ratio	0.31			0.41			0.41			0.41					
Clearance Time (s)	5.0			2.0			2.0			2.0					
Vehicle Extension (s)	1306			561			1125								
Lane Grp Cap (vph)	c0.28			0.34			c0.35								
v/s Ratio Prot	0.92			0.82			0.87								
v/s Ratio Perm	40.0			31.6			32.6								
Uniform Delay, d1	1.00			1.00			1.00								
Progression Factor	9.9			7.1			7.1								
Incremental Delay, d2	49.9			40.7			39.7								
Delay (s)	D			D			D								
Level of Service	A			D			D								
Approach Delay (s)	0.0			49.9			40.1			0.0					
Approach LOS	A			D			D			A					

Intersection Summary

HCM Average Control Delay	44.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	34.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lanes, Volumes, Timings

12: Traveler Street & Washington Street

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2011 Existing Conditions :: Weekday Morning Peak

	↖	↗	↖	↗	↘	↙
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑↑			↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50			50
Trailing Detector (ft)		0	0			0
Turning Speed (mph)	15	9		9	15	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	25		25			30
Link Distance (ft)	422		427			300
Travel Time (s)	11.5		11.6			6.8
Volume (vph)	0	155	425	0	0	20
Peak Hour Factor	0.71	0.71	0.97	0.97	0.59	0.59
Heavy Vehicles (%)	0%	12%	13%	0%	0%	100%
Lane Group Flow (vph)	0	218	438	0	0	34
Turn Type	custom					
Protected Phases		5	1			1
Permitted Phases		1				
Detector Phases		5	1			1
Minimum Initial (s)		8.0	10.0			10.0
Minimum Split (s)		28.0	28.0			28.0
Total Split (s)	0.0	36.0	44.0	0.0	0.0	44.0
Total Split (%)	0.0%	45.0%	55.0%	0.0%	0.0%	55.0%
Yellow Time (s)		3.0	3.0			3.0
All-Red Time (s)		1.0	1.0			1.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	C-Max			C-Max
v/c Ratio		0.17	0.13			0.05
Control Delay		0.2	1.9			1.6
Queue Delay		0.0	0.0			0.0
Total Delay		0.2	1.9			1.6
Queue Length 50th (ft)		0	12			1
Queue Length 95th (ft)		0	17			1
Internal Link Dist (ft)	342		347			220
Turn Bay Length (ft)						
Base Capacity (vph)		1321	3305			684
Starvation Cap Reductn		0	0			0
Spillback Cap Reductn		0	0			0
Storage Cap Reductn		0	0			0
Reduced v/c Ratio		0.17	0.13			0.05

Intersection Summary

Area Type: CBD

Cycle Length: 80

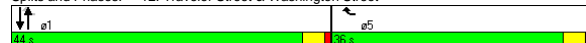
Actuated Cycle Length: 80

Offset: 6 (8%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 12: Traveler Street & Washington Street



HCM Signalized Intersection Capacity Analysis

12: Traveler Street & Washington Street

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2011 Existing Conditions :: Weekday Morning Peak

	↖	↗	↖	↗	↘	↙
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑↑			↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor		1.00	0.91			1.00
Fr		0.86	1.00			1.00
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		1321	4131			855
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		1321	4131			855
Volume (vph)	0	155	425	0	0	20
Peak-hour factor, PHF	0.71	0.71	0.97	0.97	0.59	0.59
Adj. Flow (vph)	0	218	438	0	0	34
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	218	438	0	0	34
Heavy Vehicles (%)	0%	12%	13%	0%	0%	100%
Turn Type	custom					
Protected Phases		5	1			1
Permitted Phases		1				
Actuated Green, G (s)		72.0	64.0			64.0
Effective Green, g (s)		72.0	64.0			64.0
Actuated g/C Ratio		0.90	0.80			0.80
Clearance Time (s)		4.0	4.0			4.0
Vehicle Extension (s)		2.0	2.0			2.0
Lane Grp Cap (vph)		1321	3305			684
v/s Ratio Prot		c0.02	0.11			0.04
v/s Ratio Perm		0.15				
v/c Ratio		0.17	0.13			0.05
Uniform Delay, d1		0.5	1.8			1.7
Progression Factor		1.00	1.00			0.87
Incremental Delay, d2		0.0	0.1			0.1
Delay (s)		0.5	1.9			1.6
Level of Service		A	A			A
Approach Delay (s)	0.5		1.9			1.6
Approach LOS	A		A			A

Intersection Summary

HCM Average Control Delay: 1.4 HCM Level of Service: A

HCM Volume to Capacity ratio: 0.17

Actuated Cycle Length (s): 80.0 Sum of lost time (s): 0.0

Intersection Capacity Utilization: 26.5% ICU Level of Service: A

Analysis Period (min): 15

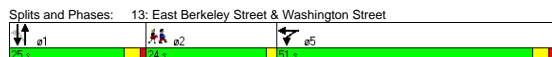
c Critical Lane Group

Lanes, Volumes, Timings  
 10995.00 :: Boston Herald Redevelopment  
 13: East Berkeley Street & Washington Street  
 2011 Existing Conditions :: Weekday Morning Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0	0	0	0	80	0	0	0	0	0	0	
Storage Lanes	0	0	0	0	0	1	0	0	0	0	0	0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50		50	50			50		
Trailing Detector (ft)				0	0		0	0			0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			Yes		
Link Speed (mph)		30			25			25			30		
Link Distance (ft)		347			493			324			427		
Travel Time (s)		7.9			13.4			8.8			9.7		
Volume (vph)	0	0	0	100	925	80	75	345	0	0	20	0	
Confl. Peds. (#/hr)	145		179	163		129	179		163	129		145	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	100%	2%	
Lane Group Flow (vph)	0	0	0	0	1201	0	82	375	0	0	22	0	
Turn Type				Split		Perm							
Protected Phases				5	5		1				1		2
Permitted Phases							1						
Detector Phases				5	5		1	1			1		
Minimum Initial (s)				8.0	8.0		20.0	20.0			20.0		2.0
Minimum Split (s)				25.0	25.0		24.0	24.0			24.0		24.0
Total Split (s)	0.0	0.0	0.0	51.0	51.0	0.0	25.0	25.0	0.0	0.0	25.0	0.0	24.0
Total Split (%)	0.0%	0.0%	0.0%	51.0%	51.0%	0.0%	25.0%	25.0%	0.0%	0.0%	25.0%	0.0%	24%
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0		2.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0		0.0
Lead/Lag						Lead	Lead		Lead		Lag		
Lead-Lag Optimize?													
Recall Mode				None	None		C-Min	C-Min		C-Min		None	
v/c Ratio				0.81	0.81		0.22	0.56		0.06		0.06	
Control Delay				34.6	34.6		27.9	32.1		26.0		26.0	
Queue Delay				0.0	0.0		0.0	0.0		0.0		0.0	
Total Delay				34.6	34.6		27.9	32.1		26.0		26.0	
Queue Length 50th (ft)				252	252		37	198		9		9	
Queue Length 95th (ft)				267	267		87	#382		31		31	
Internal Link Dist (ft)		267			413			244			347		
Turn Bay Length (ft)							80						
Base Capacity (vph)				2096	2096		366	666		340		340	
Starvation Cap Reductn				0	0		0	0		0		0	
Spillback Cap Reductn				0	0		0	0		0		0	
Storage Cap Reductn				0	0		0	0		0		0	
Reduced v/c Ratio				0.57	0.57		0.22	0.56		0.06		0.06	

**Intersection Summary**

Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 95 (95%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



HCM Signalized Intersection Capacity Analysis  
 10995.00 :: Boston Herald Redevelopment  
 13: East Berkeley Street & Washington Street  
 2011 Existing Conditions :: Weekday Morning Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)							4.0	4.0	4.0			4.0
Lane Util. Factor							0.91	1.00	1.00			1.00
Frpb, ped/bikes							0.99	1.00	1.00			1.00
Flpb, ped/bikes							1.00	0.74	1.00			1.00
Fr							0.99	1.00	1.00			1.00
Fl							1.00	0.95	1.00			1.00
Satd. Flow (prot)							4444	1178	1676			855
Flt Permitted							1.00	0.74	1.00			1.00
Satd. Flow (perm)							4444	921	1676			855
Volume (vph)	0	0	0	100	925	80	75	345	0	0	20	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	109	1005	87	82	375	0	0	22	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1190	0	82	375	0	0	22	0
Confl. Peds. (#/hr)	145		179	163		129	179		163	129		145
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	100%	2%
Turn Type				Split		Perm						
Protected Phases				5	5		1				1	
Permitted Phases							1					
Actuated Green, G (s)							33.1	39.3	39.3			39.3
Effective Green, g (s)							33.1	39.3	39.3			39.3
Actuated g/C Ratio							0.33	0.39	0.39			0.39
Clearance Time (s)							4.0	4.0	4.0			4.0
Vehicle Extension (s)							3.0	3.0	3.0			3.0
Lane Grp Cap (vph)							1471	362	659			336
v/s Ratio Prot							c0.27		c0.22			0.03
v/s Ratio Perm								0.09				
v/c Ratio							0.81	0.23	0.57			0.07
Uniform Delay, d1							30.6	20.2	23.7			18.9
Progression Factor							1.00	1.00	1.00			1.00
Incremental Delay, d2							3.4	1.5	3.5			0.4
Delay (s)							33.9	21.7	27.3			19.3
Level of Service							C	C	C			B
Approach Delay (s)	0.0						33.9		26.3			19.3
Approach LOS	A						C		C			B

**Intersection Summary**

HCM Average Control Delay	31.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	27.6
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis  
10: William E Mullins Way & Harrison Avenue

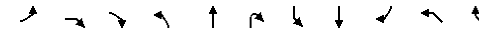
10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Weekday Morning Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Free		Free		Free		Free	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	10	1	30	1	0	5	180	90	5	2	235	25
Peak Hour Factor	0.60	0.60	0.60	0.35	0.35	0.35	0.84	0.84	0.84	0.88	0.88	0.88
Hourly flow rate (vph)	17	2	50	3	0	14	214	107	6	2	267	28
Pedestrians	34		14		5		1		12.0		4.0	
Lane Width (ft)	12.0		12.0		12.0		12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0		4.0		4.0		4.0	
Percent Blockage	3		1		0		0		0		0	
Right turn flare (veh)	Raised		Raised									
Median storage (veh)	1		1									
Upstream signal (ft)					364		356					
pX, platoon unblocked												
vC, conflicting volume	817	875	187	747	887	72	329			127		
vC1, stage 1 conf vol	320	320	553		553							
vC2, stage 2 conf vol	497	556	194		334							
vCu, unblocked vol	817	875	187	747	887	72	329			127		
tC, single (s)	7.8	6.8	7.2	7.8	6.8	7.2	4.2			4.3		
tC, 2 stage (s)	6.8	5.8	6.8		5.8							
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	94	99	93	99	100	98	82			100		
cM capacity (veh/h)	302	302	762	285	269	927	1164			1377		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>						
Volume Total	68	17	268	60	136	162						
Volume Left	17	3	214	0	2	0						
Volume Right	50	14	0	6	0	28						
cSH	541	674	1164	1700	1377	1700						
Volume to Capacity	0.13	0.03	0.18	0.04	0.00	0.10						
Queue Length 95th (ft)	11	2	17	0	0	0						
Control Delay (s)	12.6	10.5	7.4	0.0	0.1	0.0						
Lane LOS	B	B	A	A								
Approach Delay (s)	12.6	10.5	6.0	0.1								
Approach LOS	B	B										
<b>Intersection Summary</b>												
Average Delay	4.3											
Intersection Capacity Utilization	39.6%		ICU Level of Service		A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
11: Boston Herald Back & Albany Street

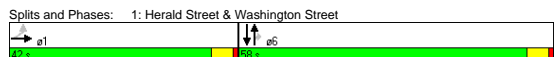
10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Weekday Morning Peak



Movement	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR	
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Free		Free		Free		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	0	3	15	0	0	0	535	1575	20	0	0	
Peak Hour Factor	0.65	0.65	0.65	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	
Hourly flow rate (vph)	0	5	23	0	0	0	563	1658	21	0	0	
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None								None			
Median storage (veh)												
Upstream signal (ft)							557		158			
pX, platoon unblocked	0.82	0.82	0.82	0.82					0.82			
vC, conflicting volume	2795	2795	563	1679			0		2805		0	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2749	2749	21	1385			0		2762		0	
tC, single (s)	8.9	7.9	8.3	4.1			4.3		6.5		6.9	
tC, 2 stage (s)												
tF (s)	4.2	4.7	4.0	2.2			2.3		4.0		3.3	
p0 queue free %	100	0	97	100			64		100		100	
cM capacity (veh/h)	2	4	711	401			1572		10		1084	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>SB 1</b>	<b>SB 2</b>	<b>SB 3</b>								
Volume Total	28	978	829	436								
Volume Left	0	563	0	0								
Volume Right	23	0	0	21								
cSH	21	1572	1700	1700								
Volume to Capacity	1.31	0.36	0.49	0.26								
Queue Length 95th (ft)	91	41	0	0								
Control Delay (s)	568.7	6.7	0.0	0.0								
Lane LOS	F	A										
Approach Delay (s)	568.7	2.9										
Approach LOS	F											
<b>Intersection Summary</b>												
Average Delay	9.8											
Intersection Capacity Utilization	56.4%		ICU Level of Service		B							
Analysis Period (min)	15											

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50						50	50	50		
Trailing Detector (ft)	0	0						0	0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red	No Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes											
Link Speed (mph)	30			30			25			30		
Link Distance (ft)	376			407			347			464		
Travel Time (s)	8.5			9.3			9.5			10.5		
Volume (vph)	80	1305	0	0	0	0	0	525	80	0	20	0
Confl. Peds. (#/hr)	2		23						78		78	
Confl. Bikes (#/hr)	1											
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	100%	100%	100%
Bus Blockages (#/hr)	0	6	6	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1610	0	0	0	0	0	571	87	0	24	0
Turn Type	Perm						Perm					
Protected Phases	1						6			6		
Permitted Phases	1						6			6		
Detector Phases	1			1			6			6		
Minimum Initial (s)	12.0			12.0			12.0			12.0		
Minimum Split (s)	31.0			31.0			31.0			31.0		
Total Split (s)	42.0			42.0			0.0			58.0		
Total Split (%)	42.0%			42.0%			0.0%			58.0%		
Yellow Time (s)	4.0			4.0			4.0			4.0		
All-Red Time (s)	1.0			1.0			1.0			1.0		
Lead/Lag												
Recall Mode	Max			Max			C-Max			C-Max		
v/c Ratio	0.94			0.34			0.13			0.05		
Control Delay	41.5			13.7			11.6			11.4		
Queue Delay	14.3			0.0			0.0			0.0		
Total Delay	55.8			13.7			11.6			11.4		
Queue Length 50th (ft)	356			102			25			7		
Queue Length 95th (ft)	#399			138			50			18		
Internal Link Dist (ft)	296			327			267			384		
Turn Bay Length (ft)												
Base Capacity (vph)	1720			1671			654			462		
Starvation Cap Reductn	0			0			0			0		
Spillback Cap Reductn	144			0			74			0		
Storage Cap Reductn	0			0			0			0		
Reduced v/c Ratio	1.02			0.34			0.15			0.05		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 60 (60%), Referenced to phase 6:NBSB, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0											
Lane Util. Factor	0.91			0.95			1.00			1.00		
Frpb, ped/bikes	1.00											
Flpb, ped/bikes	1.00											
Frt	1.00											
Flt Protected	1.00											
Satd. Flow (prot)	4526			3094			1208			855		
Flt Permitted	1.00											
Satd. Flow (perm)	4526			3094			1208			855		
Volume (vph)	80	1305	0	0	0	0	0	525	80	0	20	0
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.85	0.85	0.85
Adj. Flow (vph)	93	1517	0	0	0	0	0	571	87	0	24	0
RTOR Reduction (vph)	0											
Lane Group Flow (vph)	0	1610	0	0	0	0	0	571	85	0	24	0
Confl. Peds. (#/hr)	2		23						78		78	
Confl. Bikes (#/hr)	1											
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	100%	100%	100%
Bus Blockages (#/hr)	0	6	6	0	0	0	0	0	0	0	0	0
Turn Type	Perm						Perm					
Protected Phases	1						6			6		
Permitted Phases	1						6			6		
Actuated Green, G (s)	37.0			53.0			53.0			53.0		
Effective Green, g (s)	38.0			54.0			54.0			54.0		
Actuated g/C Ratio	0.38			0.54			0.54			0.54		
Clearance Time (s)	5.0			5.0			5.0			5.0		
Vehicle Extension (s)	3.0			3.0			3.0			3.0		
Lane Grp Cap (vph)	1720			1671			652			462		
v/s Ratio Prot				c0.18			0.03					
v/s Ratio Perm	0.36			0.07								
v/c Ratio	0.94			0.34			0.13			0.05		
Uniform Delay, d1	29.8			13.0			11.4			10.9		
Progression Factor	1.00											
Incremental Delay, d2	11.1			0.6			0.4			0.2		
Delay (s)	40.9			13.5			11.8			11.1		
Level of Service	D			B			B			B		
Approach Delay (s)	40.9			0.0			13.3			11.1		
Approach LOS	D			A			B			B		

**Intersection Summary**  
 HCM Average Control Delay: 32.7 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.59  
 Actuated Cycle Length (s): 100.0 Sum of lost time (s): 8.0  
 Intersection Capacity Utilization: 53.2% ICU Level of Service: A  
 Analysis Period (min): 15  
 Critical Lane Group

Lanes, Volumes, Timings  
2: Herald Street & Harrison Avenue

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Weekday Evening Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50									50	50	50	
Trailing Detector (ft)	0									0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red	Yes			Yes			Yes			No			Yes
Link Speed (mph)	30			30			30			30			
Link Distance (ft)	407			540			356			340			
Travel Time (s)	9.3			12.3			8.1			7.7			
Volume (vph)	0	1170	215	0	0	0	0	0	155	165	195	0	
Confl. Bikes (#/hr)	1												
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.69	0.69	0.69	0.81	0.81	0.81	
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	3%	3%	3%	
Parking (#/hr)	2												
Lane Group Flow (vph)	0	1574	0	0	0	0	0	0	225	204	241	0	
Turn Type	custom custom												
Protected Phases	1									3 3 4			2
Permitted Phases							4 4						
Detector Phases	1						4 3 4						
Minimum Initial (s)	1.0						8.0 8.0			4.0			
Minimum Split (s)	19.0						13.0 13.0			19.0			
Total Split (s)	0.0	35.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	13.0	26.0	0.0	19.0
Total Split (%)	0.0%	43.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.3%	16.3%	32.5%	0.0%	24%
Yellow Time (s)	4.0						4.0 4.0			4.0			
All-Red Time (s)	1.0						1.0 1.0			1.0			
Lead/Lag	Lag						Lag Lead			Lead			
Lead-Lag Optimize?	Yes						Yes Yes			Yes			
Recall Mode	Max						Max Max			Max			
v/c Ratio	0.88						0.27 0.47 0.28						
Control Delay	29.4						0.8 28.5 23.8						
Queue Delay	0.0						0.0 0.0 0.0						
Total Delay	29.4						0.8 28.5 23.8						
Queue Length 50th (ft)	254						0 85 49						
Queue Length 95th (ft)	308						0 130 71						
Internal Link Dist (ft)	327			460			276			260			
Turn Bay Length (ft)													
Base Capacity (vph)	1783						836 434 867						
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	0.88						0.27 0.47 0.28						
<b>Intersection Summary</b>													
Area Type:	CBD												
Cycle Length:	80												
Actuated Cycle Length:	80												
Natural Cycle:	75												
Control Type:	Semi Act-Uncoord												
Splits and Phases: 2: Herald Street & Harrison Avenue													

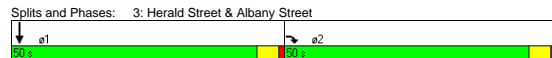
HCM Signalized Intersection Capacity Analysis  
2: Herald Street & Harrison Avenue

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Weekday Evening Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔↔↔			↔↔↔			↔↔↔			↔↔↔			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0									4.0 4.0 4.0			
Lane Util. Factor	0.91									0.88 1.00 0.95			
Frpb, ped/bikes	1.00									0.99 1.00 1.00			
Flpb, ped/bikes	1.00									1.00 1.00 1.00			
Frt	0.98									0.85 1.00 1.00			
Flt Protected	1.00									1.00 0.95 1.00			
Satd. Flow (prot)	4515									2384 1577 3154			
Flt Permitted	1.00									1.00 0.95 1.00			
Satd. Flow (perm)	4515									2384 1577 3154			
Volume (vph)	0	1170	215	0	0	0	0	0	155	165	195	0	
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.69	0.69	0.69	0.81	0.81	0.81	
Adj. Flow (vph)	0	1330	244	0	0	0	0	0	225	204	241	0	
RTOR Reduction (vph)	0	33	0	0	0	0	0	0	200	0	0	0	
Lane Group Flow (vph)	0	1541	0	0	0	0	0	0	25	204	241	0	
Confl. Bikes (#/hr)	1												
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	3%	3%	3%	
Parking (#/hr)	2												
Turn Type	custom custom												
Protected Phases	1									3 3 4			
Permitted Phases							4 4						
Actuated Green, G (s)	30.0									8.0 16.0 21.0			
Effective Green, g (s)	31.0									9.0 18.0 22.0			
Actuated g/C Ratio	0.39									0.11 0.22 0.28			
Clearance Time (s)	5.0									5.0 5.0			
Vehicle Extension (s)	3.0									2.0 2.0			
Lane Grp Cap (vph)	1750									268 434 867			
v/s Ratio Prot	c0.34									c0.05 0.08			
v/s Ratio Perm										0.01 0.08			
v/c Ratio	0.88									0.09 0.47 0.28			
Uniform Delay, d1	22.8									31.8 27.6 22.8			
Progression Factor	1.00									1.00 1.00 1.00			
Incremental Delay, d2	6.7									0.7 3.6 0.8			
Delay (s)	29.5									32.5 31.2 23.6			
Level of Service	C									C C C			
Approach Delay (s)	29.5			0.0			32.5			27.1			
Approach LOS	C			A			C			C			
<b>Intersection Summary</b>													
HCM Average Control Delay	29.3			HCM Level of Service			C						
HCM Volume to Capacity ratio	0.71												
Actuated Cycle Length (s)	80.0			Sum of lost time (s)			27.0						
Intersection Capacity Utilization	57.3%			ICU Level of Service			B						
Analysis Period (min)	15												
c	Critical Lane Group												

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50			50	
Trailing Detector (ft)		0			0	
Turning Speed (mph)	15	9	15			9
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	540			158	348	
Travel Time (s)	12.3			3.6	7.9	
Volume (vph)	0	1490	0	0	1470	0
Peak Hour Factor	0.88	0.88	0.92	0.92	0.94	0.94
Lane Group Flow (vph)	0	1693	0	0	1564	0
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Detector Phases	2		1			
Minimum Initial (s)	8.0		8.0			
Minimum Split (s)	23.0		23.0			
Total Split (s)	0.0	50.0	0.0	0.0	50.0	0.0
Total Split (%)	0.0%	50.0%	0.0%	0.0%	50.0%	0.0%
Yellow Time (s)	4.0		4.0			
All-Red Time (s)	1.0		1.0			
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	Max		C-Max			
v/c Ratio	1.13		0.74			
Control Delay	96.0		24.9			
Queue Delay	0.0		0.0			
Total Delay	96.0		24.9			
Queue Length 50th (ft)	-553		290			
Queue Length 95th (ft)	#643		349			
Internal Link Dist (ft)	460		78	268		
Turn Bay Length (ft)						
Base Capacity (vph)	1495		2105			
Starvation Cap Reductn	0		0			
Spillback Cap Reductn	0		0			
Storage Cap Reductn	0		0			
Reduced v/c Ratio	1.13		0.74			

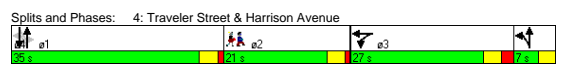
**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 80 (80%), Referenced to phase 1:SBT, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			
Lane Util. Factor	0.76		0.91			
Frt	0.85		1.00			
Flt Protected	1.00		1.00			
Satd. Flow (prot)	3249		4577			
Flt Permitted	1.00		1.00			
Satd. Flow (perm)	3249		4577			
Volume (vph)	0	1490	0	0	1470	0
Peak-hour factor, PHF	0.88	0.88	0.92	0.92	0.94	0.94
Adj. Flow (vph)	0	1693	0	0	1564	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	1693	0	0	1564	0
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Actuated Green, G (s)	45.0		45.0			
Effective Green, g (s)	46.0		46.0			
Actuated g/C Ratio	0.46		0.46			
Clearance Time (s)	5.0		5.0			
Vehicle Extension (s)	2.0		2.0			
Lane Grp Cap (vph)	1495		2105			
v/s Ratio Prot	c0.52		c0.34			
v/s Ratio Perm						
v/c Ratio	1.13		0.74			
Uniform Delay, d1	27.0		22.2			
Progression Factor	1.00		1.00			
Incremental Delay, d2	68.5		2.4			
Delay (s)	95.5		24.6			
Level of Service	F		C			
Approach Delay (s)	95.5		0.0	24.6		
Approach LOS	F		A	C		
<b>Intersection Summary</b>						
HCM Average Control Delay	61.5		HCM Level of Service		E	
HCM Volume to Capacity ratio	0.94					
Actuated Cycle Length (s)	100.0		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	76.8%		ICU Level of Service		D	
Analysis Period (min)	15					
c Critical Lane Group						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations				↔	↔			↔	↔		↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50		
Trailing Detector (ft)	0	0		0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			No		
Link Speed (mph)		30			25			30			30		
Link Distance (ft)		427			513			372			364		
Travel Time (s)		9.7			14.0			8.5			8.3		
Volume (vph)	0	0	0	25	20	25	100	190	140	145	330	15	
Confl. Bikes (#/hr)													6
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.80	0.80	0.80	0.80	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	9%	9%	9%	2%	2%	2%	3%	3%	3%	
Lane Group Flow (vph)	0	0	0	28	51	0	0	538	0	0	516	0	
Turn Type				Split			D,P+P			Perm			
Protected Phases				3	3		4	14			1		2
Permitted Phases							1			1			
Detector Phases				3	3		4	14		1	1		
Minimum Initial (s)				7.0	7.0		4.0			7.0	7.0		2.0
Minimum Split (s)				21.0	21.0		7.0			20.0	20.0		21.0
Total Split (s)	0.0	0.0	0.0	27.0	27.0	0.0	7.0	42.0	0.0	35.0	35.0	0.0	21.0
Total Split (%)	0.0%	0.0%	0.0%	30.0%	30.0%	0.0%	7.8%	46.7%	0.0%	38.9%	38.9%	0.0%	23%
Yellow Time (s)				3.0	3.0		3.0			3.0	3.0		3.0
All-Red Time (s)				2.0	2.0		0.0			1.0	1.0		1.0
Lead/Lag				Lead	Lead		Lag			Lead	Lead		Lag
Lead-Lag Optimize?				Yes	Yes		Yes			Yes	Yes		Yes
Recall Mode				Max	Max		Max			C-Max	C-Max		None
v/c Ratio				0.05	0.09			0.63			0.77		
Control Delay				22.7	14.1			28.4			35.4		
Queue Delay				0.0	0.0			0.0			0.0		
Total Delay				22.7	14.1			28.4			35.4		
Queue Length 50th (ft)				8	7			146			135		
Queue Length 95th (ft)				33	37			166			#203		
Internal Link Dist (ft)		347			433			292			284		
Turn Bay Length (ft)													
Base Capacity (vph)				589	586			859			672		
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				0.05	0.09			0.63			0.77		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 18 (20%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

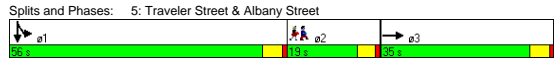


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔	↔			↔	↔		↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92								0.95	1.00	
Flt Protected										0.99	0.99	
Satd. Flow (prot)				1490	1440					2995	3091	
Flt Permitted				0.95	1.00					0.65	0.61	
Satd. Flow (perm)				1490	1440					1975	1929	
Volume (vph)	0	0	0	25	20	25	100	190	140	145	330	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.88	0.88	0.80	0.80	0.80	0.80	0.95	0.95
Adj. Flow (vph)	0	0	0	28	23	28	125	238	175	153	347	16
RTOR Reduction (vph)	0	0	0	0	17	0	0	67	0	0	0	0
Lane Group Flow (vph)	0	0	0	28	34	0	0	471	0	0	516	0
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	2%	2%	2%	9%	9%	9%	2%	2%	2%	3%	3%	3%
Turn Type				Split			D,P+P			Perm		
Protected Phases				3	3		4	14			1	
Permitted Phases							1					
Actuated Green, G (s)				34.6	34.6			32.6			28.6	
Effective Green, g (s)				35.6	35.6			31.6			28.6	
Actuated g/C Ratio				0.40	0.40			0.35			0.32	
Clearance Time (s)				5.0	5.0			1.0			4.0	
Vehicle Extension (s)				2.0	2.0						2.0	
Lane Grp Cap (vph)				589	570			727			613	
v/s Ratio Prot				0.02	c0.02			c0.02				
v/s Ratio Perm								0.21			c0.27	
v/c Ratio				0.05	0.06			0.65			0.84	
Uniform Delay, d1				16.8	16.8			24.5			28.6	
Progression Factor				1.00	1.00			1.51			1.00	
Incremental Delay, d2				0.2	0.2			3.1			13.2	
Delay (s)				16.9	17.0			40.1			41.8	
Level of Service				B	B			D			D	
Approach Delay (s)	0.0				17.0			40.1			41.8	
Approach LOS	A				B			D			D	

**Intersection Summary**  
 HCM Average Control Delay: 39.3 HCM Level of Service: D  
 HCM Volume to Capacity ratio: 0.42  
 Actuated Cycle Length (s): 90.0 Sum of lost time (s): 22.8  
 Intersection Capacity Utilization: 45.2% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations		↕								↕	↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50									50	50		
Trailing Detector (ft)	0									0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes	Yes			No	
Link Speed (mph)	30			25				30			30		
Link Distance (ft)	513			322				416			557		
Travel Time (s)	11.7			8.8				9.5			12.7		
Volume (vph)	0	230	50	0	0	0	0	0	0	1080	925	70	
Confl. Bikes (#/hr)		4											
Peak Hour Factor	0.72	0.72	0.72	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.98	0.98	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%	
Lane Group Flow (vph)	0	388	0	0	0	0	0	0	0	844	1273	0	
Turn Type										Split			
Protected Phases	3									1	1		2
Permitted Phases													
Detector Phases	3									1	1		
Minimum Initial (s)	8.0									10.0	10.0		4.0
Minimum Split (s)	24.0									24.0	24.0		19.0
Total Split (s)	0.0	35.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.0	56.0	0.0	19.0
Total Split (%)	0.0%	31.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.9%	50.9%	0.0%	17%
Yellow Time (s)	4.0									4.0	4.0		4.0
All-Red Time (s)	1.0									1.0	1.0		1.0
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?										Yes	Yes		Yes
Recall Mode	None									C-Max	C-Max		None
v/c Ratio	0.75									0.71	0.58		
Control Delay	50.8									8.3	10.1		
Queue Delay	0.0									0.4	0.0		
Total Delay	50.8									8.7	10.1		
Queue Length 50th (ft)	131									63	160		
Queue Length 95th (ft)	133									467	459		
Internal Link Dist (ft)	433			242				336			477		
Turn Bay Length (ft)													
Base Capacity (vph)	888									1189	2183		
Starvation Cap Reductn	0									77	0		
Spillback Cap Reductn	1									26	38		
Storage Cap Reductn	0									0	0		
Reduced v/c Ratio	0.44									0.76	0.59		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 80 (73%), Referenced to phase 1:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕								↕	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0									4.0	4.0	
Lane Util. Factor	0.95									0.91	0.91	
Frpb, ped/bikes	1.00									1.00	1.00	
Flpb, ped/bikes	1.00									1.00	1.00	
Frt	0.97									1.00	0.99	
Flt Protected	1.00									0.95	0.99	
Satd. Flow (prot)	3091									1435	2966	
Flt Permitted	1.00									0.95	0.99	
Satd. Flow (perm)	3091									1435	2966	
Volume (vph)	0	230	50	0	0	0	0	0	0	1080	925	70
Peak-hour factor, PHF	0.72	0.72	0.72	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Adj. Flow (vph)	0	319	69	0	0	0	0	0	0	1102	944	71
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	157	11	0
Lane Group Flow (vph)	0	369	0	0	0	0	0	0	0	687	1262	0
Confl. Bikes (#/hr)		4										
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type										Split		
Protected Phases	3									1	1	
Permitted Phases												
Actuated Green, G (s)	16.6									75.6	75.6	
Effective Green, g (s)	17.6									76.6	76.6	
Actuated g/C Ratio	0.16									0.70	0.70	
Clearance Time (s)	5.0									5.0	5.0	
Vehicle Extension (s)	2.0									2.0	2.0	
Lane Grp Cap (vph)	495									999	2065	
v/s Ratio Prot	c0.12									c0.48	0.43	
v/s Ratio Perm												
v/c Ratio	0.74									0.69	0.61	
Uniform Delay, d1	44.1									9.7	8.8	
Progression Factor	1.00									1.00	1.00	
Incremental Delay, d2	5.3									3.9	1.4	
Delay (s)	49.3									13.6	10.2	
Level of Service	D									B	B	
Approach Delay (s)	49.3			0.0			0.0				11.5	
Approach LOS	D			A			A				B	

**Intersection Summary**  
 HCM Average Control Delay: 17.4 HCM Level of Service: B  
 HCM Volume to Capacity ratio: 0.70  
 Actuated Cycle Length (s): 110.0 Sum of lost time (s): 15.8  
 Intersection Capacity Utilization: 59.3% ICU Level of Service: B  
 Analysis Period (min): 15  
 Critical Lane Group

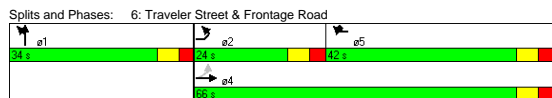


Lanes, Volumes, Timings  
6: Traveler Street & Frontage Road

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Weekday Evening Peak

Lane Group	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0
Turning Speed (mph)	15	15		9	9	15		9
Right Turn on Red	No			Yes				No
Link Speed (mph)			30				30	
Link Distance (ft)			322				432	
Travel Time (s)			7.3				9.8	
Volume (vph)	65	265	980	240	470	300	710	55
Confl. Peds. (#/hr)			3	3				
Peak Hour Factor	0.98	0.98	0.98	0.91	0.91	0.87	0.87	0.87
Heavy Vehicles (%)	3%	3%	3%	3%	3%	5%	5%	5%
Lane Group Flow (vph)	0	336	1000	264	516	345	879	0
Turn Type	Prot	Perm		custom	custom	Split		
Protected Phases	2		4	5	5	1	1	
Permitted Phases		4						
Detector Phases	2	4	4	5	5	1	1	
Minimum Initial (s)	10.0	10.0	10.0	8.0	8.0	10.0	10.0	
Minimum Split (s)	24.0	34.0	34.0	34.0	34.0	34.0	34.0	
Total Split (s)	24.0	66.0	66.0	42.0	42.0	34.0	34.0	0.0
Total Split (%)	24.0%	66.0%	66.0%	42.0%	42.0%	34.0%	34.0%	0.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead			Lag	Lag			
Lead-Lag Optimize?	Yes			Yes	Yes			
Recall Mode	Max	Max	Max	Max	Max	Max	Max	
v/c Ratio	0.34	0.51	0.56	0.74	0.38	0.67	0.67	
Control Delay	10.4	11.7	30.0	20.4	29.2	33.6	33.6	
Queue Delay	2.2	4.4	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.6	16.1	30.0	20.4	29.2	33.6	33.6	
Queue Length 50th (ft)	95	171	147	141	89	178	178	
Queue Length 95th (ft)	147	221	244	280	124	216	216	
Internal Link Dist (ft)			242				352	
Turn Bay Length (ft)								
Base Capacity (vph)	978	1955	472	696	900	1319	1319	
Starvation Cap Reductn	495	860	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.70	0.91	0.56	0.74	0.38	0.67	0.67	

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated



HCM Signalized Intersection Capacity Analysis  
6: Traveler Street & Frontage Road

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Weekday Evening Peak

Movement	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	0.95	0.88	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	0.85	1.00	0.99		
Flt Protected		0.95	1.00	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1577	3154	1242	1411	3001	4398	
Flt Permitted		0.95	1.00	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1577	3154	1242	1411	3001	4398	
Volume (vph)	65	265	980	240	470	300	710	55
Peak-hour factor, PHF	0.98	0.98	0.98	0.91	0.91	0.87	0.87	0.87
Adj. Flow (vph)	66	270	1000	264	516	345	816	63
RTOR Reduction (vph)	0	0	0	0	160	0	0	0
Lane Group Flow (vph)	0	336	1000	264	356	345	879	0
Confl. Peds. (#/hr)				3	3			
Heavy Vehicles (%)	3%	3%	3%	3%	3%	5%	5%	5%
Turn Type	Prot	Perm		custom	custom	Split		
Protected Phases	2		4	5	5	1	1	
Permitted Phases		4						
Actuated Green, G (s)	59.0	59.0	35.0	35.0	27.0	27.0		
Effective Green, g (s)	62.0	62.0	38.0	38.0	30.0	30.0		
Actuated g/C Ratio	0.62	0.62	0.38	0.38	0.30	0.30		
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		
Lane Grp Cap (vph)	978	1955	472	536	900	1319		
v/s Ratio Prot			c0.32	0.21	c0.25	0.11	c0.20	
v/s Ratio Perm		0.21						
v/c Ratio	0.34	0.51	0.56	0.66	0.38	0.67		
Uniform Delay, d1	9.2	10.6	24.4	25.7	27.7	30.6		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	1.0	1.0	4.7	6.4	1.2	2.7		
Delay (s)	10.1	11.5	29.1	32.1	28.9	33.3		
Level of Service	B	B	C	C	C	C		
Approach Delay (s)		11.2				32.1		
Approach LOS		B				C		

**Intersection Summary**  
 HCM Average Control Delay: 23.5  
 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.64  
 Actuated Cycle Length (s): 100.0  
 Sum of lost time (s): 12.0  
 Intersection Capacity Utilization: 74.5%  
 ICU Level of Service: D  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations				↔↔↔	↔↔↔	↔↔↔		↔			↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50		50	50			50	50	
Trailing Detector (ft)				0	0		0	0			0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			Yes		
Link Speed (mph)		25			30			30			30		
Link Distance (ft)		502			501			284			372		
Travel Time (s)		13.7			11.4			6.5			7.2		
Volume (vph)	0	0	0	200	725	140	70	290	0	0	260	115	
Confl. Bikes (#/hr)					3			1			5		
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.85	0.85	0.85	0.90	0.90	0.90	
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	1%	1%	1%	1%	1%	1%	
Bus Blockages (#/hr)	0	0	0	0	11	11	0	0	0	0	0	0	
Parking (#/hr)					1	1		1			1		
Lane Group Flow (vph)	0	0	0	0	1146	0	0	423	0	0	289	128	
Turn Type				Perm			Perm				Perm		
Protected Phases					1			5			5		2
Permitted Phases				1			5			5			
Detector Phases				1	1		5	5		5	5		
Minimum Initial (s)				5.0	5.0		5.0	5.0		5.0	5.0		4.0
Minimum Split (s)				22.0	22.0		20.0	20.0		20.0	20.0		19.0
Total Split (s)	0.0	0.0	0.0	34.0	34.0	0.0	37.0	37.0	0.0	0.0	37.0	37.0	19.0
Total Split (%)	0.0%	0.0%	0.0%	37.8%	37.8%	0.0%	41.1%	41.1%	0.0%	0.0%	41.1%	41.1%	21%
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0	
Lead/Lag				Lead	Lead						Lag	Lag	
Lead-Lag Optimize?				Yes	Yes						Yes	Yes	
Recall Mode				C-Max	C-Max		Max	Max		Max	Max		None
v/c Ratio				0.79			0.76			0.38	0.18		
Control Delay				31.1			35.1			12.1	3.6		
Queue Delay				0.0			0.0			0.4	0.0		
Total Delay				31.1			35.1			12.5	3.6		
Queue Length 50th (ft)				207			228			153	24		
Queue Length 95th (ft)				262			#376			m212	m27		
Internal Link Dist (ft)		422			421			204			292		
Turn Bay Length (ft)													
Base Capacity (vph)					1452			557			764	710	
Starvation Cap Reductn					0			0			171	0	
Spillback Cap Reductn					0			0			0	0	
Storage Cap Reductn					0			0			0	0	
Reduced v/c Ratio					0.79			0.76			0.49	0.18	

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 79 (88%), Referenced to phase 1:WBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

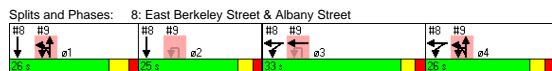


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔↔	↔↔↔	↔↔↔		↔			↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0			4.0			4.0	4.0
Lane Util. Factor					0.91			1.00			1.00	1.00
Frpb, ped/bikes					1.00			1.00			1.00	0.99
Flpb, ped/bikes					1.00			1.00			1.00	1.00
Frt					0.98			1.00			1.00	0.85
Flt Protected					0.99			0.99			1.00	1.00
Satd. Flow (prot)					4287			1501			1693	1418
Flt Permitted					0.99			0.88			1.00	1.00
Satd. Flow (perm)					4287			1333			1693	1418
Volume (vph)	0	0	0	200	725	140	70	290	0	0	260	115
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.85	0.85	0.85	0.85	0.90	0.90
Adj. Flow (vph)	0	0	0	215	780	151	82	341	0	0	289	128
RTOR Reduction (vph)	0	0	0	23	0	0	0	0	0	0	0	70
Lane Group Flow (vph)	0	0	0	0	1123	0	0	423	0	0	289	58
Confl. Bikes (#/hr)					3			1			5	
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	11	11	0	0	0	0	0	0
Parking (#/hr)					1	1		1			1	
Turn Type				Perm			Perm				Perm	
Protected Phases					1			5			5	
Permitted Phases				1			5			5		
Actuated Green, G (s)					28.4			40.6			40.6	40.6
Effective Green, g (s)					28.4			40.6			40.6	40.6
Actuated g/C Ratio					0.32			0.45			0.45	0.45
Clearance Time (s)					4.0			4.0			4.0	4.0
Vehicle Extension (s)					2.0			2.0			2.0	2.0
Lane Grp Cap (vph)					1353			601			764	640
v/s Ratio Prot											0.17	
v/s Ratio Perm					0.26			0.32				0.04
v/c Ratio					0.83			0.70			0.38	0.09
Uniform Delay, d1					28.6			19.9			16.3	14.1
Progression Factor					1.00			1.00			0.57	0.82
Incremental Delay, d2					6.0			6.8			1.1	0.2
Delay (s)					34.6			26.6			10.4	11.7
Level of Service					C			C			B	B
Approach Delay (s)		0.0			34.6			26.6			10.8	
Approach LOS		A			C			C			B	

**Intersection Summary**  
 HCM Average Control Delay: 27.9 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.76  
 Actuated Cycle Length (s): 90.0 Sum of lost time (s): 21.0  
 Intersection Capacity Utilization: 70.0% ICU Level of Service: C  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø3	ø4
Lane Configurations					↑↑						↑↑					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Leading Detector (ft)				50	50						50					
Trailing Detector (ft)				0	0						0					
Turning Speed (mph)	15		9	15		9	15		9	15		9				
Right Turn on Red			Yes	Yes		Yes			Yes		No					
Link Speed (mph)		25			30			30			30					
Link Distance (ft)		501			316			383			416					
Travel Time (s)		13.7			7.2			8.7			9.5					
Volume (vph)	0	0	0	165	770	0	0	0	0	0	680	295				
Confl. Peds. (#/hr)												9				
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.97	0.97	0.97				
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%				
Lane Group Flow (vph)	0	0	0	0	1039	0	0	0	0	0	1005	0				
Turn Type				Split												
Protected Phases				3.4	3.4						1.2		1	2	3	4
Permitted Phases																
Detector Phases				3.4	3.4						1.2					
Minimum Initial (s)													11.0	18.0	8.0	8.0
Minimum Split (s)													26.0	25.0	25.0	26.0
Total Split (s)	0.0	0.0	0.0	59.0	59.0	0.0	0.0	0.0	0.0	0.0	51.0	0.0	26.0	25.0	33.0	26.0
Total Split (%)	0.0%	0.0%	0.0%	53.6%	53.6%	0.0%	0.0%	0.0%	0.0%	0.0%	46.4%	0.0%	24%	23%	30%	24%
Yellow Time (s)													4.0	3.0	3.0	3.0
All-Red Time (s)													2.0	2.0	2.0	2.0
Lead/Lag													Lead	Lag	Lead	Lag
Lead-Lag Optimize?													Yes	Yes	Yes	Yes
Recall Mode													Max	C-Max	None	None
v/c Ratio					0.66						0.54					
Control Delay					9.0						24.1					
Queue Delay					2.2						0.6					
Total Delay					11.2						24.8					
Queue Length 50th (ft)					57						215					
Queue Length 95th (ft)					84						223					
Internal Link Dist (ft)		421			236			303			336					
Turn Bay Length (ft)																
Base Capacity (vph)					1565						1851					
Starvation Cap Reductn					369						452					
Spillback Cap Reductn					0						0					
Storage Cap Reductn					0						0					
Reduced v/c Ratio					0.87						0.72					

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 20 (18%), Referenced to phase 2:SBT and 6:, Start of Green  
 Natural Cycle: 115  
 Control Type: Actuated-Coordinated



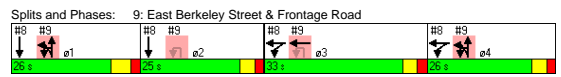
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑						↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.95						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.95	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					3097						4329	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					3097						4329	
Volume (vph)	0	0	0	165	770	0	0	0	0	0	680	295
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	183	856	0	0	0	0	0	701	304
RTOR Reduction (vph)	0	0	0	17	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1023	0	0	0	0	0	1005	0
Confl. Peds. (#/hr)											9	
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type				Split								
Protected Phases				3.4	3.4						1.2	
Permitted Phases												
Actuated Green, G (s)					54.0						46.0	
Effective Green, g (s)					55.0						47.0	
Actuated g/C Ratio					0.50						0.43	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1549						1850	
v/s Ratio Prot					c0.33						c0.23	
v/s Ratio Perm												
v/c Ratio					0.66						0.54	
Uniform Delay, d1					20.5						23.5	
Progression Factor					0.36						0.98	
Incremental Delay, d2					0.6						0.9	
Delay (s)					8.0						23.9	
Level of Service					A						C	
Approach Delay (s)	0.0				8.0			0.0			23.9	
Approach LOS	A				A			A			C	

**Intersection Summary**  
 HCM Average Control Delay: 15.8, HCM Level of Service: B  
 HCM Volume to Capacity ratio: 0.61  
 Actuated Cycle Length (s): 110.0, Sum of lost time (s): 8.0  
 Intersection Capacity Utilization: 57.9%, ICU Level of Service: B  
 Analysis Period (min): 15  
 c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø4
Lane Configurations															
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0	0	0	0	200	0	0	0	0	0	0	0			
Storage Lanes	0	0	0	0	2	1	0	0	0	0	0	0			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Leading Detector (ft)					50		50		50						
Trailing Detector (ft)					0		0		0						
Turning Speed (mph)	15		9	15		9	9	15		9	15		9		
Right Turn on Red		Yes			No		Yes		No		Yes				
Link Speed (mph)		25			30			30			30				
Link Distance (ft)		316			383			366			432				
Travel Time (s)		8.6			8.7			8.3			9.8				
Volume (vph)	0	0	0	0	610	80	65	325	990	295	0	0	0		
Confl. Peds. (#/hr)					13			2		1					
Confl. Bikes (#/hr)					2										
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.92	0.84	0.84	0.84	0.92	0.92	0.92		
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	5%	5%	2%	2%	2%			
Lane Group Flow (vph)	0	0	0	0	775	0	0	458	1530	0	0	0			
Turn Type					custom			Split							
Protected Phases					3		1.4	1.4	1.4				1	2	4
Permitted Phases								2.3							
Detector Phases					3		1.4	1.4	1.4						
Minimum Initial (s)					8.0								11.0	18.0	8.0
Minimum Split (s)					25.0								26.0	25.0	26.0
Total Split (s)	0.0	0.0	0.0	0.0	33.0	0.0	52.0	52.0	52.0	0.0	0.0	0.0	26.0	25.0	26.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	30.0%	0.0%	47.3%	47.3%	47.3%	0.0%	0.0%	0.0%	24%	23%	24%
Yellow Time (s)					3.0								4.0	3.0	3.0
All-Red Time (s)					2.0								2.0	2.0	2.0
Lead/Lag					Lead					Lead	Lag	Lag			
Lead-Lag Optimize?					Yes					Yes	Yes	Yes			
Recall Mode					None					Max	C-Max	None			
v/c Ratio					0.67			0.58	1.23						
Control Delay					39.6			11.2	140.7						
Queue Delay					0.2			0.0	0.0						
Total Delay					39.8			11.2	140.7						
Queue Length 50th (ft)					179			83	-735						
Queue Length 95th (ft)					223			160	#787						
Internal Link Dist (ft)		236			303			286			352				
Turn Bay Length (ft)															
Base Capacity (vph)					1158			783	1243						
Starvation Cap Reductn					0			0	0						
Spillover Cap Reductn					49			3	0						
Storage Cap Reductn					0			0	0						
Reduced v/c Ratio					0.70			0.59	1.23						

**Intersection Summary**

Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 20 (18%), Referenced to phase 2:SBT and 6:, Start of Green  
 Natural Cycle: 115  
 Control Type: Actuated-Coordinated  
 - 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.



	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	0	0	0	0	610	80	65	325	990	295	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.89	0.89	0.89	0.92	0.84	0.84	0.84	0.92	0.92
Adj. Flow (vph)	0	0	0	0	685	90	71	387	1179	351	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	166	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	775	0	0	292	1530	0	0	0
Confl. Peds. (#/hr)					13			2		1		
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	5%	5%	5%	2%	2%
Turn Type					custom			Split				
Protected Phases					3		1.4	1.4	1.4			
Permitted Phases								2.3				
Actuated Green, G (s)					28.0			46.0	46.0			
Effective Green, g (s)					29.0			48.0	48.0			
Actuated g/C Ratio					0.26			0.44	0.44			
Clearance Time (s)					5.0							
Vehicle Extension (s)					2.0							
Lane Grp Cap (vph)					1158			617	1242			
v/s Ratio Prot					c0.18			0.21	c0.54			
v/s Ratio Perm												
v/c Ratio					0.67			0.47	1.23			
Uniform Delay, d1					36.2			22.0	31.0			
Progression Factor					1.00			1.00	1.00			
Incremental Delay, d2					1.1			0.2	111.6			
Delay (s)					37.4			22.2	142.6			
Level of Service					D			C	F			
Approach Delay (s)		0.0			37.4			114.8		0.0		
Approach LOS		A			D			F		A		

**Intersection Summary**

HCM Average Control Delay	93.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	33.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings

12: Traveler Street & Washington Street

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Weekday Evening Peak

	↖	↗	↖	↗	↘	↙
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑↑			↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50			50
Trailing Detector (ft)		0	0			0
Turning Speed (mph)	15	9		9	15	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	25		25			30
Link Distance (ft)	427		423			307
Travel Time (s)	11.6		11.5			7.0
Volume (vph)	0	150	390	0	0	20
Peak Hour Factor	0.75	0.75	0.92	0.92	0.85	0.85
Heavy Vehicles (%)	0%	9%	5%	0%	0%	100%
Lane Group Flow (vph)	0	200	424	0	0	24
Turn Type	custom					
Protected Phases	5		1			1
Permitted Phases	1					
Detector Phases	5		1			1
Minimum Initial (s)	8.0		10.0			10.0
Minimum Split (s)		28.0	28.0			28.0
Total Split (s)	0.0	36.0	44.0	0.0	0.0	44.0
Total Split (%)	0.0%	45.0%	55.0%	0.0%	0.0%	55.0%
Yellow Time (s)		3.0	3.0			3.0
All-Red Time (s)		1.0	1.0			1.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	C-Max			C-Max	
v/c Ratio	0.15	0.12			0.04	
Control Delay	0.2	1.9			1.8	
Queue Delay	0.0	0.0			0.0	
Total Delay	0.2	1.9			1.8	
Queue Length 50th (ft)		0	12			2
Queue Length 95th (ft)		0	17			5
Internal Link Dist (ft)	347		343			227
Turn Bay Length (ft)						
Base Capacity (vph)	1357	3557			684	
Starvation Cap Reductn	0	0			0	
Spillback Cap Reductn	0	0			0	
Storage Cap Reductn	0	0			0	
Reduced v/c Ratio	0.15	0.12			0.04	

Intersection Summary

Area Type: CBD

Cycle Length: 80

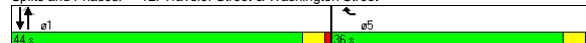
Actuated Cycle Length: 80

Offset: 6 (8%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 12: Traveler Street & Washington Street



HCM Signalized Intersection Capacity Analysis

12: Traveler Street & Washington Street

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2011 Existing Conditions :: Weekday Evening Peak

	↖	↗	↖	↗	↘	↙
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑↑			↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor	1.00	0.91				1.00
Fr	0.86	1.00				1.00
Flt Protected	1.00	1.00				1.00
Satd. Flow (prot)	1357	4446				855
Flt Permitted	1.00	1.00				1.00
Satd. Flow (perm)	1357	4446				855
Volume (vph)	0	150	390	0	0	20
Peak-hour factor, PHF	0.75	0.75	0.92	0.92	0.85	0.85
Adj. Flow (vph)	0	200	424	0	0	24
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	200	424	0	0	24
Heavy Vehicles (%)	0%	9%	5%	0%	0%	100%
Turn Type	custom					
Protected Phases	5		1			1
Permitted Phases	1					
Actuated Green, G (s)	72.0		64.0			64.0
Effective Green, g (s)	72.0		64.0			64.0
Actuated g/C Ratio	0.90		0.80			0.80
Clearance Time (s)	4.0		4.0			4.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1357		3557			684
v/s Ratio Prot	c0.01		0.10			0.03
v/s Ratio Perm			0.13			
v/c Ratio	0.15		0.12			0.04
Uniform Delay, d1	0.5		1.8			1.6
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.0		0.1			0.1
Delay (s)	0.5		1.8			1.7
Level of Service	A		A			A
Approach Delay (s)	0.5		1.8			1.7
Approach LOS	A		A			A

Intersection Summary

HCM Average Control Delay 1.4 HCM Level of Service A

HCM Volume to Capacity ratio 0.15

Actuated Cycle Length (s) 80.0 Sum of lost time (s) 0.0

Intersection Capacity Utilization 25.4% ICU Level of Service A

Analysis Period (min) 15

c Critical Lane Group

Lanes, Volumes, Timings  
13: East Berkeley Street & Washington Street

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Weekday Evening Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0	0	0	0	80	0	0	0	0	0	0	
Storage Lanes	0	0	0	0	0	1	0	0	0	0	0	0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50		50	50			50		
Trailing Detector (ft)				0	0		0	0			0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			Yes		
Link Speed (mph)		25			30			25			30		
Link Distance (ft)		318			502			361			423		
Travel Time (s)		8.7			11.4			9.8			9.6		
Volume (vph)	0	0	0	210	810	70	115	320	0	0	20	0	
Confl. Peds. (#/hr)	145		179	163		129	179		163	129		145	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	100%	2%	2%	
Lane Group Flow (vph)	0	0	0	0	1184	0	125	348	0	0	22	0	
Turn Type				Split		Perm							
Protected Phases				5	5		1				1		2
Permitted Phases							1						
Detector Phases				5	5		1	1			1		
Minimum Initial (s)				8.0	8.0		20.0	20.0			20.0		2.0
Minimum Split (s)				25.0	25.0		24.0	24.0			24.0		24.0
Total Split (s)	0.0	0.0	0.0	48.0	48.0	0.0	28.0	28.0	0.0	0.0	28.0	0.0	24.0
Total Split (%)	0.0%	0.0%	0.0%	48.0%	48.0%	0.0%	28.0%	28.0%	0.0%	0.0%	28.0%	0.0%	24%
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0		2.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0		0.0
Lead/Lag						Lead	Lead		Lead		Lag		
Lead-Lag Optimize?													
Recall Mode			None	None		C-Min	C-Min		C-Min		C-Min		None
v/c Ratio				0.81		0.30	0.46		0.06				
Control Delay				34.8		26.9	27.3		24.9				
Queue Delay				0.0		0.0	0.0		0.0				
Total Delay				34.8		26.9	27.3		24.9				
Queue Length 50th (ft)				247		59	180		9				
Queue Length 95th (ft)				266		128	#334		30				
Internal Link Dist (ft)	238			422			281		343				
Turn Bay Length (ft)						80							
Base Capacity (vph)				1957		412	750		383				
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				0.61		0.30	0.46		0.06				

**Intersection Summary**

Area Type: CBD

Cycle Length: 100

Actuated Cycle Length: 100

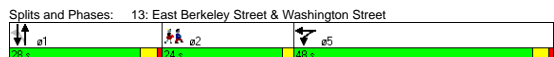
Offset: 98 (98%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



HCM Signalized Intersection Capacity Analysis  
13: East Berkeley Street & Washington Street

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2011 Existing Conditions :: Weekday Evening Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.91		1.00	1.00			1.00	
Frpb, ped/bikes					0.99		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		0.74	1.00			1.00	
Fr					0.99		1.00	1.00			1.00	
Fl					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4434		1178	1676			855	
Flt Permitted					0.99		0.74	1.00			1.00	
Satd. Flow (perm)					4434		921	1676			855	
Volume (vph)	0	0	0	210	810	70	115	320	0	0	20	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	228	880	76	125	348	0	0	22	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1175	0	125	348	0	0	22	0
Confl. Peds. (#/hr)	145		179	163		129	179		163	129		145
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	100%	2%	2%
Turn Type				Split		Perm						
Protected Phases				5	5		1				1	
Permitted Phases							1					
Actuated Green, G (s)							32.8	44.0	44.0		44.0	
Effective Green, g (s)							32.8	44.0	44.0		44.0	
Actuated g/C Ratio							0.33	0.44	0.44		0.44	
Clearance Time (s)							4.0	4.0	4.0		4.0	
Vehicle Extension (s)							3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)							1454	405	737		376	
v/s Ratio Prot							0.26		0.21		0.03	
v/s Ratio Perm								0.14				
v/c Ratio							0.81	0.31	0.47		0.06	
Uniform Delay, d1							30.7	18.1	19.8		16.1	
Progression Factor							1.00	1.00	1.00		1.00	
Incremental Delay, d2							3.4	2.0	2.2		0.3	
Delay (s)							34.1	20.1	22.0		16.4	
Level of Service							C	C	C		B	
Approach Delay (s)	0.0						34.1		21.5		16.4	
Approach LOS	A						C		C		B	

**Intersection Summary**

HCM Average Control Delay: 30.3 HCM Level of Service: C

HCM Volume to Capacity ratio: 0.62

Actuated Cycle Length (s): 100.0 Sum of lost time (s): 23.2

Intersection Capacity Utilization: 51.9% ICU Level of Service: A

Analysis Period (min): 15

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
10: William E Mullins Way & Harrison Avenue

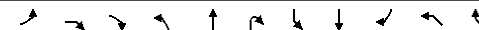
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Free		Free		Free	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	30	0	80	5	1	5	100	120	0	0	400	50
Peak Hour Factor	0.65	0.65	0.65	0.75	0.75	0.75	0.83	0.83	0.83	0.96	0.96	0.96
Hourly flow rate (vph)	46	0	123	7	1	7	120	145	0	0	417	52
Pedestrians	40		44		44		2		2		2	
Lane Width (ft)	12.0		12.0		12.0		12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0		4.0		4.0		4.0	
Percent Blockage	3		4		4		0		0		0	
Right turn flare (veh)	Raised		Raised		Raised		364		356		356	
Median type	1		1		1		364		356		356	
Median storage (veh)	1		1		1		364		356		356	
Upstream signal (ft)	1		1		1		364		356		356	
pX, platoon unblocked	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
vC, conflicting volume	805	912	276	763	938	118	509	189	189	189	189	189
vC1, stage 1 conf vol	483	483	430	430	430	430	430	430	430	430	430	430
vC2, stage 2 conf vol	323	430	333	333	509	509	509	509	509	509	509	509
vCu, unblocked vol	766	877	220	723	904	118	460	189	189	189	189	189
tC, single (s)	7.6	6.6	7.0	7.5	6.5	6.9	4.1	4.2	4.2	4.2	4.2	4.2
tC, 2 stage (s)	6.6	5.6	6.5	6.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	2.2	2.2	2.2	2.2	2.2
p0 queue free %	87	100	83	98	100	99	88	100	100	100	100	100
cM capacity (veh/h)	358	338	730	311	306	882	1027	1318	1318	1318	1318	1318
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>						
Volume Total	169	15	193	72	208	260						
Volume Left	46	7	120	0	0	0						
Volume Right	123	7	0	0	0	52						
cSH	569	440	1027	1700	1318	1700						
Volume to Capacity	0.30	0.03	0.12	0.04	0.00	0.15						
Queue Length 95th (ft)	31	3	10	0	0	0						
Control Delay (s)	14.0	13.5	6.0	0.0	0.0	0.0						
Lane LOS	B	B	A									
Approach Delay (s)	14.0	13.5	4.4	0.0	0.0	0.0						
Approach LOS	B	B										
<b>Intersection Summary</b>												
Average Delay	4.1											
Intersection Capacity Utilization	44.9%											
Analysis Period (min)	15											
ICU Level of Service	A											

HCM Unsignalized Intersection Capacity Analysis  
11: Boston Herald Back & Albany Street

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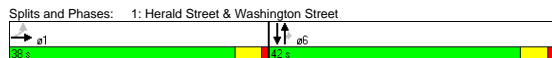


Movement	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR	
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Free		Free		Free		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	0	2	10	0	0	0	895	2065	0	0	0	
Peak Hour Factor	0.36	0.36	0.36	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	
Hourly flow rate (vph)	0	6	28	0	0	0	952	2197	0	0	0	
Pedestrians	4		4		4		4		4		4	
Lane Width (ft)	12.0		12.0		12.0		12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0		4.0		4.0		4.0	
Percent Blockage	0		0		0		0		0		0	
Right turn flare (veh)	None		None		None		None		None		None	
Median type	None		None		None		None		None		None	
Median storage (veh)	None		None		None		None		None		None	
Upstream signal (ft)	None		None		None		557		158		158	
pX, platoon unblocked	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	
vC, conflicting volume	4105	4105	736	2201	2201	2201	0	0	4105	0	0	
vC1, stage 1 conf vol	4105	4105	736	2201	2201	2201	0	0	4105	0	0	
vC2, stage 2 conf vol	0	0	0	0	0	0	0	0	0	0	0	
vCu, unblocked vol	4519	4519	0	1901	1901	1901	0	0	4519	0	0	
tC, single (s)	7.5	6.5	6.9	4.1	4.1	4.1	4.1	4.1	6.5	6.9	6.9	
tC, 2 stage (s)	6.6	5.6	6.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
tF (s)	3.5	4.0	3.3	2.2	2.2	2.2	2.2	2.2	4.0	3.3	3.3	
p0 queue free %	100	0	96	100	100	100	41	41	100	100	100	
cM capacity (veh/h)	0	0	791	224	224	224	1622	1622	0	1084	1084	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>SB 1</b>	<b>SB 2</b>	<b>SB 3</b>								
Volume Total	33	1501	1098	549								
Volume Left	0	952	0	0								
Volume Right	28	0	0	0								
cSH	2	1622	1700	1700								
Volume to Capacity	14.31	0.59	0.65	0.32								
Queue Length 95th (ft)	Err	102	0	0								
Control Delay (s)	Err	9.8	0.0	0.0								
Lane LOS	F	A										
Approach Delay (s)	Err	4.7										
Approach LOS	F											
<b>Intersection Summary</b>												
Average Delay	109.4											
Intersection Capacity Utilization	74.5%											
Analysis Period (min)	15											
ICU Level of Service	D											

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↔			↑↑			↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50						50	50		50	
Trailing Detector (ft)	0	0						0	0		0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red	No			Yes			Yes			Yes		
Link Speed (mph)	30			30			30			30		
Link Distance (ft)	376			407			347			464		
Travel Time (s)	8.5			9.3			7.9			10.5		
Volume (vph)	45	760	0	0	0	0	0	420	125	0	15	0
Confl. Peds. (#/hr)	11		21					89	89			
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.93	0.93	0.93	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	100%	100%	100%
Bus Blockages (#/hr)	0	2	2	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	857	0	0	0	0	0	452	134	0	16	0
Turn Type	Perm						Perm					
Protected Phases	1						6			6		
Permitted Phases	1						6			6		
Detector Phases	1						6			6		
Minimum Initial (s)	12.0			12.0			12.0			12.0		
Minimum Split (s)	31.0			31.0			31.0			31.0		
Total Split (s)	38.0			38.0			42.0			42.0		
Total Split (%)	47.5%	47.5%	0.0%	0.0%	0.0%	0.0%	0.0%	52.5%	52.5%	0.0%	52.5%	0.0%
Yellow Time (s)	4.0			4.0			4.0			4.0		
All-Red Time (s)	1.0			1.0			1.0			1.0		
Lead/Lag	Lead-Lag Optimize?											
Recall Mode	Max	Max					C-Max	C-Max	C-Max			
v/c Ratio	0.45						0.30	0.21	0.04			
Control Delay	17.3						13.6	6.9	11.7			
Queue Delay	0.0						0.0	0.0	0.0			
Total Delay	17.3						13.6	6.9	11.7			
Queue Length 50th (ft)	107						69			16		
Queue Length 95th (ft)	141						101			46		
Internal Link Dist (ft)	296			327			267			384		
Turn Bay Length (ft)												
Base Capacity (vph)	1914						1484			626		
Starvation Cap Reductn	0						0			0		
Spillback Cap Reductn	0						0			0		
Storage Cap Reductn	0						0			0		
Reduced v/c Ratio	0.45						0.30			0.21		

**Intersection Summary**

Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 73 (91%), Referenced to phase 6:NBSB, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated



	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↔			↑↑			↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0						4.0			4.0		
Lane Util. Factor	0.91						0.95			1.00		
Frpb, ped/bikes	1.00						1.00			0.88		
Flpb, ped/bikes	1.00						1.00			1.00		
Frt	1.00						1.00			0.85		
Flt Protected	1.00						1.00			1.00		
Satd. Flow (prot)	4505						3124			1235		
Flt Permitted	1.00						1.00			1.00		
Satd. Flow (perm)	4505						3124			1235		
Volume (vph)	45	760	0	0	0	0	0	420	125	0	15	0
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.93	0.93	0.93	0.94	0.94	0.94	0.94
Adj. Flow (vph)	48	809	0	0	0	0	0	452	134	0	16	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	39	0	0	0
Lane Group Flow (vph)	0	857	0	0	0	0	0	452	95	0	16	0
Confl. Peds. (#/hr)	11		21					89	89			
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	100%	100%	100%
Bus Blockages (#/hr)	0	2	2	0	0	0	0	0	0	0	0	0
Turn Type	Perm						Perm					
Protected Phases	1						6			6		
Permitted Phases	1						6			6		
Actuated Green, G (s)	33.0						37.0			37.0		
Effective Green, g (s)	34.0						38.0			38.0		
Actuated g/C Ratio	0.42						0.48			0.48		
Clearance Time (s)	5.0						5.0			5.0		
Vehicle Extension (s)	3.0						3.0			3.0		
Lane Grp Cap (vph)	1915						1484			587		
v/s Ratio Prot							c0.14			0.02		
v/s Ratio Perm	0.19									0.08		
v/c Ratio	0.45						0.30			0.16		
Uniform Delay, d1	16.3						12.9			11.9		
Progression Factor	1.00						1.00			1.00		
Incremental Delay, d2	0.8						0.5			0.6		
Delay (s)	17.1						13.4			12.5		
Level of Service	B						B			B		
Approach Delay (s)	17.1			0.0			13.2			11.4		
Approach LOS	B			A			B			B		

**Intersection Summary**

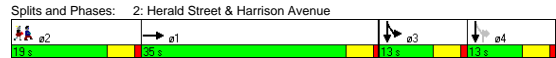
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations	↑↑			←			←			←			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50									50	50	50	
Trailing Detector (ft)	0									0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red	Yes			Yes			Yes			No			Yes
Link Speed (mph)	30			30			30			30		30	
Link Distance (ft)	407			540			356			340			
Travel Time (s)	9.3			12.3			8.1			7.7			
Volume (vph)	0	705	180	0	0	0	0	0	50	85	185	0	
Confl. Bikes (#/hr)	2												
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.82	0.82	0.82	0.98	0.98	0.98	
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	2%	2%	2%	
Parking (#/hr)	2												
Lane Group Flow (vph)	0	941	0	0	0	0	0	0	61	87	189	0	
Turn Type	custom custom												
Protected Phases	1									3 3 4			2
Permitted Phases							4 4						
Detector Phases	1						4 3 4						
Minimum Initial (s)	1.0						8.0 8.0			4.0			
Minimum Split (s)	19.0						13.0 13.0			19.0			
Total Split (s)	0.0	35.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	13.0	26.0	0.0	19.0
Total Split (%)	0.0%	43.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.3%	16.3%	32.5%	0.0%	24%
Yellow Time (s)	4.0						4.0 4.0			4.0			
All-Red Time (s)	1.0						1.0 1.0			1.0			
Lead/Lag	Lag						Lag Lead			Lead			
Lead-Lag Optimize?	Yes						Yes Yes			Yes			
Recall Mode	Max						Max Max			Max			
v/c Ratio	0.53						0.06 0.20 0.22						
Control Delay	18.3						0.1 23.8 23.2						
Queue Delay	0.0						0.0 0.0 0.0						
Total Delay	18.3						0.1 23.8 23.2						
Queue Length 50th (ft)	116						0 33 38						
Queue Length 95th (ft)	155						0 69 64						
Internal Link Dist (ft)	327			460			276			260			
Turn Bay Length (ft)													
Base Capacity (vph)	1759						977 438 876						
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	0.53						0.06 0.20 0.22						

Intersection Summary													
Area Type:	CBD												
Cycle Length:	80												
Actuated Cycle Length:	80												
Natural Cycle:	65												
Control Type:	Semi Act-Uncoord												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑			←			←			←		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0									4.0 4.0 4.0		
Lane Util. Factor	0.91									0.88 1.00 0.95		
Frpb, ped/bikes	1.00									0.98 1.00 1.00		
Flpb, ped/bikes	1.00									1.00 1.00 1.00		
Frt	0.97									0.85 1.00 1.00		
Flt Protected	1.00									1.00 0.95 1.00		
Satd. Flow (prot)	4394									2379 1593 3185		
Flt Permitted	1.00									1.00 0.95 1.00		
Satd. Flow (perm)	4394									2379 1593 3185		
Volume (vph)	0	705	180	0	0	0	0	0	50	85	185	0
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.82	0.82	0.82	0.98	0.98	0.98
Adj. Flow (vph)	0	750	191	0	0	0	0	0	61	87	189	0
RTOR Reduction (vph)	0	56	0	0	0	0	0	0	54	0	0	0
Lane Group Flow (vph)	0	885	0	0	0	0	0	0	7	87	189	0
Confl. Bikes (#/hr)	2											
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	2%	2%	2%
Parking (#/hr)	2											
Turn Type	custom custom											
Protected Phases	1									3 3 4		
Permitted Phases							4 4					
Actuated Green, G (s)	30.0									8.0 16.0 21.0		
Effective Green, g (s)	31.0									9.0 18.0 22.0		
Actuated g/C Ratio	0.39									0.11 0.22 0.28		
Clearance Time (s)	5.0									5.0 5.0		
Vehicle Extension (s)	3.0									2.0 2.0		
Lane Grp Cap (vph)	1703									268 438 876		
v/s Ratio Prot	c0.20									0.02 c0.06		
v/s Ratio Perm										0.00 0.03		
v/c Ratio	0.52									0.03 0.20 0.22		
Uniform Delay, d1	18.8									31.6 25.4 22.4		
Progression Factor	1.00									1.00 1.00 1.00		
Incremental Delay, d2	1.1									0.2 1.0 0.6		
Delay (s)	19.9									31.8 26.4 22.9		
Level of Service	B									C C C		
Approach Delay (s)	19.9			0.0			31.8			24.0		
Approach LOS	B			A			C			C		

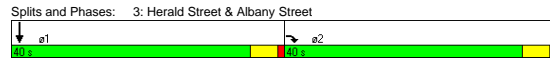
Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		
c	Critical Lane Group		

Lanes, Volumes, Timings  
3: Herald Street & Albany Street

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Saturday Middy Peak

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50			50	
Trailing Detector (ft)		0			0	
Turning Speed (mph)	15	9	15			9
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	540			158	348	
Travel Time (s)	12.3			3.6	7.9	
Volume (vph)	0	840	0	0	825	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.96	0.96
Heavy Vehicles (%)	3%	3%	2%	2%	6%	6%
Lane Group Flow (vph)	0	913	0	0	859	0
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Detector Phases	2		1			
Minimum Initial (s)	8.0		8.0			
Minimum Split (s)	23.0		23.0			
Total Split (s)	0.0	40.0	0.0	0.0	40.0	0.0
Total Split (%)	0.0%	50.0%	0.0%	0.0%	50.0%	0.0%
Yellow Time (s)	4.0		4.0			
All-Red Time (s)	1.0		1.0			
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	Max		C-Max			
v/c Ratio	0.63		0.43			
Control Delay	19.3		15.9			
Queue Delay	0.0		0.0			
Total Delay	19.3		15.9			
Queue Length 50th (ft)	147		103			
Queue Length 95th (ft)	199		135			
Internal Link Dist (ft)	460		78		268	
Turn Bay Length (ft)						
Base Capacity (vph)	1448		1982			
Starvation Cap Reductn	0		0			
Spillback Cap Reductn	0		0			
Storage Cap Reductn	0		0			
Reduced v/c Ratio	0.63		0.43			

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 10 (13%), Referenced to phase 1:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis  
3: Herald Street & Albany Street

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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			
Lane Util. Factor	0.76		0.91			
Frt	0.85		1.00			
Fit Protected	1.00		1.00			
Satd. Flow (prot)	3217		4404			
Fit Permitted	1.00		1.00			
Satd. Flow (perm)	3217		4404			
Volume (vph)	0	840	0	0	825	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.96	0.96
Adj. Flow (vph)	0	913	0	0	859	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	913	0	0	859	0
Heavy Vehicles (%)	3%	3%	2%	2%	6%	6%
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Actuated Green, G (s)	35.0		35.0			
Effective Green, g (s)	36.0		36.0			
Actuated g/C Ratio	0.45		0.45			
Clearance Time (s)	5.0		5.0			
Vehicle Extension (s)	2.0		2.0			
Lane Grp Cap (vph)	1448		1982			
v/s Ratio Prot	c0.28		c0.20			
v/s Ratio Perm						
v/c Ratio	0.63		0.43			
Uniform Delay, d1	16.9		15.0			
Progression Factor	1.00		1.00			
Incremental Delay, d2	2.1		0.7			
Delay (s)	19.0		15.7			
Level of Service	B		B			
Approach Delay (s)	19.0		0.0	15.7		
Approach LOS	B		A	B		
<b>Intersection Summary</b>						
HCM Average Control Delay	17.4		HCM Level of Service		B	
HCM Volume to Capacity ratio	0.53					
Actuated Cycle Length (s)	80.0		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	46.1%		ICU Level of Service		A	
Analysis Period (min)	15					

c Critical Lane Group

Lanes, Volumes, Timings  
4: Traveler Street & Harrison Avenue

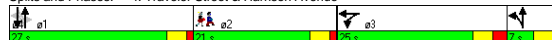
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations				↔	↔			↔	↔		↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50	50		50	50		50	50		50	50		
Trailing Detector (ft)	0	0		0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			Yes		No
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		426			513			372			364		
Travel Time (s)		9.7			11.7			8.5			8.3		
Volume (vph)	0	0	0	15	35	30	75	110	90	75	220	145	
Confl. Bikes (#/hr)								2			2		
Peak Hour Factor	0.92	0.92	0.92	0.77	0.77	0.77	0.90	0.90	0.90	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%	
Lane Group Flow (vph)	0	0	0	19	84	0	0	305	0	0	479	0	
Turn Type				Split			D.P+P			Perm			
Protected Phases				3	3		4	14			1		2
Permitted Phases							1			1			
Detector Phases				3	3		4	14		1	1		
Minimum Initial (s)				7.0	7.0		4.0			7.0	7.0		2.0
Minimum Split (s)				21.0	21.0		7.0			20.0	20.0		21.0
Total Split (s)	0.0	0.0	0.0	25.0	25.0	0.0	7.0	34.0	0.0	27.0	27.0	0.0	21.0
Total Split (%)	0.0%	0.0%	0.0%	31.3%	31.3%	0.0%	8.8%	42.5%	0.0%	33.8%	33.8%	0.0%	26%
Yellow Time (s)				3.0	3.0		3.0			3.0	3.0		3.0
All-Red Time (s)				2.0	2.0		0.0			1.0	1.0		1.0
Lead/Lag				Lead	Lead		Lag			Lead	Lead		Lag
Lead-Lag Optimize?				Yes	Yes		Yes			Yes	Yes		Yes
Recall Mode				Max	Max		Max			C-Max	C-Max		None
v/c Ratio				0.03	0.13			0.38			0.67		
Control Delay				19.8	12.9			13.8			30.5		
Queue Delay				0.0	0.0			0.0			0.0		
Total Delay				19.8	12.9			13.8			30.5		
Queue Length 50th (ft)				4	10			35			110		
Queue Length 95th (ft)				20	41			63			163		
Internal Link Dist (ft)		346			433			292			284		
Turn Bay Length (ft)													
Base Capacity (vph)				656	665			802			718		
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				0.03	0.13			0.38			0.67		

Intersection Summary

Area Type: CBD  
Cycle Length: 80  
Actuated Cycle Length: 80  
Offset: 20 (25%), Referenced to phase 1:NBSB, Start of Green  
Natural Cycle: 70  
Control Type: Actuated-Coordinated

Splits and Phases: 4: Traveler Street & Harrison Avenue



HCM Signalized Intersection Capacity Analysis  
4: Traveler Street & Harrison Avenue

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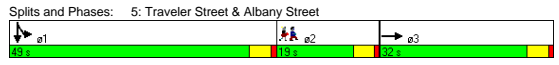
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔	↔			↔	↔		↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp. ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb. ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93					0.95	0.95				0.95
Flt Protected												
Satd. Flow (prot)												
Flt Permitted												
Satd. Flow (perm)												
Volume (vph)	0	0	0	15	35	30	75	110	90	75	220	145
Peak-hour factor, PHF	0.92	0.92	0.92	0.77	0.77	0.77	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	19	45	39	83	122	100	82	239	158
RTOR Reduction (vph)	0	0	0	0	23	0	0	71	0	0	0	0
Lane Group Flow (vph)	0	0	0	19	61	0	0	235	0	0	479	0
Confl. Bikes (#/hr)								2			2	
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type				Split			D.P+P			Perm		
Protected Phases				3	3		4	14			1	
Permitted Phases							1				1	
Actuated Green, G (s)				32.6	32.6			24.6			20.6	
Effective Green, g (s)				33.6	33.6			23.6			20.6	
Actuated g/C Ratio				0.42	0.42			0.30			0.26	
Clearance Time (s)				5.0	5.0			1.0			4.0	
Vehicle Extension (s)				2.0	2.0						2.0	
Lane Grp Cap (vph)				656	643			654			639	
v/s Ratio Prot				0.01	c0.04			c0.01				
v/s Ratio Perm								0.09			c0.19	
v/c Ratio				0.03	0.10			0.36			0.75	
Uniform Delay, d1				13.6	14.0			22.2			27.3	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				0.1	0.3			1.5			7.9	
Delay (s)				13.7	14.3			23.8			35.2	
Level of Service				B	B			C			D	
Approach Delay (s)	0.0				14.2			23.8			35.2	
Approach LOS	A				B			C			D	

Intersection Summary

HCM Average Control Delay: 28.8, HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.35  
 Actuated Cycle Length (s): 80.0, Sum of lost time (s): 22.8  
 Intersection Capacity Utilization: 39.2%, ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations		↕								↕	↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50									50	50		
Trailing Detector (ft)	0									0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes	Yes	Yes		No	
Link Speed (mph)	30			30			30			30			
Link Distance (ft)	513			322			416			557			
Travel Time (s)	11.7			7.3			9.5			12.7			
Volume (vph)	0	115	45	0	0	0	0	0	0	520	435	80	
Peak Hour Factor	0.82	0.82	0.82	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	5%	5%	5%	
Lane Group Flow (vph)	0	195	0	0	0	0	0	0	0	445	668	0	
Turn Type		Split				Split				Split			
Protected Phases	3									1	1		2
Permitted Phases													
Detector Phases	3									1	1		
Minimum Initial (s)	8.0									10.0	10.0		4.0
Minimum Split (s)	24.0									24.0	24.0		19.0
Total Split (s)	0.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.0	49.0	0.0	19.0
Total Split (%)	0.0%	32.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	49.0%	49.0%	0.0%	19%
Yellow Time (s)	4.0									4.0	4.0		4.0
All-Red Time (s)	1.0									1.0	1.0		1.0
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?										Yes	Yes		Yes
Recall Mode	None									C-Max	C-Max		None
v/c Ratio	0.54									0.37	0.30		
Control Delay	35.8									1.6	4.6		
Queue Delay	0.0									0.0	0.0		
Total Delay	35.8									1.6	4.6		
Queue Length 50th (ft)	45									0	36		
Queue Length 95th (ft)	69									41	145		
Internal Link Dist (ft)	433			242					336		477		
Turn Bay Length (ft)													
Base Capacity (vph)	886									1195	2252		
Starvation Cap Reductn	0									0	0		
Spillback Cap Reductn	0									0	0		
Storage Cap Reductn	0									0	0		
Reduced v/c Ratio	0.22									0.37	0.30		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 39 (39%), Referenced to phase 1:SBTL, Start of Green  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕								↕	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0									4.0	4.0	
Lane Util. Factor		0.95								0.91	0.91	
Frt		0.96								1.00	0.98	
Flt Protected		1.00								0.95	0.99	
Satd. Flow (prot)		3021								1408	2882	
Flt Permitted		1.00								0.95	0.99	
Satd. Flow (perm)		3021								1408	2882	
Volume (vph)	0	115	45	0	0	0	0	0	0	520	435	80
Peak-hour factor, PHF	0.82	0.82	0.82	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	140	55	0	0	0	0	0	0	559	468	86
RTOR Reduction (vph)	0	49	0	0	0	0	0	0	0	116	8	0
Lane Group Flow (vph)	0	146	0	0	0	0	0	0	0	329	660	0
Heavy Vehicles (%)		3%	3%	3%	2%	2%	2%	2%	2%	5%	5%	5%
Turn Type		Split				Split				Split		
Protected Phases		3								1	1	
Permitted Phases												
Actuated Green, G (s)		9.3								72.9	72.9	
Effective Green, g (s)		10.3								73.9	73.9	
Actuated g/C Ratio		0.10								0.74	0.74	
Clearance Time (s)		5.0								5.0	5.0	
Vehicle Extension (s)		2.0								2.0	2.0	
Lane Grp Cap (vph)		311								1041	2130	
v/s Ratio Prot		c0.05								c0.23	0.23	
v/s Ratio Perm										0.32	0.31	
v/c Ratio		0.47								0.32	0.31	
Uniform Delay, d1		42.3								4.4	4.4	
Progression Factor		1.00								1.00	1.00	
Incremental Delay, d2		0.4								0.8	0.4	
Delay (s)		42.7								5.2	4.8	
Level of Service		D								A	A	
Approach Delay (s)		42.7		0.0		0.0				5.0	5.0	
Approach LOS		D		A		A				A	A	
<b>Intersection Summary</b>												
HCM Average Control Delay		10.6								HCM Level of Service		B
HCM Volume to Capacity ratio		0.33										
Actuated Cycle Length (s)		100.0								Sum of lost time (s)		15.8
Intersection Capacity Utilization		35.3%								ICU Level of Service		A
Analysis Period (min)		15										

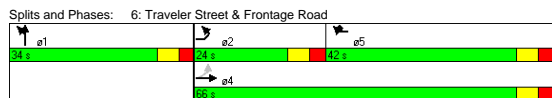
c Critical Lane Group

Lanes, Volumes, Timings  
6: Traveler Street & Frontage Road

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2011 Existing Conditions :: Saturday Middy Peak

Lane Group	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0
Turning Speed (mph)	15	15		9	9	15		9
Right Turn on Red	No			Yes				No
Link Speed (mph)			30				30	
Link Distance (ft)			322				432	
Travel Time (s)			7.3				9.8	
Volume (vph)	35	190	410	100	385	160	350	25
Confl. Peds. (#/hr)			10	10				4
Peak Hour Factor	0.99	0.99	0.99	0.80	0.80	0.94	0.94	0.94
Heavy Vehicles (%)	4%	4%	4%	3%	3%	9%	9%	9%
Lane Group Flow (vph)	0	227	414	125	481	170	399	0
Turn Type	Prot	Perm		custom	custom	Split		
Protected Phases	2		4	5	5	1	1	
Permitted Phases		4						
Detector Phases	2	4	4	5	5	1	1	
Minimum Initial (s)	10.0	10.0	10.0	8.0	8.0	10.0	10.0	
Minimum Split (s)	24.0	34.0	34.0	34.0	34.0	34.0	34.0	
Total Split (s)	24.0	66.0	66.0	42.0	42.0	34.0	34.0	0.0
Total Split (%)	24.0%	66.0%	66.0%	42.0%	42.0%	34.0%	34.0%	0.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead			Lag	Lag			
Lead-Lag Optimize?	Yes			Yes	Yes			
Recall Mode	Max	Max	Max	Max	Max	Max	Max	
v/c Ratio	0.23	0.21	0.26	0.61	0.20	0.31		
Control Delay	9.2	8.7	23.3	7.9	26.8	27.9		
Queue Delay	1.2	0.0	0.0	0.0	0.0	0.0		
Total Delay	10.4	8.7	23.3	7.9	26.8	27.9		
Queue Length 50th (ft)	59	55	61	29	41	71		
Queue Length 95th (ft)	96	78	97	67	68	100		
Internal Link Dist (ft)			242			352		
Turn Bay Length (ft)								
Base Capacity (vph)	968	1937	472	791	867	1271		
Starvation Cap Reductn	535	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0		
Reduced v/c Ratio	0.52	0.21	0.26	0.61	0.20	0.31		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated



HCM Signalized Intersection Capacity Analysis  
6: Traveler Street & Frontage Road

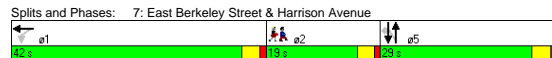
10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Saturday Middy Peak

Movement	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.97	0.91		
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	1.00	0.85	0.85	1.00	0.99		
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1562	3124	1242	1411	2891	4235		
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1562	3124	1242	1411	2891	4235		
Volume (vph)	35	190	410	100	385	160	350	25
Peak-hour factor, PHF	0.99	0.99	0.99	0.80	0.80	0.94	0.94	0.94
Adj. Flow (vph)	35	192	414	125	481	170	372	27
RTOR Reduction (vph)	0	0	0	0	255	0	0	0
Lane Group Flow (vph)	0	227	414	125	226	170	399	0
Confl. Peds. (#/hr)			10	10				4
Heavy Vehicles (%)	4%	4%	4%	3%	3%	9%	9%	9%
Turn Type	Prot	Perm		custom	custom	Split		
Protected Phases	2		4	5	5	1	1	
Permitted Phases		4						
Actuated Green, G (s)	59.0	59.0	35.0	35.0	27.0	27.0		
Effective Green, g (s)	62.0	62.0	38.0	38.0	30.0	30.0		
Actuated g/C Ratio	0.62	0.62	0.38	0.38	0.30	0.30		
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		
Lane Grp Cap (vph)	968	1937	472	536	867	1271		
v/s Ratio Prot			0.13	0.10	c0.16	0.06	c0.09	
v/s Ratio Perm		c0.15						
v/c Ratio	0.23	0.21	0.26	0.42	0.20	0.31		
Uniform Delay, d1	8.4	8.3	21.4	22.9	26.0	27.0		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	0.6	0.3	1.4	2.4	0.5	0.6		
Delay (s)	9.0	8.6	22.7	25.3	26.5	27.7		
Level of Service	A	A	C	C	C	C		
Approach Delay (s)		8.7				27.3		
Approach LOS		A				C		

**Intersection Summary**  
 HCM Average Control Delay: 19.9  
 HCM Level of Service: B  
 HCM Volume to Capacity ratio: 0.35  
 Actuated Cycle Length (s): 100.0  
 Sum of lost time (s): 12.0  
 Intersection Capacity Utilization: 66.1%  
 ICU Level of Service: C  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations				↔↔↔	↔↔↔	↔↔↔		↔			↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50		50	50		50	50		
Trailing Detector (ft)				0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		505			501			284			372		
Travel Time (s)		11.5			11.4			6.5			8.5		
Volume (vph)	0	0	0	120	535	130	60	135	0	0	130	105	
Confl. Bikes (#/hr)					3			2			2		
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.86	0.86	0.86	0.83	0.83	0.83	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	5	0	0	0	0	0	0	0	
Parking (#/hr)					1			1			127		
Lane Group Flow (vph)	0	0	0	0	882	0	0	227	0	0	157	127	
Turn Type	Perm			Perm			Perm			Perm			
Protected Phases	1			5			5			2			
Permitted Phases	1			5			5			5			
Detector Phases	1			1			5			5			
Minimum Initial (s)	5.0			5.0			5.0			4.0			
Minimum Split (s)	22.0			22.0			20.0			19.0			
Total Split (s)	0.0	0.0	0.0	42.0	42.0	0.0	29.0	29.0	0.0	0.0	29.0	19.0	
Total Split (%)	0.0%	0.0%	0.0%	46.7%	46.7%	0.0%	32.2%	32.2%	0.0%	0.0%	32.2%	21%	
Yellow Time (s)	3.0			3.0			3.0			3.0			
All-Red Time (s)	1.0			1.0			1.0			1.0			
Lead/Lag	Lead			Lead			Lag			Lag			
Lead-Lag Optimize?	Yes			Yes			Yes			Yes			
Recall Mode	C-Max			C-Max			Max			Max			
v/c Ratio	0.47			0.47			0.43			0.23			
Control Delay	18.4			26.0			22.0			5.7			
Queue Delay	0.0			0.0			0.0			0.0			
Total Delay	18.4			26.0			22.0			5.7			
Queue Length 50th (ft)	119			77			48			0			
Queue Length 95th (ft)	153			182			114			33			
Internal Link Dist (ft)	425			421			204			292			
Turn Bay Length (ft)													
Base Capacity (vph)	1885			522			672			638			
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	0.47			0.43			0.23			0.20			

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 56 (62%), Referenced to phase 1:WBT, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔↔	↔↔↔	↔↔↔		↔			↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor				0.91			1.00			1.00		
Frpb, ped/bikes				1.00			1.00			1.00		
Flpb, ped/bikes				1.00			1.00			1.00		
Frt				0.98			1.00			1.00		
Flt Protected				0.99			0.98			1.00		
Satd. Flow (prot)				4390			1478			1660		
Flt Permitted				0.99			0.87			1.00		
Satd. Flow (perm)				4390			1303			1660		
Volume (vph)	0	0	0	120	535	130	60	135	0	0	130	105
Peak-hour factor, PHF	0.92	0.92	0.92	0.89	0.89	0.89	0.86	0.86	0.86	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	135	601	146	70	157	0	0	157	127
RTOR Reduction (vph)	0	0	0	34	0	0	0	0	0	0	0	76
Lane Group Flow (vph)	0	0	0	0	848	0	0	227	0	0	157	51
Confl. Bikes (#/hr)					3			2			2	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)					1			1			127	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases	1			5			5			5		
Permitted Phases	1			5			5			5		
Actuated Green, G (s)	35.6			36.4			36.4			36.4		
Effective Green, g (s)	35.6			36.4			36.4			36.4		
Actuated g/C Ratio	0.40			0.40			0.40			0.40		
Clearance Time (s)	4.0			4.0			4.0			4.0		
Vehicle Extension (s)	2.0			2.0			2.0			2.0		
Lane Grp Cap (vph)	1736			527			671			563		
v/s Ratio Prot							0.09					
v/s Ratio Perm	0.19			0.17			0.04			0.04		
v/c Ratio	0.49			0.43			0.23			0.09		
Uniform Delay, d1	20.4			19.3			17.6			16.6		
Progression Factor	1.00			1.00			1.00			1.00		
Incremental Delay, d2	1.0			2.6			0.8			0.3		
Delay (s)	21.4			21.9			18.4			16.9		
Level of Service	C			C			B			B		
Approach Delay (s)	0.0			21.4			21.9			17.8		
Approach LOS	A			C			C			B		

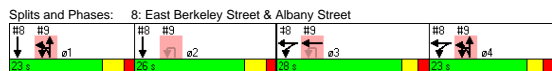
**Intersection Summary**  
 HCM Average Control Delay: 20.7 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.46  
 Actuated Cycle Length (s): 90.0 Sum of lost time (s): 18.0  
 Intersection Capacity Utilization: 46.6% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lanes, Volumes, Timings  
8: East Berkeley Street & Albany Street

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø3	ø4
Lane Configurations					↑↑						↑↑↑					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Leading Detector (ft)				50	50						50					
Trailing Detector (ft)				0	0						0					
Turning Speed (mph)	15		9	15		9	15		9	15		9				
Right Turn on Red			Yes	Yes		Yes			Yes		No					
Link Speed (mph)		30			30			30			30					
Link Distance (ft)		501			316			383			416					
Travel Time (s)		11.4			7.2			8.7			9.5					
Volume (vph)	0	0	0	125	560	0	0	0	0	0	255	225				
Confl. Peds. (#/hr)												6				
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.83	0.83	0.83				
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	7%	7%	7%				
Lane Group Flow (vph)	0	0	0	0	736	0	0	0	0	0	578	0				
Turn Type				Split												
Protected Phases		3	4		3	4				1	2	3	4			
Permitted Phases				3	4											
Detector Phases										1	2	3	4			
Minimum Initial (s)										11.0	18.0	8.0	8.0			
Minimum Split (s)										22.0	26.0	25.0	23.0			
Total Split (s)	0.0	0.0	0.0	51.0	51.0	0.0	0.0	0.0	0.0	0.0	49.0	0.0	23.0	26.0	28.0	23.0
Total Split (%)	0.0%	0.0%	0.0%	51.0%	51.0%	0.0%	0.0%	0.0%	0.0%	0.0%	49.0%	0.0%	23%	26%	28%	23%
Yellow Time (s)										4.0	4.0	3.0	3.0			
All-Red Time (s)										2.0	2.0	2.0	2.0			
Lead/Lag										Lead	Lag	Lead	Lag			
Lead-Lag Optimize?										Yes	Yes	Yes	Yes			
Recall Mode										Max	C-Max	None	None			
v/c Ratio					0.51						0.31					
Control Delay					7.8						19.5					
Queue Delay					0.6						0.0					
Total Delay					8.4						19.5					
Queue Length 50th (ft)					52						77					
Queue Length 95th (ft)					58						142					
Internal Link Dist (ft)		421			236			303			336					
Turn Bay Length (ft)																
Base Capacity (vph)					1450						1849					
Starvation Cap Reductn					344						0					
Spillback Cap Reductn					0						0					
Storage Cap Reductn					0						0					
Reduced v/c Ratio					0.67						0.31					

Intersection Summary	
Area Type:	CBD
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:SBT and 6:, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis  
8: East Berkeley Street & Albany Street

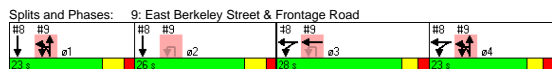
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations					↑↑						↑↑↑					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Total Lost Time (s)					4.0						4.0					
Lane Util. Factor					0.95						0.91					
Frpb, ped/bikes					1.00						0.99					
Flpb, ped/bikes					1.00						1.00					
Frt					1.00						0.93					
Flt Protected					0.99						1.00					
Satd. Flow (prot)					3096						4012					
Flt Permitted					0.99						1.00					
Satd. Flow (perm)					3096						4012					
Volume (vph)	0	0	0	125	560	0	0	0	0	0	255	225				
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.83	0.83	0.83				
Adj. Flow (vph)	0	0	0	134	602	0	0	0	0	0	307	271				
RTOR Reduction (vph)	0	0	0	0	19	0	0	0	0	0	0	0				
Lane Group Flow (vph)	0	0	0	0	717	0	0	0	0	0	578	0				
Confl. Peds. (#/hr)											6					
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	7%	7%	7%				
Turn Type				Split												
Protected Phases				3	4						1	2	3	4		
Permitted Phases																
Actuated Green, G (s)					44.9						44.1					
Effective Green, g (s)					45.9						46.1					
Actuated g/C Ratio					0.46						0.46					
Clearance Time (s)																
Vehicle Extension (s)																
Lane Grp Cap (vph)					1421						1850					
v/s Ratio Prot					c0.23						c0.14					
v/s Ratio Perm																
v/c Ratio					0.50						0.31					
Uniform Delay, d1					19.0						17.0					
Progression Factor					0.37						1.10					
Incremental Delay, d2					0.1						0.4					
Delay (s)					7.1						19.1					
Level of Service					A						B					
Approach Delay (s)		0.0			7.1			0.0			19.1					
Approach LOS		A			A			A			B					

Intersection Summary	
HCM Average Control Delay	12.4 HCM Level of Service B
HCM Volume to Capacity ratio	0.41
Actuated Cycle Length (s)	100.0 Sum of lost time (s) 8.0
Intersection Capacity Utilization	41.2% ICU Level of Service A
Analysis Period (min)	15
c	Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø4													
Lane Configurations																												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900																
Storage Length (ft)	0	0	0	0	200	0	0	0	0	0	0	0																
Storage Lanes	0	0	0	0	2	1	0	0	0	0	0	0																
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0																
Leading Detector (ft)					50		50		50																			
Trailing Detector (ft)					0		0		0																			
Turning Speed (mph)	15		9	15		9	9	15		9	15		9															
Right Turn on Red	<table border="0"> <tr> <td>Yes</td> <td colspan="3">No</td> <td colspan="3">Yes</td> <td colspan="3">No</td> <td colspan="3">Yes</td> </tr> </table>															Yes	No			Yes			No			Yes		
Yes	No			Yes			No			Yes																		
Link Speed (mph)	30	30			30			30			30																	
Link Distance (ft)	316	393			366			432			432																	
Travel Time (s)	7.2	8.7			8.3			9.8			9.8																	
Volume (vph)	0	0	0	0	375	75	30	310	460	125	0	0	0	0	0													
Confl. Peds. (#/hr)	8																											
Confl. Bikes (#/hr)	5																											
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.93	0.93	0.93	0.92	0.92	0.92															
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	7%	7%	2%	2%	2%																
Lane Group Flow (vph)	0	0	0	0	500	0	0	366	629	0	0	0	0															
Turn Type	custom Split																											
Protected Phases	3			1.4			1.4			1.4			1	2	4													
Permitted Phases	2.3																											
Detector Phases	3 1.4 1.4 1.4																											
Minimum Initial (s)	8.0																											
Minimum Split (s)	25.0																											
Total Split (s)	0.0	0.0	0.0	0.0	28.0	0.0	46.0	46.0	46.0	0.0	0.0	0.0	0.0	22.0	26.0	23.0												
Total Split (%)	0.0%	0.0%	0.0%	0.0%	28.0%	0.0%	46.0%	46.0%	46.0%	0.0%	0.0%	0.0%	0.0%	23%	26%	23%												
Yellow Time (s)	3.0																											
All-Red Time (s)	2.0																											
Lead/Lag	Lead Lag Lag																											
Lead-Lag Optimize?	Yes Yes Yes																											
Recall Mode	None Max C-Max None																											
w/c Ratio	0.50 0.47 0.52																											
Control Delay	35.1 5.3 23.4																											
Queue Delay	0.0 0.0 0.0																											
Total Delay	35.1 5.3 23.4																											
Queue Length 50th (ft)	100 13 160																											
Queue Length 95th (ft)	136 80 217																											
Internal Link Dist (ft)	236	303			286			352																				
Turn Bay Length (ft)																												
Base Capacity (vph)	1025 779 1191																											
Starvation Cap Reductn	0 0 0																											
Spillback Cap Reductn	0 0 0																											
Storage Cap Reductn	0 0 0																											
Reduced w/c Ratio	0.49 0.47 0.53																											

Intersection Summary															
Area Type:	CBD														
Cycle Length:	100														
Actuated Cycle Length:	100														
Offset:	0 (0%), Referenced to phase 2:SBT and 6:, Start of Green														
Natural Cycle:	100														
Control Type:	Actuated-Coordinated														



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0 4.0 4.0											
Lane Util. Factor	0.91 0.91 0.91											
Frpb, ped/bikes	0.99 1.00 1.00											
Flpb, ped/bikes	1.00 1.00 1.00											
Fit	0.98 1.00 0.97											
Fit Protected	1.00 0.95 1.00											
Satd. Flow (prot)	4273 1387 2816											
Fit Permitted	1.00 0.95 1.00											
Satd. Flow (perm)	4273 1387 2816											
Volume (vph)	0	0	0	0	375	75	30	310	460	125	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.93	0.93	0.93	0.92	0.92
Adj. Flow (vph)	0	0	0	0	417	83	33	333	495	134	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	191	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	500	0	0	175	629	0	0	0
Confl. Peds. (#/hr)	8											
Confl. Bikes (#/hr)	5											
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	7%	7%	2%	2%	2%
Turn Type	custom Split											
Protected Phases	3			1.4			1.4			1.4		
Permitted Phases	2.3											
Actuated Green, G (s)	22.4 40.6 40.6											
Effective Green, g (s)	23.4 42.6 42.6											
Actuated g/C Ratio	0.23 0.43 0.43											
Clearance Time (s)	5.0											
Vehicle Extension (s)	2.0											
Lane Grp Cap (vph)	1000 591 1200											
v/s Ratio Prot	c0.12 0.13 c0.22											
v/s Ratio Perm												
w/c Ratio	0.50 0.30 0.52											
Uniform Delay, d1	33.2 18.8 21.2											
Progression Factor	1.00 1.00 1.00											
Incremental Delay, d2	0.1 0.1 0.2											
Delay (s)	33.4 19.0 21.4											
Level of Service	C C C											
Approach Delay (s)	0.0			33.4			20.5			0.0		
Approach LOS	A			C			C			A		

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	34.0
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		
c	Critical Lane Group		



Lanes, Volumes, Timings

12: Traveler Street & Washington Street

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑↑			↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50			50
Trailing Detector (ft)		0	0			0
Turning Speed (mph)	15	9		9	15	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	25		25			30
Link Distance (ft)	426		402			313
Travel Time (s)	11.6		11.0			7.1
Volume (vph)	0	270	365	0	0	15
Peak Hour Factor	1.00	1.00	0.92	0.92	0.70	0.70
Heavy Vehicles (%)	2%	2%	6%	6%	100%	100%
Lane Group Flow (vph)	0	270	397	0	0	21
Turn Type	custom					
Protected Phases	5		1			1
Permitted Phases	1					
Detector Phases	5		1			1
Minimum Initial (s)	8.0		10.0			10.0
Minimum Split (s)		28.0	28.0			28.0
Total Split (s)	0.0	36.0	44.0	0.0	0.0	44.0
Total Split (%)	0.0%	45.0%	55.0%	0.0%	0.0%	55.0%
Yellow Time (s)		3.0	3.0			3.0
All-Red Time (s)		1.0	1.0			1.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	C-Max			C-Max	
v/c Ratio	0.19	0.12			0.03	
Control Delay	0.2	3.4			4.3	
Queue Delay	0.0	0.0			0.0	
Total Delay	0.2	3.4			4.3	
Queue Length 50th (ft)		0	10			2
Queue Length 95th (ft)		m0	42			10
Internal Link Dist (ft)	346		322			233
Turn Bay Length (ft)						
Base Capacity (vph)	1450	3347			650	
Starvation Cap Reductn	0	0			0	
Spillback Cap Reductn	0	0			0	
Storage Cap Reductn	0	0			0	
Reduced v/c Ratio	0.19	0.12			0.03	

Intersection Summary

Area Type: CBD

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 6 (8%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Traveler Street & Washington Street



HCM Signalized Intersection Capacity Analysis

12: Traveler Street & Washington Street

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Saturday Midday Peak

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑↑			↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor	1.00	0.91				1.00
Fr		0.86	1.00			1.00
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		1450	4404			855
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		1450	4404			855
Volume (vph)	0	270	365	0	0	15
Peak-hour factor, PHF	1.00	1.00	0.92	0.92	0.70	0.70
Adj. Flow (vph)	0	270	397	0	0	21
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	270	397	0	0	21
Heavy Vehicles (%)	2%	2%	6%	6%	100%	100%
Turn Type	custom					
Protected Phases	5		1			1
Permitted Phases	1					
Actuated Green, G (s)		72.0	60.8			60.8
Effective Green, g (s)		72.0	60.8			60.8
Actuated g/C Ratio		0.90	0.76			0.76
Clearance Time (s)		4.0	4.0			4.0
Vehicle Extension (s)		2.0	2.0			2.0
Lane Grp Cap (vph)		1450	3347			650
v/s Ratio Prot		c0.03	0.09			0.02
v/s Ratio Perm		0.16				
v/c Ratio		0.19	0.12			0.03
Uniform Delay, d1		0.5	2.5			2.4
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.0	0.1			0.1
Delay (s)		0.5	2.6			2.5
Level of Service		A	A			A
Approach Delay (s)	0.5		2.6			2.5
Approach LOS	A		A			A

Intersection Summary

HCM Average Control Delay 1.8 HCM Level of Service A

HCM Volume to Capacity ratio 0.19

Actuated Cycle Length (s) 80.0 Sum of lost time (s) 0.0

Intersection Capacity Utilization 33.6% ICU Level of Service A

Analysis Period (min) 15

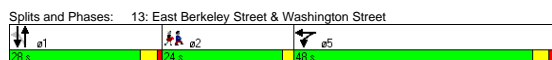
c Critical Lane Group

Lanes, Volumes, Timings  
 13: East Berkeley Street & Washington Street

10995.00 :: Boston Herald Redevelopment  
 2011 Existing Conditions :: Saturday Midday Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0	0	0	0	80	0	0	0	0	0	0	
Storage Lanes	0	0	0	0	0	1	0	0	0	0	0	0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			Yes		
Link Speed (mph)		25			30			25			30		
Link Distance (ft)		267			505			276			402		
Travel Time (s)		7.3			11.5			7.5			9.1		
Volume (vph)	0	0	0	90	530	110	90	255	0	0	15	0	
Confl. Peds. (#/hr)				106		94	81						
Confl. Bikes (#/hr)						8							
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.94	0.94	0.94	0.92	0.88	0.92	
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	6%	6%	6%	2%	100%	2%	
Lane Group Flow (vph)	0	0	0	0	761	0	96	271	0	0	17	0	
Turn Type				Split		Perm							
Protected Phases				5	5		1			1		2	
Permitted Phases							1						
Detector Phases				5	5		1	1			1		
Minimum Initial (s)				8.0	8.0		20.0	20.0			20.0		2.0
Minimum Split (s)				25.0	25.0		24.0	24.0			24.0		24.0
Total Split (s)	0.0	0.0	0.0	48.0	48.0	0.0	28.0	28.0	0.0	0.0	28.0	0.0	24.0
Total Split (%)	0.0%	0.0%	0.0%	48.0%	48.0%	0.0%	28.0%	28.0%	0.0%	0.0%	28.0%	0.0%	24%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0		2.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0			1.0		0.0
Lead/Lag						Lead	Lead			Lead		Lag	
Lead-Lag Optimize?													
Recall Mode				None	None		C-Min	C-Min		C-Min		None	
w/c Ratio				0.81	0.16		0.30	0.04			0.04		
Control Delay				42.0	16.2		16.5	16.5			16.5		
Queue Delay				0.0	0.0		0.0	0.0			0.0		
Total Delay				42.0	16.2		16.5	16.5			16.5		
Queue Length 50th (ft)				160	34		106	6			6		
Queue Length 95th (ft)				192	76		188	20			20		
Internal Link Dist (ft)	187			425			196				322		
Turn Bay Length (ft)							80						
Base Capacity (vph)				1919			599	911			483		
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 w/c Ratio				0.40			0.16	0.30			0.04		

Intersection Summary	
Area Type:	CBD
Cycle Length:	100
Actuated Cycle Length:	100
Offset: 98 (98%), Referenced to phase 1:NBSB, Start of Green	
Natural Cycle:	75
Control Type:	Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis  
 13: East Berkeley Street & Washington Street

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 2011 Existing Conditions :: Saturday Midday Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)							4.0	4.0	4.0			4.0
Lane Util. Factor							0.91	1.00	1.00			1.00
Frpb, ped/bikes							0.98	1.00	1.00			1.00
Flpb, ped/bikes							1.00	0.88	1.00			1.00
Fr							0.98	1.00	1.00			1.00
Fl							0.99	0.95	1.00			1.00
Satd. Flow (prot)							4303	1351	1613			855
Flt Permitted							0.99	0.75	1.00			1.00
Satd. Flow (perm)							4303	1061	1613			855
Volume (vph)	0	0	0	90	530	110	90	255	0	0	15	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.94	0.94	0.94	0.92	0.88	0.92
Adj. Flow (vph)	0	0	0	94	552	115	96	271	0	0	17	0
RTOR Reduction (vph)	0	0	0	36	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	725	0	96	271	0	0	17	0
Confl. Peds. (#/hr)				106		94	81					
Confl. Bikes (#/hr)						8						
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	6%	6%	6%	2%	100%	2%
Turn Type				Split		Perm						
Protected Phases				5	5		1			1		
Permitted Phases							1					
Actuated Green, G (s)							21.1	55.7	55.7			55.7
Effective Green, g (s)							21.1	55.7	55.7			55.7
Actuated g/C Ratio							0.21	0.56	0.56			0.56
Clearance Time (s)							4.0	4.0	4.0			4.0
Vehicle Extension (s)							3.0	3.0	3.0			3.0
Lane Grp Cap (vph)							908	591	898			476
v/s Ratio Prot							c0.17		c0.17			0.02
v/s Ratio Perm								0.09				
w/c Ratio							0.80	0.16	0.30			0.04
Uniform Delay, d1							37.4	10.8	11.8			10.0
Progression Factor							1.00	1.00	1.00			1.00
Incremental Delay, d2							5.0	0.6	0.9			0.1
Delay (s)							42.4	11.4	12.7			10.2
Level of Service							D	B	B			B
Approach Delay (s)	0.0						42.4		12.3			10.2
Approach LOS	A						D		B			B

Intersection Summary			
HCM Average Control Delay	32.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		
c	Critical Lane Group		

HCM Unsignalized Intersection Capacity Analysis  
10: William E Mullins Way & Harrison Avenue

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Saturday MIDDAY Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Free		Free		Free		Free	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	15	0	105	0	0	0	100	45	1	1	330	65
Peak Hour Factor	0.87	0.87	0.87	0.92	0.92	0.92	0.88	0.88	0.88	0.94	0.94	0.94
Hourly flow rate (vph)	17	0	121	0	0	0	114	51	1	1	351	69
Pedestrians	42		33		2		6		12.0		12.0	
Lane Width (ft)	12.0		12.0		4.0		4.0		4.0		4.0	
Walking Speed (ft/s)	4		3		0		0		0		0	
Percent Blockage	4		3		0		0		0		0	
Right turn flare (veh)	Raised		Raised		364		356		None		None	
Median type	1		1		364		356		None		None	
Median storage (veh)	1		1		364		356		None		None	
Upstream signal (ft)	1		1		364		356		None		None	
pX, platoon unblocked	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
vC, conflicting volume	689	742	254	612	776	65	462	85	85	85	2395	0
vC1, stage 1 conf vol	430	430	0	312	312	0	312	312	312	312	2395	0
vC2, stage 2 conf vol	259	313	0	300	464	0	464	464	464	464	0	0
vCu, unblocked vol	666	720	224	588	755	65	435	85	85	85	2314	0
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1	4.2	4.2	4.2	6.5	6.9
tC, 2 stage (s)	6.5	5.5	6.5	6.5	5.5	6.5	5.5	2.2	2.2	2.2	4.0	3.3
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	2.2	2.2	2.2	100	100
p0 queue free %	96	100	84	100	100	100	89	100	100	100	59	100
cM capacity (veh/h)	407	395	744	360	346	954	1063	1461	1461	1461	1593	1084
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>						
Volume Total	138	0	139	27	177	245						
Volume Left	17	0	114	0	1	0						
Volume Right	121	0	0	1	0	69						
cSH	674	1700	1063	1700	1461	1700						
Volume to Capacity	0.20	0.00	0.11	0.02	0.00	0.14						
Queue Length 95th (ft)	19	0	9	0	0	0						
Control Delay (s)	11.7	0.0	7.4	0.0	0.1	0.0						
Lane LOS	B	A	A	A	A	A						
Approach Delay (s)	11.7	0.0	6.2	0.0								
Approach LOS	B	A										
<b>Intersection Summary</b>												
Average Delay	3.7											
Intersection Capacity Utilization	43.0%											
ICU Level of Service	A											
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
11: Boston Herald Back & Albany Street

10995.00 :: Boston Herald Redevelopment  
2011 Existing Conditions :: Saturday MIDDAY Peak



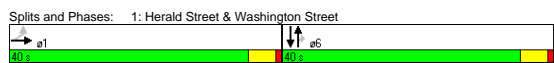
Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations	↕		↕		↕		↕		↕	
Sign Control	Stop		Free		Free		Stop		Stop	
Grade	0%		0%		0%		0%		0%	
Volume (veh/h)	0	1	0	0	0	630	1035	1	0	0
Peak Hour Factor	0.25	0.25	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	4	0	0	0	656	1078	1	0	0
Pedestrians	4		0		0		0		0	
Lane Width (ft)	12.0		12.0		4.0		4.0		4.0	
Walking Speed (ft/s)	4		3		0		0		0	
Percent Blockage	4		3		0		0		0	
Right turn flare (veh)	None		None		557		158		None	
Median type	None		None		557		158		None	
Median storage (veh)	None		None		557		158		None	
Upstream signal (ft)	None		None		557		158		None	
pX, platoon unblocked	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
vC, conflicting volume	2395	2395	1083	0	0	2396	0	0	0	0
vC1, stage 1 conf vol	2395	2395	0	0	0	2396	0	0	0	0
vC2, stage 2 conf vol	0	0	0	0	0	0	0	0	0	0
vCu, unblocked vol	2314	2314	826	0	0	2314	0	0	0	0
tC, single (s)	7.5	6.5	4.1	4.2	4.2	6.5	6.9	6.5	6.9	6.9
tC, 2 stage (s)	3.5	4.0	2.2	2.3	2.3	4.0	3.3	4.0	3.3	3.3
tF (s)	3.5	4.0	2.2	2.3	2.3	4.0	3.3	4.0	3.3	3.3
p0 queue free %	100	80	100	59	59	100	100	100	100	100
cM capacity (veh/h)	12	20	704	1593	1593	19	1084	19	1084	1084
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>SB 1</b>	<b>SB 2</b>	<b>SB 3</b>						
Volume Total	4	926	539	271						
Volume Left	0	656	0	0						
Volume Right	0	0	0	1						
cSH	20	1593	1700	1700						
Volume to Capacity	0.20	0.41	0.32	0.16						
Queue Length 95th (ft)	15	52	0	0						
Control Delay (s)	227.5	7.5	0.0	0.0						
Lane LOS	F	A	A	A						
Approach Delay (s)	227.5	4.0								
Approach LOS	F									
<b>Intersection Summary</b>										
Average Delay	4.5									
Intersection Capacity Utilization	48.8%									
ICU Level of Service	A									
Analysis Period (min)	15									

## 2016 No-Build Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕↕↕			↔↔↔			↕↕↕			↕↕↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50						50	50	50		
Trailing Detector (ft)	0	0						0	0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red	No			Yes			Yes			Yes		
Link Speed (mph)	30			30			30			30		
Link Distance (ft)	376			397			364			464		
Travel Time (s)	8.5			9.0			8.3			10.5		
Volume (vph)	65	895	0	0	0	0	0	630	35	0	20	0
Confl. Peds. (#/hr)	9		16					102	102			
Confl. Bikes (#/hr)	1							8				
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.89	0.89	0.89	0.59	0.59	0.59
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	8%	8%	8%	100%	100%	100%
Bus Blockages (#/hr)	0	9	9	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1021	0	0	0	0	0	708	39	0	34	0
Turn Type	Perm						Perm					
Protected Phases	1						6			6		
Permitted Phases	1						6			6		
Detector Phases	1						6			6		
Minimum Initial (s)	12.0	12.0						12.0	12.0		12.0	
Minimum Split (s)	31.0	31.0						31.0	31.0		31.0	
Total Split (s)	40.0	40.0	0.0	0.0	0.0	0.0	0.0	40.0	40.0	0.0	40.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	50.0%	0.0%
Yellow Time (s)	4.0	4.0						4.0	4.0		4.0	
All-Red Time (s)	1.0	1.0						1.0	1.0		1.0	
Lead/Lag												
Recall Mode	Max	Max					C-Max	C-Max	C-Max			
v/c Ratio	0.53						0.52			0.07		
Control Delay	17.2						18.7			5.3		
Queue Delay	0.0						0.0			0.0		
Total Delay	17.2						18.7			5.3		
Queue Length 50th (ft)	129						133			1		
Queue Length 95th (ft)	168						178			m14		
Internal Link Dist (ft)	296			317			284			384		
Turn Bay Length (ft)												
Base Capacity (vph)	1915						1354			545		
Starvation Cap Reductn	0						0			0		
Spillback Cap Reductn	0						0			0		
Storage Cap Reductn	0						0			0		
Reduced v/c Ratio	0.53						0.52			0.07		

**Intersection Summary**

Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 45 (56%), Referenced to phase 6:NBSB, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕↕↕			↔↔↔			↕↕↕			↕↕↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0						4.0			4.0		
Lane Util. Factor	0.91						0.95			1.00		
Frpb, ped/bikes	1.00						1.00			0.86		
Flpb, ped/bikes	1.00						1.00			1.00		
Frt	1.00						1.00			0.85		
Flt Protected	1.00						1.00			1.00		
Satd. Flow (prot)	4253						3008			1164		
Flt Permitted	1.00						1.00			1.00		
Satd. Flow (perm)	4253						3008			1164		
Volume (vph)	65	895	0	0	0	0	0	630	35	0	20	0
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.89	0.89	0.89	0.59	0.59	0.59
Adj. Flow (vph)	69	952	0	0	0	0	0	708	39	0	34	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	21	0	0	0
Lane Group Flow (vph)	0	1021	0	0	0	0	0	708	18	0	34	0
Confl. Peds. (#/hr)	9		16					102	102			
Confl. Bikes (#/hr)	1							8				
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	8%	8%	8%	100%	100%	100%
Bus Blockages (#/hr)	0	9	9	0	0	0	0	0	0	0	0	0
Turn Type	Perm						Perm					
Protected Phases	1						6			6		
Permitted Phases	1						6			6		
Actuated Green, G (s)	35.0						35.0			35.0		
Effective Green, g (s)	36.0						36.0			36.0		
Actuated g/C Ratio	0.45						0.45			0.45		
Clearance Time (s)	5.0						5.0			5.0		
Vehicle Extension (s)	3.0						3.0			3.0		
Lane Grp Cap (vph)	1914						1354			524		
v/s Ratio Prot							c0.24			0.04		
v/s Ratio Perm	0.24						0.52			0.02		
w/c Ratio	0.53						0.52			0.03		
Uniform Delay, d1	15.9						15.8			12.3		
Progression Factor	1.00						1.07			1.10		
Incremental Delay, d2	1.1						1.4			0.1		
Delay (s)	17.0						18.4			13.7		
Level of Service	B						B			B		
Approach Delay (s)	17.0			0.0			18.1			13.1		
Approach LOS	B			A			B			B		

**Intersection Summary**

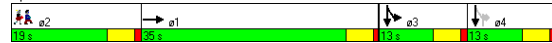
HCM Average Control Delay: 17.4 HCM Level of Service: B  
 HCM Volume to Capacity ratio: 0.53  
 Actuated Cycle Length (s): 80.0 Sum of lost time (s): 8.0  
 Intersection Capacity Utilization: 46.7% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50									50	50	50	
Trailing Detector (ft)	0									0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes	No		Yes		
Link Speed (mph)	30			30			30			30			
Link Distance (ft)	397			540			356			340			
Travel Time (s)	9.0			12.3			8.1			7.7			
Volume (vph)	0	780	150	0	0	0	0	0	65	100	155	0	
Confl. Bikes (#/hr)									1				
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96	0.73	0.73	0.73	
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	3%	3%	3%	21%	21%	21%	
Parking (#/hr)									2				
Lane Group Flow (vph)	0	968	0	0	0	0	0	0	68	137	212	0	
Turn Type	custom custom												
Protected Phases	1									3	3	4	2
Permitted Phases									4	4			
Detector Phases	1								4	3	3	4	
Minimum Initial (s)	1.0								8.0	8.0			4.0
Minimum Split (s)	19.0								13.0	13.0			19.0
Total Split (s)	0.0	35.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	13.0	26.0	0.0	19.0
Total Split (%)	0.0%	43.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.3%	16.3%	32.5%	0.0%	24%
Yellow Time (s)	4.0								4.0	4.0			4.0
All-Red Time (s)	1.0								1.0	1.0			1.0
Lead/Lag	Lag								Lag	Lead			Lead
Lead-Lag Optimize?	Yes								Yes	Yes			Yes
Recall Mode	Max								Max	Max			Max
v/c Ratio	0.57								0.07	0.37	0.29		
Control Delay	19.7								0.2	27.0	24.1		
Queue Delay	0.0								0.0	0.0	0.0		
Total Delay	19.7								0.2	27.0	24.1		
Queue Length 50th (ft)	127								0	55	43		
Queue Length 95th (ft)	168								0	82	57		
Internal Link Dist (ft)	317			460				276				260	
Turn Bay Length (ft)													
Base Capacity (vph)	1686								917	369	738		
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	0.57								0.07	0.37	0.29		

Intersection Summary

Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Natural Cycle: 65  
 Control Type: Semi Act-Uncoord

Splits and Phases: 2: Herald Street & Harrison Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0								4.0	4.0	4.0	
Lane Util. Factor	0.91								0.88	1.00	0.95	
Frpb, ped/bikes	1.00								0.99	1.00	1.00	
Flpb, ped/bikes	1.00								1.00	1.00	1.00	
Frt	0.98								0.85	1.00	1.00	
Flt Protected	1.00								1.00	0.95	1.00	
Satd. Flow (prot)	4257								2314	1343	2685	
Flt Permitted	1.00								1.00	0.95	1.00	
Satd. Flow (perm)	4257								2314	1343	2685	
Volume (vph)	0	780	150	0	0	0	0	0	65	100	155	0
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96	0.73	0.73	0.73
Adj. Flow (vph)	0	812	156	0	0	0	0	0	68	137	212	0
RTOR Reduction (vph)	0	36	0	0	0	0	0	0	60	0	0	0
Lane Group Flow (vph)	0	932	0	0	0	0	0	0	8	137	212	0
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	3%	3%	3%	21%	21%	21%
Parking (#/hr)									2			
Turn Type	custom custom											
Protected Phases	1									3	3	4
Permitted Phases									4	4		
Actuated Green, G (s)	30.0								8.0	16.0	21.0	
Effective Green, g (s)	31.0								9.0	18.0	22.0	
Actuated g/C Ratio	0.39								0.11	0.22	0.28	
Clearance Time (s)	5.0								5.0	5.0		
Vehicle Extension (s)	3.0								2.0	2.0		
Lane Grp Cap (vph)	1650								260	369	738	
v/s Ratio Prot	c0.22								c0.04	0.08		
v/s Ratio Perm									0.00	0.06		
v/c Ratio	0.57								0.03	0.37	0.29	
Uniform Delay, d1	19.2								31.6	26.8	22.8	
Progression Factor	1.00								1.00	1.00	1.00	
Incremental Delay, d2	1.4								0.2	2.9	1.0	
Delay (s)	20.6								31.8	29.6	23.8	
Level of Service	C								C	C	C	
Approach Delay (s)	20.6				0.0				31.8			26.1
Approach LOS	C				A				C			C

Intersection Summary

HCM Average Control Delay: 22.5  
 HCM Volume to Capacity ratio: 0.48  
 Actuated Cycle Length (s): 80.0  
 Intersection Capacity Utilization: 43.8%  
 Analysis Period (min): 15  
 HCM Level of Service: C  
 Sum of lost time (s): 27.0  
 ICU Level of Service: A

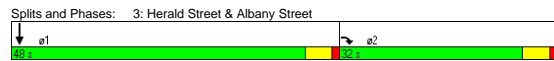
c Critical Lane Group

Lanes, Volumes, Timings  
3: Herald Street & Albany Street

10995.00 :: Boston Herald Redevelopment  
2016 No-Build Conditions :: Weekday Morning Peak

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50			50	
Trailing Detector (ft)		0			0	
Turning Speed (mph)	15	9	15			9
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	540			158	348	
Travel Time (s)	12.3			3.6	7.9	
Volume (vph)	0	945	0	0	1380	0
Peak Hour Factor	0.90	0.90	0.92	0.92	0.95	0.95
Heavy Vehicles (%)	7%	7%	2%	2%	9%	9%
Lane Group Flow (vph)	0	1050	0	0	1453	0
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Detector Phases	2		1			
Minimum Initial (s)	8.0		8.0			
Minimum Split (s)	23.0		23.0			
Total Split (s)	0.0	32.0	0.0	0.0	48.0	0.0
Total Split (%)	0.0%	40.0%	0.0%	0.0%	60.0%	0.0%
Yellow Time (s)	4.0		4.0			
All-Red Time (s)	1.0		1.0			
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	Max		C-Max			
v/c Ratio	0.97		0.62			
Control Delay	47.9		13.7			
Queue Delay	0.0		0.0			
Total Delay	47.9		13.7			
Queue Length 50th (ft)	222		168			
Queue Length 95th (ft)	#335		212			
Internal Link Dist (ft)	460		78		268	
Turn Bay Length (ft)						
Base Capacity (vph)	1084		2356			
Starvation Cap Reductn	0		0			
Spillback Cap Reductn	0		0			
Storage Cap Reductn	0		0			
Reduced v/c Ratio	0.97		0.62			

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 19 (24%), Referenced to phase 1:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



HCM Signalized Intersection Capacity Analysis  
3: Herald Street & Albany Street

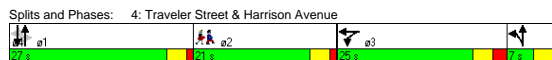
10995.00 :: Boston Herald Redevelopment  
2016 No-Build Conditions :: Weekday Morning Peak

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			
Lane Util. Factor	0.76		0.91			
Frt	0.85		1.00			
Flt Protected	1.00		1.00			
Satd. Flow (prot)	3097		4283			
Flt Permitted	1.00		1.00			
Satd. Flow (perm)	3097		4283			
Volume (vph)	0	945	0	0	1380	0
Peak-hour factor, PHF	0.90	0.90	0.92	0.92	0.95	0.95
Adj. Flow (vph)	0	1050	0	0	1453	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	1050	0	0	1453	0
Heavy Vehicles (%)	7%	7%	2%	2%	9%	9%
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Actuated Green, G (s)	27.0		43.0			
Effective Green, g (s)	28.0		44.0			
Actuated g/C Ratio	0.35		0.55			
Clearance Time (s)	5.0		5.0			
Vehicle Extension (s)	2.0		2.0			
Lane Grp Cap (vph)	1084		2356			
v/s Ratio Prot	c0.34		c0.34			
v/s Ratio Perm						
v/c Ratio	0.97		0.62			
Uniform Delay, d1	25.6		12.3			
Progression Factor	1.00		1.00			
Incremental Delay, d2	20.8		1.2			
Delay (s)	46.3		13.5			
Level of Service	D		B			
Approach Delay (s)	46.3		0.0	13.5		
Approach LOS	D		A	B		
<b>Intersection Summary</b>						
HCM Average Control Delay	27.3		HCM Level of Service		C	
HCM Volume to Capacity ratio	0.75					
Actuated Cycle Length (s)	80.0		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	60.8%		ICU Level of Service		B	
Analysis Period (min)	15					

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations				↔	↔			↔	↔		↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50		
Trailing Detector (ft)	0	0		0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			No		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)	439			513			372			364			
Travel Time (s)	10.0			11.7			8.5			8.3			
Volume (vph)	0	0	0	25	60	110	145	180	145	75	215	30	
Confl. Bikes (#/hr)					1			4			4		
Peak Hour Factor	0.92	0.92	0.92	0.86	0.86	0.86	0.92	0.92	0.92	0.84	0.84	0.84	
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	5%	5%	5%	11%	11%	11%	
Lane Group Flow (vph)	0	0	0	29	198	0	0	512	0	0	381	0	
Turn Type				Split		D.P+P			Perm				
Protected Phases				3	3		4	14		1		2	
Permitted Phases							1			1			
Detector Phases				3	3		4	14		1	1		
Minimum Initial (s)				7.0	7.0		4.0			7.0	7.0		2.0
Minimum Split (s)				21.0	21.0		7.0			20.0	20.0		21.0
Total Split (s)	0.0	0.0	0.0	25.0	25.0	0.0	7.0	34.0	0.0	27.0	27.0	0.0	21.0
Total Split (%)	0.0%	0.0%	0.0%	31.3%	31.3%	0.0%	8.8%	42.5%	0.0%	33.8%	33.8%	0.0%	26%
Yellow Time (s)				3.0	3.0		3.0			3.0	3.0		3.0
All-Red Time (s)				2.0	2.0		0.0			1.0	1.0		1.0
Lead/Lag				Lead	Lead		Lag			Lead	Lead		Lag
Lead-Lag Optimize?				Yes	Yes		Yes			Yes	Yes		Yes
Recall Mode				Max	Max		Max			C-Max	C-Max		None
v/c Ratio				0.05	0.29			0.68			0.67		
Control Delay				19.6	11.0			23.0			32.0		
Queue Delay				0.0	0.0			0.0			0.1		
Total Delay				19.6	11.0			23.0			32.0		
Queue Length 50th (ft)				7	20			78			87		
Queue Length 95th (ft)				29	84			122			125		
Internal Link Dist (ft)		359			433			292			284		
Turn Bay Length (ft)													
Base Capacity (vph)				644	672			750			569		
Starvation Cap Reductn				0	0			0			0		
Spillback Cap Reductn				0	0			0			5		
Storage Cap Reductn				0	0			0			0		
Reduced v/c Ratio				0.05	0.29			0.68			0.68		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 48 (60%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔	↔			↔	↔		↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0			4.0	4.0	
Lane Util. Factor	1.00	1.00		0.95	0.95		1.00			0.95	0.95	
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00			1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00			1.00	1.00	
Frt	1.00	0.90		0.95	0.95		0.95			0.95	0.99	
Flt Protected				0.95	1.00		0.98			0.98	0.99	
Satd. Flow (prot)				1533	1445		2893			2845	2845	
Flt Permitted				0.95	1.00		0.68			0.66	0.66	
Satd. Flow (perm)				1533	1445		1985			1906	1906	
Volume (vph)	0	0	0	25	60	110	145	180	145	75	215	30
Peak-hour factor, PHF	0.92	0.92	0.92	0.86	0.86	0.86	0.92	0.92	0.92	0.84	0.84	0.84
Adj. Flow (vph)	0	0	0	29	70	128	158	196	158	89	256	36
RTOR Reduction (vph)	0	0	0	0	65	0	0	67	0	0	0	0
Lane Group Flow (vph)	0	0	0	29	133	0	0	445	0	0	381	0
Confl. Bikes (#/hr)					1			1985			4	
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	5%	5%	5%	11%	11%	11%
Turn Type				Split		D.P+P			Perm			
Protected Phases				3	3		4	14		1		1
Permitted Phases							1			1		
Actuated Green, G (s)				32.6	32.6			24.6			20.6	
Effective Green, g (s)				33.6	33.6			23.6			20.6	
Actuated g/C Ratio				0.42	0.42			0.30			0.26	
Clearance Time (s)				5.0	5.0			1.0			4.0	
Vehicle Extension (s)				2.0	2.0						2.0	
Lane Grp Cap (vph)				644	607			620			491	
v/s Ratio Prot				0.02	c0.09			c0.03				
v/s Ratio Perm								0.18			c0.20	
v/c Ratio				0.05	0.22			0.72			0.78	
Uniform Delay, d1				13.7	14.8			25.2			27.6	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				0.1	0.8			7.0			11.4	
Delay (s)				13.8	15.7			32.2			39.0	
Level of Service				B	B			C			D	
Approach Delay (s)	0.0				15.4			32.2			39.0	
Approach LOS	A				B			C			D	

**Intersection Summary**  
 HCM Average Control Delay: 31.1 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.45  
 Actuated Cycle Length (s): 80.0 Sum of lost time (s): 22.8  
 Intersection Capacity Utilization: 46.5% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50									50	50		
Trailing Detector (ft)	0									0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes	Yes		Yes		No
Link Speed (mph)	30			30			30			30			
Link Distance (ft)	513			322			416			557			
Travel Time (s)	11.7			7.3			9.5			12.7			
Volume (vph)	0	145	80	0	0	0	0	0	0	745	800	210	
Confl. Bikes (#/hr)		5											
Peak Hour Factor	0.74	0.74	0.74	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94	
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	2%	2%	2%	7%	7%	7%	
Lane Group Flow (vph)	0	304	0	0	0	0	0	0	0	773	1094	0	
Turn Type										Split			
Protected Phases	3									1	1		2
Permitted Phases													
Detector Phases	3									1	1		
Minimum Initial (s)	8.0									10.0	10.0		4.0
Minimum Split (s)	24.0									24.0	24.0		19.0
Total Split (s)	0.0	36.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	65.0	65.0	0.0	19.0
Total Split (%)	0.0%	30.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	54.2%	54.2%	0.0%	16%
Yellow Time (s)	4.0									4.0	4.0		4.0
All-Red Time (s)	1.0									1.0	1.0		1.0
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?										Yes	Yes		Yes
Recall Mode	None									C-Max	C-Max		None
v/c Ratio	0.74									0.63	0.50		
Control Delay	47.4									4.3	7.3		
Queue Delay	0.0									0.4	0.0		
Total Delay	47.4									4.7	7.3		
Queue Length 50th (ft)	87									19	112		
Queue Length 95th (ft)	98									185	350		
Internal Link Dist (ft)	433			242			336			477			
Turn Bay Length (ft)													
Base Capacity (vph)	804									1218	2201		
Starvation Cap Reductn	0									119	0		
Spillback Cap Reductn	0									0	0		
Storage Cap Reductn	0									0	0		
Reduced v/c Ratio	0.38									0.70	0.50		
<b>Intersection Summary</b>													
Area Type:	CBD												
Cycle Length:	120												
Actuated Cycle Length:	120												
Offset:	116 (97%), Referenced to phase 1:SBTL, Start of Green												
Natural Cycle:	80												
Control Type:	Actuated-Coordinated												
Splits and Phases: 5: Traveler Street & Albany Street													

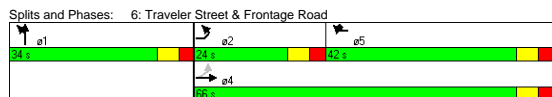
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0									4.0	4.0		
Lane Util. Factor	0.95									0.91	0.91		
Frpb, ped/bikes	0.99									1.00	1.00		
Flpb, ped/bikes	1.00									1.00	1.00		
Frt	0.95									1.00	0.97		
Flt Protected	1.00									0.95	1.00		
Satd. Flow (prot)	2775									1382	2817		
Flt Permitted	1.00									0.95	1.00		
Satd. Flow (perm)	2775									1382	2817		
Volume (vph)	0	145	80	0	0	0	0	0	0	745	800	210	
Peak-hour factor, PHF	0.74	0.74	0.74	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94	
Adj. Flow (vph)	0	196	108	0	0	0	0	0	0	793	851	223	
RTOR Reduction (vph)	0	75	0	0	0	0	0	0	0	159	1	0	
Lane Group Flow (vph)	0	229	0	0	0	0	0	0	0	614	1093	0	
Confl. Bikes (#/hr)		5											
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	2%	2%	2%	7%	7%	7%	
Turn Type										Split			
Protected Phases	3									1	1		
Permitted Phases													
Actuated Green, G (s)	13.4									88.8	88.8		
Effective Green, g (s)	14.4									89.8	89.8		
Actuated g/C Ratio	0.12									0.75	0.75		
Clearance Time (s)	5.0									5.0	5.0		
Vehicle Extension (s)	2.0									2.0	2.0		
Lane Grp Cap (vph)	333									1034	2108		
v/s Ratio Prot	c0.08									c0.44	0.39		
v/s Ratio Perm													
v/c Ratio	0.69									0.59	0.52		
Uniform Delay, d1	50.6									6.8	6.2		
Progression Factor	1.00									1.00	1.00		
Incremental Delay, d2	4.7									2.5	0.9		
Delay (s)	55.3									9.4	7.1		
Level of Service	E									A	A		
Approach Delay (s)	55.3			0.0			0.0				8.0		
Approach LOS	E			A			A				A		
<b>Intersection Summary</b>													
HCM Average Control Delay	14.7									HCM Level of Service	B		
HCM Volume to Capacity ratio	0.61												
Actuated Cycle Length (s)	120.0									Sum of lost time (s)	15.8		
Intersection Capacity Utilization	51.4%									ICU Level of Service	A		
Analysis Period (min)	15												
c	Critical Lane Group												

Lanes, Volumes, Timings  
6: Traveler Street & Frontage Road

10995.00 :: Boston Herald Redevelopment  
2016 No-Build Conditions :: Weekday Morning Peak

	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0
Turning Speed (mph)	15	15		9	9	15		9
Right Turn on Red	No			Yes				No
Link Speed (mph)			30				30	
Link Distance (ft)			322				432	
Travel Time (s)			7.3				9.8	
Volume (vph)	50	205	635	385	780	320	540	55
Confl. Peds. (#/hr)								4
Peak Hour Factor	0.95	0.95	0.95	0.91	0.91	0.98	0.98	0.98
Heavy Vehicles (%)	7%	7%	7%	3%	3%	10%	10%	10%
Lane Group Flow (vph)	0	269	668	423	857	327	607	0
Turn Type	Prot	Perm		custom	custom	Split		
Protected Phases	2	4	5	5	1	1		
Permitted Phases		4						
Detector Phases	2	4	4	5	5	1	1	
Minimum Initial (s)	10.0	10.0	10.0	8.0	8.0	10.0	10.0	
Minimum Split (s)	24.0	34.0	34.0	34.0	34.0	34.0	34.0	
Total Split (s)	24.0	66.0	66.0	42.0	42.0	34.0	34.0	0.0
Total Split (%)	24.0%	66.0%	66.0%	42.0%	42.0%	34.0%	34.0%	0.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead			Lag	Lag			
Lead-Lag Optimize?	Yes			Yes	Yes			
Recall Mode	Max	Max	Max	Max	Max	Max	Max	
v/c Ratio	0.29	0.35	0.90	1.16	0.38	0.48		
Control Delay	9.8	9.9	53.1	107.5	29.3	30.3		
Queue Delay	1.5	1.2	0.0	0.0	0.0	0.0		
Total Delay	11.3	11.1	53.1	107.5	29.3	30.3		
Queue Length 50th (ft)	73	100	284	~514	84	115		
Queue Length 95th (ft)	116	134	#495	#751	124	152		
Internal Link Dist (ft)			242			352		
Turn Bay Length (ft)								
Base Capacity (vph)	941	1882	472	738	860	1253		
Starvation Cap Reductn	491	937	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0		
Reduced v/c Ratio	0.60	0.71	0.90	1.16	0.38	0.48		

Intersection Summary	
Area Type:	CBD
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
- 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.	



HCM Signalized Intersection Capacity Analysis  
6: Traveler Street & Frontage Road

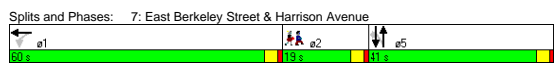
10995.00 :: Boston Herald Redevelopment  
2016 No-Build Conditions :: Weekday Morning Peak

	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.97	0.91		
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	1.00	0.85	0.85	1.00	0.99		
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1518	3036	1242	1411	2865	4179		
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1518	3036	1242	1411	2865	4179		
Volume (vph)	50	205	635	385	780	320	540	55
Peak-hour factor, PHF	0.95	0.95	0.95	0.91	0.91	0.98	0.98	0.98
Adj. Flow (vph)	53	216	668	423	857	327	551	56
RTOR Reduction (vph)	0	0	0	0	202	0	0	0
Lane Group Flow (vph)	0	269	668	423	655	327	607	0
Confl. Peds. (#/hr)								4
Heavy Vehicles (%)	7%	7%	7%	3%	3%	10%	10%	10%
Turn Type	Prot	Perm		custom	custom	Split		
Protected Phases	2	4	5	5	1	1		
Permitted Phases		4						
Actuated Green, G (s)	59.0	59.0	35.0	35.0	27.0	27.0		
Effective Green, g (s)	62.0	62.0	38.0	38.0	30.0	30.0		
Actuated g/C Ratio	0.62	0.62	0.38	0.38	0.30	0.30		
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		
Lane Grp Cap (vph)	941	1882	472	536	860	1254		
v/s Ratio Prot			c0.22	0.34	c0.46	0.11	c0.15	
v/s Ratio Perm		0.18						
v/c Ratio	0.29	0.35	0.90	1.22	0.38	0.48		
Uniform Delay, d1	8.8	9.3	29.1	31.0	27.7	28.7		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	0.8	0.5	22.3	115.8	1.3	1.3		
Delay (s)	9.5	9.8	51.4	146.8	28.9	30.0		
Level of Service	A	A	D	F	C	C		
Approach Delay (s)		9.7				29.6		
Approach LOS		A				C		

Intersection Summary			
HCM Average Control Delay	58.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations				↔↔↔	↔↔↔	↔↔↔		↔		↔	↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50			50		50	50		
Trailing Detector (ft)				0	0			0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30		30		30	
Link Distance (ft)		505			501			284		372		372	
Travel Time (s)		11.5			11.4			6.5		8.5		8.5	
Volume (vph)	0	0	0	185	1165	290	55	175	0	0	170	85	
Confl. Bikes (#/hr)					1							1	
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.80	0.80	0.80	0.81	0.81	0.81	
Heavy Vehicles (%)	2%	2%	2%	7%	7%	7%	4%	4%	4%	7%	7%	7%	
Bus Blockages (#/hr)	0	0	0	0	20	20	0	0	0	0	0	0	
Parking (#/hr)					1	1							
Lane Group Flow (vph)	0	0	0	0	1726	0	0	288	0	0	210	105	
Turn Type			Perm		Perm			Perm			Perm		
Protected Phases				1			5			5		2	
Permitted Phases				1			5			5			
Detector Phases				1	1		5	5		5	5		
Minimum Initial (s)				5.0	5.0		5.0	5.0		5.0	5.0	4.0	
Minimum Split (s)				22.0	22.0		20.0	20.0		20.0	20.0	19.0	
Total Split (s)	0.0	0.0	0.0	60.0	60.0	0.0	41.0	41.0	0.0	0.0	41.0	19.0	
Total Split (%)	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	34.2%	34.2%	0.0%	0.0%	34.2%	16%	
Yellow Time (s)				3.0	3.0		3.0	3.0		3.0	3.0	3.0	
All-Red Time (s)				1.0	1.0		1.0	1.0		1.0	1.0	1.0	
Lead/Lag				Lead	Lead			Lag			Lag		
Lead-Lag Optimize?				Yes	Yes			Yes			Yes		
Recall Mode				C-Max	C-Max		Max	Max		Max	Max	None	
v/c Ratio				0.89			0.64			0.35	0.19		
Control Delay				25.6			41.8			32.0	6.5		
Queue Delay				29.1			0.0			0.5	0.0		
Total Delay				54.7			41.8			32.5	6.5		
Queue Length 50th (ft)				449			202			129	0		
Queue Length 95th (ft)				m452			267			179	31		
Internal Link Dist (ft)		425		421			204			292			
Turn Bay Length (ft)													
Base Capacity (vph)				1940			448			594	564		
Starvation Cap Reductn				309			0			137	0		
Spillback Cap Reductn				0			0			0	0		
Storage Cap Reductn				0			0			0	0		
Reduced v/c Ratio				1.06			0.64			0.46	0.19		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 71 (59%), Referenced to phase 1:WBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔↔	↔↔↔	↔↔↔		↔		↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor				0.91			1.00			1.00	1.00	
Frpb, ped/bikes				1.00			1.00			1.00	1.00	
Flpb, ped/bikes				1.00			1.00			1.00	1.00	
Frt				0.97			1.00			1.00	0.85	
Flt Protected				0.99			0.99			1.00	1.00	
Satd. Flow (prot)				4102			1454			1598	1341	
Flt Permitted				0.99			0.87			1.00	1.00	
Satd. Flow (perm)				4102			1287			1598	1341	
Volume (vph)	0	0	0	185	1165	290	55	175	0	0	170	85
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.80	0.80	0.80	0.81	0.81	0.81
Adj. Flow (vph)	0	0	0	195	1226	305	69	219	0	0	210	105
RTOR Reduction (vph)	0	0	0	28	0	0	0	0	0	0	0	66
Lane Group Flow (vph)	0	0	0	0	1698	0	0	288	0	0	210	39
Confl. Bikes (#/hr)					1						1	
Heavy Vehicles (%)	2%	2%	2%	7%	7%	7%	4%	4%	4%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	20	20	0	0	0	0	0	0
Parking (#/hr)					1	1						
Turn Type			Perm		Perm			Perm			Perm	
Protected Phases				1			5			5		
Permitted Phases				1			5			5		
Actuated Green, G (s)				54.4			44.6			44.6	44.6	
Effective Green, g (s)				54.4			44.6			44.6	44.6	
Actuated g/C Ratio				0.45			0.37			0.37	0.37	
Clearance Time (s)				4.0			4.0			4.0	4.0	
Vehicle Extension (s)				2.0			2.0			2.0	2.0	
Lane Grp Cap (vph)				1860			478			594	498	
v/s Ratio Prot										0.13		
v/s Ratio Perm				0.41			c0.22			0.03		
v/c Ratio				0.91			0.60			0.35	0.08	
Uniform Delay, d1				30.6			30.5			27.3	24.4	
Progression Factor				0.92			1.00			1.00	1.00	
Incremental Delay, d2				2.8			5.5			1.6	0.3	
Delay (s)				27.7			36.1			28.9	24.7	
Level of Service				C			D			C	C	
Approach Delay (s)	0.0			27.7			36.1			27.5		
Approach LOS	A			C			D			C		

**Intersection Summary**  
 HCM Average Control Delay: 28.7 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.77  
 Actuated Cycle Length (s): 120.0 Sum of lost time (s): 21.0  
 Intersection Capacity Utilization: 69.9% ICU Level of Service: C  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø3	ø4
Lane Configurations					↑↑						↑↑↑					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Leading Detector (ft)				50	50						50					
Trailing Detector (ft)				0	0						0					
Turning Speed (mph)	15		9	15		9	15		9	15		9				
Right Turn on Red			Yes	Yes		Yes			Yes			No				
Link Speed (mph)		30			30			30			30					
Link Distance (ft)		501			316			383			416					
Travel Time (s)		11.4			7.2			8.7			9.5					
Volume (vph)	0	0	0	215	1330	0	0	0	0	0	545	335				
Confl. Peds. (#/hr)												7				
Peak Hour Factor	0.92	0.92	0.92	0.91	0.91	0.91	0.92	0.92	0.92	0.83	0.83	0.83				
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	8%	8%	8%				
Lane Group Flow (vph)	0	0	0	0	1698	0	0	0	0	0	1061	0				
Turn Type				Split												
Protected Phases		3.4	3.4							1.2			1	2	3	4
Permitted Phases																
Detector Phases				3.4	3.4					1.2						
Minimum Initial (s)													11.0	18.0	8.0	8.0
Minimum Split (s)													26.0	26.0	25.0	26.0
Total Split (s)	0.0	0.0	0.0	67.0	67.0	0.0	0.0	0.0	0.0	0.0	53.0	0.0	27.0	26.0	41.0	26.0
Total Split (%)	0.0%	0.0%	0.0%	55.8%	55.8%	0.0%	0.0%	0.0%	0.0%	0.0%	44.2%	0.0%	23%	22%	34%	22%
Yellow Time (s)													4.0	4.0	3.0	3.0
All-Red Time (s)													2.0	2.0	2.0	2.0
Lead/Lag													Lead	Lag	Lead	Lag
Lead-Lag Optimize?													Yes	Yes	Yes	Yes
Recall Mode													Max	C-Max	None	None
v/c Ratio					1.06						0.64					
Control Delay					47.6						28.3					
Queue Delay					118.5						0.5					
Total Delay					166.0						28.8					
Queue Length 50th (ft)					-762						246					
Queue Length 95th (ft)					m#813						189					
Internal Link Dist (ft)		421			236			303			336					
Turn Bay Length (ft)																
Base Capacity (vph)					1609						1647					
Starvation Cap Reductn					329						209					
Spillback Cap Reductn					41						90					
Storage Cap Reductn					0						0					
Reduced v/c Ratio					1.33						0.74					

**Intersection Summary**

Area Type: CBD

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 125

Control Type: Actuated-Coordinated

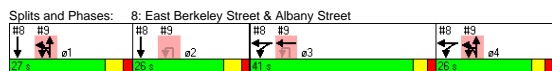
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



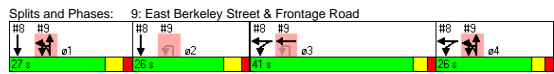
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑						↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)					4.0						4.0	
Lane Util. Factor					0.95						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.94	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					3044						4033	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					3044						4033	
Volume (vph)	0	0	0	215	1330	0	0	0	0	0	545	335
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.92	0.92	0.92	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	236	1462	0	0	0	0	0	657	404
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1687	0	0	0	0	0	1061	0
Confl. Peds. (#/hr)											7	
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	8%	8%	8%
Turn Type				Split								
Protected Phases				3.4	3.4						1.2	
Permitted Phases												
Actuated Green, G (s)					62.0						47.0	
Effective Green, g (s)					63.0						49.0	
Actuated g/C Ratio					0.52						0.41	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1598						1647	
v/s Ratio Prot					c0.55						c0.26	
v/s Ratio Perm												
v/c Ratio					1.06						0.64	
Uniform Delay, d1					28.5						28.5	
Progression Factor					0.54						0.92	
Incremental Delay, d2					30.3						1.8	
Delay (s)					45.8						28.1	
Level of Service					D						C	
Approach Delay (s)		0.0			45.8			0.0			28.1	
Approach LOS		A			D			A			C	

**Intersection Summary**

HCM Average Control Delay	39.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø4			
Lane Configurations																		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900						
Storage Length (ft)	0	0	0	0	200	0	0	0	0	0	0	0						
Storage Lanes	0	0	0	0	2	1	0	0	0	0	0	0						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0						
Leading Detector (ft)					50		50		50									
Trailing Detector (ft)					0		0		0									
Turning Speed (mph)	15		9	15		9	9	15		9	15		9					
Right Turn on Red		Yes			No		Yes		No			Yes						
Link Speed (mph)		30			30			30				30						
Link Distance (ft)		316			383			366				432						
Travel Time (s)		7.2			8.7			8.3				9.8						
Volume (vph)	0	0	0	0	990	185	140	555	730	220	0	0	0	0	0			
Confl. Peds. (#/hr)					9		4											
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.92	0.92	0.92						
Heavy Vehicles (%)	2%	2%	2%	7%	7%	2%	9%	9%	9%	2%	2%	2%						
Lane Group Flow (vph)	0	0	0	0	1277	0	0	755	1069	0	0	0	0	0	0			
Turn Type	custom Split																	
Protected Phases				3			1.4			1.4			1.4			1	2	4
Permitted Phases	2 3																	
Detector Phases	3 1.4 1.4 1.4																	
Minimum Initial (s)	8.0																	
Minimum Split (s)	25.0																	
Total Split (s)	0.0	0.0	0.0	0.0	41.0	0.0	53.0	53.0	53.0	0.0	0.0	0.0	0.0	23.0	22.0	22.0		
Total Split (%)	0.0%	0.0%	0.0%	0.0%	34.2%	0.0%	44.2%	44.2%	44.2%	0.0%	0.0%	0.0%	0.0%	23%	22%	22%		
Yellow Time (s)	3.0																	
All-Red Time (s)	2.0																	
Lead/Lag	Lead																	
Lead-Lag Optimize?	Yes																	
Recall Mode	None																	
w/c Ratio	0.98																	
Control Delay	61.5																	
Queue Delay	3.3																	
Total Delay	64.8																	
Queue Length 50th (ft)	358																	
Queue Length 95th (ft)	#464																	
Internal Link Dist (ft)	236			303			#684			#590			286			352		
Turn Bay Length (ft)																		
Base Capacity (vph)	1306																	
Starvation Cap Reductn	0																	
Spillback Cap Reductn	23																	
Storage Cap Reductn	0																	
Reduced w/c Ratio	1.00																	

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:, Start of Green  
 Natural Cycle: 125  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0			4.0			4.0		
Lane Util. Factor				0.91			0.91			0.91		
Frpb, ped/bikes				0.99			1.00			1.00		
Flpb, ped/bikes				1.00			1.00			1.00		
Fit				0.98			1.00			0.97		
Fit Protected				1.00			0.95			1.00		
Satd. Flow (prot)				4237			1374			2756		
Fit Permitted				1.00			0.95			1.00		
Satd. Flow (perm)				4237			1374			2756		
Volume (vph)	0	0	0	0	990	185	140	555	730	220	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1076	201	152	617	811	244	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	234	1	0	0	0
Lane Group Flow (vph)	0	0	0	0	1277	0	0	521	1068	0	0	0
Confl. Peds. (#/hr)	9											
Heavy Vehicles (%)	2%	2%	2%	7%	7%	2%	9%	9%	9%	2%	2%	2%
Turn Type	custom Split											
Protected Phases				3			1.4			1.4		
Permitted Phases	2 3											
Actuated Green, G (s)				36.0			47.0			47.0		
Effective Green, g (s)				37.0			49.0			49.0		
Actuated g/C Ratio				0.31			0.41			0.41		
Clearance Time (s)	5.0											
Vehicle Extension (s)	2.0											
Lane Grp Cap (vph)				1306			561			1125		
v/s Ratio Prot				c0.30			0.38			c0.39		
v/s Ratio Perm												
w/c Ratio				0.98			0.93			0.95		
Uniform Delay, d1				41.1			33.8			34.3		
Progression Factor	1.00											
Incremental Delay, d2				19.5			21.5			15.8		
Delay (s)				60.6			55.4			50.2		
Level of Service				E			E			D		
Approach Delay (s)	0.0			60.6			52.3			0.0		
Approach LOS	A			E			D			A		

**Intersection Summary**  
 HCM Average Control Delay 55.7 HCM Level of Service E  
 HCM Volume to Capacity ratio 0.96  
 Actuated Cycle Length (s) 120.0 Sum of lost time (s) 34.0  
 Intersection Capacity Utilization 67.8% ICU Level of Service C  
 Analysis Period (min) 15  
 c Critical Lane Group

Lanes, Volumes, Timings

12: Traveler Street & Washington Street

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50	
Trailing Detector (ft)	0	0			0	
Turning Speed (mph)	15	9		9	15	
Right Turn on Red	Yes		Yes			
Link Speed (mph)	25		25			30
Link Distance (ft)	439		423			302
Travel Time (s)	12.0		11.5			6.9
Volume (vph)	0	165	450	0	0	20
Peak Hour Factor	0.71	0.71	0.97	0.97	0.59	0.59
Heavy Vehicles (%)	0%	12%	13%	0%	0%	100%
Lane Group Flow (vph)	0	232	464	0	0	34
Turn Type	custom					
Protected Phases	5		1			1
Permitted Phases	1					
Detector Phases	5		1			1
Minimum Initial (s)	8.0		10.0			10.0
Minimum Split (s)		28.0	28.0			28.0
Total Split (s)	0.0	36.0	44.0	0.0	0.0	44.0
Total Split (%)	0.0%	45.0%	55.0%	0.0%	0.0%	55.0%
Yellow Time (s)	3.0		3.0			3.0
All-Red Time (s)	1.0		1.0			1.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	C-Max			C-Max	
v/c Ratio	0.18	0.14			0.05	
Control Delay	0.2	1.9			1.4	
Queue Delay	0.0	0.0			0.0	
Total Delay	0.2	1.9			1.4	
Queue Length 50th (ft)	0	13			1	
Queue Length 95th (ft)	0	19			1	
Internal Link Dist (ft)	359		343			222
Turn Bay Length (ft)						
Base Capacity (vph)	1321		3305			684
Starvation Cap Reductn	0	0			0	
Spillback Cap Reductn	0	0			0	
Storage Cap Reductn	0	0			0	
Reduced v/c Ratio	0.18	0.14			0.05	

Intersection Summary

Area Type: CBD

Cycle Length: 80

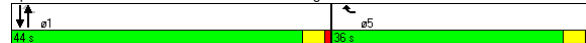
Actuated Cycle Length: 80

Offset: 6 (8%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 12: Traveler Street & Washington Street



HCM Signalized Intersection Capacity Analysis

12: Traveler Street & Washington Street

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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor	1.00	0.91				1.00
Fr	0.86	1.00				1.00
Flt Protected	1.00	1.00				1.00
Satd. Flow (prot)	1321	4131				855
Flt Permitted	1.00	1.00				1.00
Satd. Flow (perm)	1321	4131				855
Volume (vph)	0	165	450	0	0	20
Peak-hour factor, PHF	0.71	0.71	0.97	0.97	0.59	0.59
Adj. Flow (vph)	0	232	464	0	0	34
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	232	464	0	0	34
Heavy Vehicles (%)	0%	12%	13%	0%	0%	100%
Turn Type	custom					
Protected Phases	5		1			1
Permitted Phases	1					
Actuated Green, G (s)	72.0		64.0			64.0
Effective Green, g (s)	72.0		64.0			64.0
Actuated g/C Ratio	0.90		0.80			0.80
Clearance Time (s)	4.0		4.0			4.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1321		3305			684
v/s Ratio Prot	c0.02		0.11			0.04
v/s Ratio Perm	0.16					
v/c Ratio	0.18	0.14				0.05
Uniform Delay, d1	0.5	1.8				1.7
Progression Factor	1.00	1.00				0.70
Incremental Delay, d2	0.0	0.1				0.1
Delay (s)	0.5	1.9				1.3
Level of Service	A	A				A
Approach Delay (s)	0.5		1.9			1.3
Approach LOS	A		A			A

Intersection Summary

HCM Average Control Delay 1.4 HCM Level of Service A

HCM Volume to Capacity ratio 0.18

Actuated Cycle Length (s) 80.0 Sum of lost time (s) 0.0

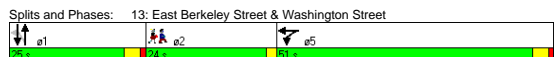
Intersection Capacity Utilization 27.7% ICU Level of Service A

Analysis Period (min) 15

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2	
Lane Configurations														
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0	0	0	0	0	0	80	0	0	0	0	0		
Storage Lanes	0	0	0	0	0	0	1	0	0	0	0	0		
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Leading Detector (ft)				50	50		50	50				50		
Trailing Detector (ft)				0	0		0	0				0		
Turning Speed (mph)	15		9	15		9	15		9	15		9		
Right Turn on Red			Yes			Yes			Yes			Yes		
Link Speed (mph)		30			25			25		30			30	
Link Distance (ft)		313			505			319		423			423	
Travel Time (s)		7.1			13.8			8.7		9.6			9.6	
Volume (vph)	0	0	0	105	1025	85	80	365	0	0	20	0		
Confl. Peds. (#/hr)	145		179	163		129	179		163	129		145		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	100%	2%		
Lane Group Flow (vph)	0	0	0	0	1320	0	87	397	0	0	22	0		
Turn Type	Split			Perm			1			1			2	
Protected Phases	5			5			1			1			2	
Permitted Phases							1			1				
Detector Phases	5			5			1			1				
Minimum Initial (s)	8.0			8.0			20.0			20.0			2.0	
Minimum Split (s)	25.0			25.0			24.0			24.0			24.0	
Total Split (s)	0.0	0.0	0.0	51.0	51.0	0.0	25.0	25.0	0.0	0.0	25.0	0.0	24.0	
Total Split (%)	0.0%	0.0%	0.0%	51.0%	51.0%	0.0%	25.0%	25.0%	0.0%	0.0%	25.0%	0.0%	24%	
Yellow Time (s)	3.0			3.0			3.0			3.0			2.0	
All-Red Time (s)	1.0			1.0			1.0			1.0			0.0	
Lead/Lag				Lead			Lead			Lead			Lag	
Lead-Lag Optimize?				None			C-Min			C-Min			None	
v/c Ratio	None			0.81			0.26			0.65			0.07	
Control Delay	32.2			31.1			37.5			28.6			28.6	
Queue Delay	0.0			0.0			0.0			0.0			0.0	
Total Delay	32.2			31.1			37.5			28.6			28.6	
Queue Length 50th (ft)	271			42			225			10				
Queue Length 95th (ft)	286			95			#448			32				
Internal Link Dist (ft)	233			425			239			343				
Turn Bay Length (ft)				80										
Base Capacity (vph)	2101			335			609			311				
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	0.63			0.26			0.65			0.07				

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 95 (95%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor				0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes				0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes				1.00	0.74	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr				0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fl				1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)				4449	1178	1676	855	855	855	855	855	855
Fit Permitted				1.00	0.74	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)				4449	921	1676	855	855	855	855	855	855
Volume (vph)	0	0	0	105	1025	85	80	365	0	0	20	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	114	1114	92	87	397	0	0	22	0
RTOR Reduction (vph)	0	0	0	10	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1310	0	87	397	0	0	22	0
Confl. Peds. (#/hr)	145	179	163	129	179	163	129	179	163	129	145	145
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	100%	2%
Turn Type	Split			Perm			1			1		
Protected Phases	5			5			1			1		
Permitted Phases							1			1		
Actuated Green, G (s)	36.5			35.9			35.9			35.9		
Effective Green, g (s)	36.5			35.9			35.9			35.9		
Actuated g/C Ratio	0.36			0.36			0.36			0.36		
Clearance Time (s)	4.0			4.0			4.0			4.0		
Vehicle Extension (s)	3.0			3.0			3.0			3.0		
Lane Grp Cap (vph)	1624			331			602			307		
v/s Ratio Prot	c0.29			c0.24			c0.24			0.03		
v/s Ratio Perm				0.09								
v/c Ratio	0.81			0.26			0.66			0.07		
Uniform Delay, d1	28.6			22.7			26.9			21.1		
Progression Factor	1.00			1.00			1.00			1.00		
Incremental Delay, d2	3.0			1.9			5.6			0.5		
Delay (s)	31.6			24.6			32.5			21.5		
Level of Service	C			C			C			C		
Approach Delay (s)	0.0			31.6			31.1			21.5		
Approach LOS	A			C			C			C		

**Intersection Summary**  
 HCM Average Control Delay: 31.3 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.73  
 Actuated Cycle Length (s): 100.0 Sum of lost time (s): 27.6  
 Intersection Capacity Utilization: 57.2% ICU Level of Service: B  
 Analysis Period (min): 15  
 c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
 10: William E Mullins Way & Harrison Avenue

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Free		Free		Free		Free	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	10	1	30	1	0	5	195	95	5	2	285	25
Peak Hour Factor	0.60	0.60	0.60	0.35	0.35	0.35	0.84	0.84	0.84	0.88	0.88	0.88
Hourly flow rate (vph)	17	2	50	3	0	14	232	113	6	2	324	28
Pedestrians	34		14		5		1		1		1	
Lane Width (ft)	12.0		12.0		12.0		12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0		4.0		4.0		4.0	
Percent Blockage	3		1		0		0		0		0	
Right turn flare (veh)	Raised		Raised									
Median type	None		None		None		None		None		None	
Median storage (veh)	0		0									
Upstream signal (ft)					364		356					
pX, platoon unblocked	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
vC, conflicting volume	913	974	215	817	985	75	386			133		
vC1, stage 1 conf vol	377	377		594	594							
vC2, stage 2 conf vol	536	597		222	391							
vCu, unblocked vol	898	960	191	801	972	75	365			133		
tC, single (s)	7.8	6.8	7.2	7.8	6.8	7.2	4.2			4.3		
tC, 2 stage (s)	6.8	5.8		6.8	5.8							
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	92	99	93	99	100	98	79			100		
cM capacity (veh/h)	203	205	747	192	177	923	1114			1370		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>						
Volume Total	68	17	289	62	164	190						
Volume Left	17	3	232	0	2	0						
Volume Right	50	14	0	6	0	28						
cSH	435	565	1114	1700	1370	1700						
Volume to Capacity	0.16	0.03	0.21	0.04	0.00	0.11						
Queue Length 95th (ft)	14	2	20	0	0	0						
Control Delay (s)	14.8	11.6	7.7	0.0	0.1	0.0						
Lane LOS	B	B	A		A							
Approach Delay (s)	14.8	11.6	6.3	0.1								
Approach LOS	B	B										
<b>Intersection Summary</b>												
Average Delay	4.4											
Intersection Capacity Utilization	40.7%		ICU Level of Service		A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
 11: Boston Herald Back & Albany Street

10995.00 :: Boston Herald Redevelopment  
 2016 No-Build Conditions :: Weekday Morning Peak

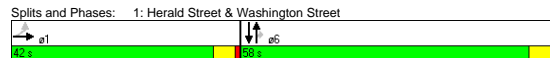


Movement	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR			
Lane Configurations	↔		↔		↔		↔		↔		↔			
Sign Control	Stop		Free		Free		Free		Stop		Stop			
Grade	0%		0%		0%		0%		0%		0%			
Volume (veh/h)	0	3	15	0	0	0	565	1740	20	0	0			
Peak Hour Factor	0.65	0.65	0.65	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92			
Hourly flow rate (vph)	0	5	23	0	0	0	595	1832	21	0	0			
Pedestrians														
Lane Width (ft)														
Walking Speed (ft/s)														
Percent Blockage														
Right turn flare (veh)														
Median type	None						None							
Median storage (veh)														
Upstream signal (ft)							557		158					
pX, platoon unblocked	0.78	0.78	0.78	0.78						0.78				
vC, conflicting volume	3032	3032	621	1853				0		3042	0			
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	3040	3040	0	1535				0		3054	0			
tC, single (s)	8.9	7.9	8.3	4.1				4.3		6.5	6.9			
tC, 2 stage (s)														
tF (s)	4.2	4.7	4.0	2.2				2.3		4.0	3.3			
p0 queue free %	100	0	97	100				62		100	100			
cM capacity (veh/h)	1	2	707	336				1572		6	1084			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>SB 1</b>	<b>SB 2</b>	<b>SB 3</b>										
Volume Total	28	1053	916	479										
Volume Left	0	595	0	0										
Volume Right	23	0	0	21										
cSH	12	1572	1700	1700										
Volume to Capacity	2.41	0.38	0.54	0.28										
Queue Length 95th (ft)	110	45	0	0										
Control Delay (s)	1297.4	6.9	0.0	0.0										
Lane LOS	F	A												
Approach Delay (s)	1297.4	2.9												
Approach LOS	F													
<b>Intersection Summary</b>														
Average Delay	17.4													
Intersection Capacity Utilization	60.6%		ICU Level of Service		B									
Analysis Period (min)	15													



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕↕↕			↔↔↔			↕↕↕			↕↕↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50						50	50	50	50	
Trailing Detector (ft)	0	0						0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red	No			Yes			Yes			Yes		
Link Speed (mph)	30			30			30			30		
Link Distance (ft)	376			407			347			464		
Travel Time (s)	8.5			9.3			7.9			10.5		
Volume (vph)	85	1415	0	0	0	0	0	555	85	0	20	0
Confl. Peds. (#/hr)	2			23			78			78		
Confl. Bikes (#/hr)	2			23			78			78		
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	100%	100%	100%
Bus Blockages (#/hr)	0	6	6	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1744	0	0	0	0	0	603	92	0	24	0
Turn Type	Perm						Perm					
Protected Phases	1			1			6			6		
Permitted Phases	1			1			6			6		
Detector Phases	1			1			6			6		
Minimum Initial (s)	12.0			12.0			12.0			12.0		
Minimum Split (s)	31.0			31.0			31.0			31.0		
Total Split (s)	42.0			42.0			0.0			58.0		
Total Split (%)	42.0%			42.0%			0.0%			58.0%		
Yellow Time (s)	4.0			4.0			4.0			4.0		
All-Red Time (s)	1.0			1.0			1.0			1.0		
Lead/Lag												
Recall Mode	Max	Max					C-Max	C-Max	C-Max			
v/c Ratio	1.01			1.01			0.36			0.14		
Control Delay	56.8			56.8			13.9			11.9		
Queue Delay	45.4			45.4			0.0			0.0		
Total Delay	102.2			102.2			13.9			11.4		
Queue Length 50th (ft)	-413			-413			109			27		
Queue Length 95th (ft)	#485			#485			147			53		
Internal Link Dist (ft)	296			327			267			384		
Turn Bay Length (ft)												
Base Capacity (vph)	1720			1720			1671			653		
Starvation Cap Reductn	0			0			0			0		
Spillback Cap Reductn	175			175			0			73		
Storage Cap Reductn	0			0			0			0		
Reduced v/c Ratio	1.13			1.13			0.36			0.16		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 60 (60%), Referenced to phase 6:NBSB, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕↕↕			↔↔↔			↕↕↕			↕↕↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0			4.0			4.0			4.0		
Lane Util. Factor	0.91			0.95			1.00			1.00		
Frpb, ped/bikes	1.00			1.00			0.87			1.00		
Flpb, ped/bikes	1.00			1.00			1.00			1.00		
Frt	1.00			1.00			0.85			1.00		
Flt Protected	1.00			1.00			1.00			1.00		
Satd. Flow (prot)	4527			3094			1208			855		
Flt Permitted	1.00			1.00			1.00			1.00		
Satd. Flow (perm)	4527			3094			1208			855		
Volume (vph)	85	1415	0	0	0	0	0	555	85	0	20	0
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.85	0.85	0.85
Adj. Flow (vph)	99	1645	0	0	0	0	0	603	92	0	24	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	1744	0	0	0	0	0	603	91	0	24	0
Confl. Peds. (#/hr)	2			23			78			78		
Confl. Bikes (#/hr)	2			23			78			78		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	100%	100%	100%
Bus Blockages (#/hr)	0	6	6	0	0	0	0	0	0	0	0	0
Turn Type	Perm						Perm					
Protected Phases	1			1			6			6		
Permitted Phases	1			1			6			6		
Actuated Green, G (s)	37.0			37.0			53.0			53.0		
Effective Green, g (s)	38.0			38.0			54.0			54.0		
Actuated g/C Ratio	0.38			0.38			0.54			0.54		
Clearance Time (s)	5.0			5.0			5.0			5.0		
Vehicle Extension (s)	3.0			3.0			3.0			3.0		
Lane Grp Cap (vph)	1720			1720			1671			652		
v/s Ratio Prot	c0.19			c0.19			0.08			0.03		
v/s Ratio Perm	0.39			0.39			0.36			0.14		
v/c Ratio	1.01			1.01			0.36			0.14		
Uniform Delay, d1	31.0			31.0			13.1			11.4		
Progression Factor	1.00			1.00			1.00			1.00		
Incremental Delay, d2	25.2			25.2			0.6			0.4		
Delay (s)	56.2			56.2			13.7			11.1		
Level of Service	E			E			B			B		
Approach Delay (s)	56.2			0.0			13.5			11.1		
Approach LOS	E			A			B			B		

**Intersection Summary**  
 HCM Average Control Delay: 43.7 HCM Level of Service: D  
 HCM Volume to Capacity ratio: 0.63  
 Actuated Cycle Length (s): 100.0 Sum of lost time (s): 8.0  
 Intersection Capacity Utilization: 56.0% ICU Level of Service: B  
 Analysis Period (min): 15  
 Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50									50	50	50	
Trailing Detector (ft)	0									0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes		No		Yes	
Link Speed (mph)	30			30			30			30		30	
Link Distance (ft)	407			540			356			340		340	
Travel Time (s)	9.3			12.3			8.1			7.7		7.7	
Volume (vph)	0	1260	240	0	0	0	0	0	165	175	225	0	
Confl. Bikes (#/hr)									1				
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.69	0.69	0.69	0.81	0.81	0.81	
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	3%	3%	3%	
Parking (#/hr)									2				
Lane Group Flow (vph)	0	1705	0	0	0	0	0	0	239	216	278	0	
Turn Type	custom custom												
Protected Phases	1									3	3	4	2
Permitted Phases									4	4			
Detector Phases	1								4	3	3	4	
Minimum Initial (s)	1.0								8.0	8.0		4.0	
Minimum Split (s)	19.0								13.0	13.0		19.0	
Total Split (s)	0.0	35.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	13.0	26.0	0.0	19.0
Total Split (%)	0.0%	43.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.3%	16.3%	32.5%	0.0%	24%
Yellow Time (s)	4.0								4.0	4.0		4.0	
All-Red Time (s)	1.0								1.0	1.0		1.0	
Lead/Lag	Lag								Lag	Lead		Lead	
Lead-Lag Optimize?	Yes								Yes	Yes		Yes	
Recall Mode	Max								Max	Max		Max	
v/c Ratio	0.96								0.29	0.50	0.32		
Control Delay	37.3								0.9	29.1	24.3		
Queue Delay	0.0								0.0	0.0	0.0		
Total Delay	37.3								0.9	29.1	24.3		
Queue Length 50th (ft)	288								0	90	57		
Queue Length 95th (ft)	#384								0	137	80		
Internal Link Dist. (ft)	327			460				276			260		
Turn Bay Length (ft)													
Base Capacity (vph)	1783								828	434	867		
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	0.96								0.29	0.50	0.32		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Natural Cycle: 80  
 Control Type: Semi Act-Uncoord  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0								4.0	4.0	4.0	
Lane Util. Factor	0.91								0.88	1.00	0.95	
Frpb, ped/bikes	1.00								0.99	1.00	1.00	
Flpb, ped/bikes	1.00								1.00	1.00	1.00	
Frt	0.98								0.85	1.00	1.00	
Flt Protected	1.00								1.00	0.95	1.00	
Satd. Flow (prot)	4511								2384	1577	3154	
Flt Permitted	1.00								1.00	0.95	1.00	
Satd. Flow (perm)	4511								2384	1577	3154	
Volume (vph)	0	1260	240	0	0	0	0	0	165	175	225	0
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.69	0.69	0.69	0.81	0.81	0.81
Adj. Flow (vph)	0	1432	273	0	0	0	0	0	239	216	278	0
RTOR Reduction (vph)	0	35	0	0	0	0	0	0	212	0	0	0
Lane Group Flow (vph)	0	1670	0	0	0	0	0	0	27	216	278	0
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	3%	3%	3%
Parking (#/hr)									2			
Turn Type	custom custom											
Protected Phases	1									3	3	4
Permitted Phases									4	4		
Actuated Green, G (s)	30.0								8.0	16.0	21.0	
Effective Green, g (s)	31.0								9.0	18.0	22.0	
Actuated g/C Ratio	0.39								0.11	0.22	0.28	
Clearance Time (s)	5.0								5.0	5.0		
Vehicle Extension (s)	3.0								2.0	2.0		
Lane Grp Cap (vph)	1748								268	434	867	
v/s Ratio Prot	c0.37								c0.06	0.09		
v/s Ratio Perm									0.01	0.08		
v/c Ratio	0.96								0.10	0.50	0.32	
Uniform Delay, d1	23.8								31.9	27.8	23.1	
Progression Factor	1.00								1.00	1.00	1.00	
Incremental Delay, d2	13.3								0.7	4.0	1.0	
Delay (s)	37.1								32.6	31.9	24.0	
Level of Service	D								C	C	C	
Approach Delay (s)	37.1				0.0				32.6		27.5	
Approach LOS	D				A				C		C	

**Intersection Summary**  
 HCM Average Control Delay: 34.7  
 HCM Volume to Capacity ratio: 0.77  
 Actuated Cycle Length (s): 80.0  
 Intersection Capacity Utilization: 60.4%  
 Analysis Period (min): 15  
 HCM Level of Service: C  
 Sum of lost time (s): 27.0  
 ICU Level of Service: B  
 c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50			50	
Trailing Detector (ft)		0			0	
Turning Speed (mph)	15	9	15			9
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	540			158	348	
Travel Time (s)	12.3			3.6	7.9	
Volume (vph)	0	1600	0	0	1605	0
Peak Hour Factor	0.88	0.88	0.92	0.92	0.94	0.94
Lane Group Flow (vph)	0	1818	0	0	1707	0
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Detector Phases	2		1			
Minimum Initial (s)	8.0		8.0			
Minimum Split (s)	23.0		23.0			
Total Split (s)	0.0	50.0	0.0	0.0	50.0	0.0
Total Split (%)	0.0%	50.0%	0.0%	0.0%	50.0%	0.0%
Yellow Time (s)	4.0		4.0			
All-Red Time (s)	1.0		1.0			
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	Max		C-Max			
v/c Ratio	1.22		0.81			
Control Delay	130.6		27.1			
Queue Delay	1.8		0.0			
Total Delay	132.4		27.2			
Queue Length 50th (ft)	-626		332			
Queue Length 95th (ft)	#715		398			
Internal Link Dist (ft)	460		78		268	
Turn Bay Length (ft)						
Base Capacity (vph)	1495		2105			
Starvation Cap Reductn	0		0			
Spillback Cap Reductn	5		9			
Storage Cap Reductn	0		0			
Reduced v/c Ratio	1.22		0.81			

**Intersection Summary**

Area Type: CBD

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 80 (80%), Referenced to phase 1:SBT, Start of Green

Natural Cycle: 110

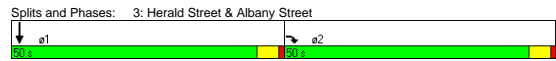
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			
Lane Util. Factor	0.76		0.91			
Frt	0.85		1.00			
Flt Protected	1.00		1.00			
Satd. Flow (prot)	3249		4577			
Flt Permitted	1.00		1.00			
Satd. Flow (perm)	3249		4577			
Volume (vph)	0	1600	0	0	1605	0
Peak-hour factor, PHF	0.88	0.88	0.92	0.92	0.94	0.94
Adj. Flow (vph)	0	1818	0	0	1707	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	1818	0	0	1707	0
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Actuated Green, G (s)	45.0		45.0			
Effective Green, g (s)	46.0		46.0			
Actuated g/C Ratio	0.46		0.46			
Clearance Time (s)	5.0		5.0			
Vehicle Extension (s)	2.0		2.0			
Lane Grp Cap (vph)	1495		2105			
v/s Ratio Prot	c0.56		c0.37			
v/s Ratio Perm						
v/c Ratio	1.22		0.81			
Uniform Delay, d1	27.0		23.3			
Progression Factor	1.00		1.00			
Incremental Delay, d2	103.6		3.5			
Delay (s)	130.6		26.8			
Level of Service	F		C			
Approach Delay (s)	130.6	F	0.0	A	26.8	C
Approach LOS	F		A		C	
<b>Intersection Summary</b>						
HCM Average Control Delay	80.3		HCM Level of Service		F	
HCM Volume to Capacity ratio	1.01					
Actuated Cycle Length (s)	100.0		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	82.6%		ICU Level of Service		E	
Analysis Period (min)	15					
c Critical Lane Group						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations				↔	↔			↔	↔	↔	↔		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50	50		50	50		50	50		50	50		
Trailing Detector (ft)	0	0		0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			No		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		412			513			372			364		
Travel Time (s)		9.4			11.7			8.5			8.3		
Volume (vph)	0	0	0	40	25	30	105	200	165	175	355	15	
Confl. Bikes (#/hr)													6
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.80	0.80	0.80	0.80	0.95	0.95	
Heavy Vehicles (%)	2%	2%	2%	9%	9%	9%	2%	2%	2%	3%	3%	3%	
Lane Group Flow (vph)	0	0	0	45	62	0	0	587	0	184	390	0	
Turn Type				Split		D,P+P			Perm				
Protected Phases				3	3		4	14			1		2
Permitted Phases							1			1			
Detector Phases				3	3		4	14		1	1		
Minimum Initial (s)				7.0	7.0		4.0			7.0	7.0		2.0
Minimum Split (s)				21.0	21.0		7.0			20.0	20.0		21.0
Total Split (s)	0.0	0.0	0.0	27.0	27.0	0.0	7.0	42.0	0.0	35.0	35.0	0.0	21.0
Total Split (%)	0.0%	0.0%	0.0%	30.0%	30.0%	0.0%	7.8%	46.7%	0.0%	38.9%	38.9%	0.0%	23%
Yellow Time (s)				3.0	3.0		3.0			3.0	3.0		3.0
All-Red Time (s)				2.0	2.0		0.0			1.0	1.0		1.0
Lead/Lag				Lead	Lead		Lag			Lead	Lead		Lag
Lead-Lag Optimize?				Yes	Yes		Yes			Yes	Yes		Yes
Recall Mode				Max	Max		Max			C-Max	C-Max		None
v/c Ratio				0.08	0.11			0.70		0.99	0.69		
Control Delay				22.5	13.9			28.7		96.6	32.8		
Queue Delay				0.0	0.0			0.0		0.0	0.1		
Total Delay				22.5	13.9			28.7		96.6	32.9		
Queue Length 50th (ft)				13	8			154		103	188		
Queue Length 95th (ft)				46	42			m176		#239	293		
Internal Link Dist (ft)			332			433			292			284	
Turn Bay Length (ft)													
Base Capacity (vph)				589	590			836		186	568		
Starvation Cap Reductn				0	0			0		0	0		
Spillback Cap Reductn				0	0			0		0	7		
Storage Cap Reductn				0	0			0		0	0		
Reduced v/c Ratio				0.08	0.11			0.70		0.99	0.70		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 18 (20%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

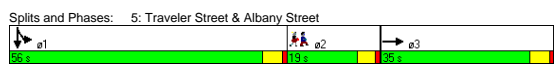


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔	↔			↔	↔	↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		0.95	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		0.95	1.00		0.95	1.00		0.95	0.99	
Flt Protected				0.95	1.00		0.99	1.00		0.95	1.00	
Satd. Flow (prot)	1490	1440		2984	1577		1648	1577		1648	1577	
Flt Permitted	0.95	1.00		0.61	0.31		1.00	1.00		1.00	1.00	
Satd. Flow (perm)	1490	1440		1837	512		1648	1577		1648	1577	
Volume (vph)	0	0	0	40	25	30	105	200	165	175	355	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.88	0.88	0.80	0.80	0.80	0.80	0.95	0.95
Adj. Flow (vph)	0	0	0	45	28	34	131	250	206	184	374	16
RTOR Reduction (vph)	0	0	0	0	21	0	0	84	0	0	0	0
Lane Group Flow (vph)	0	0	0	45	41	0	0	503	0	184	390	0
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	2%	2%	2%	9%	9%	9%	2%	2%	2%	3%	3%	3%
Turn Type				Split		D,P+P			Perm			
Protected Phases				3	3		4	14			1	
Permitted Phases							1			1		
Actuated Green, G (s)				34.6	34.6			32.6		28.6	28.6	
Effective Green, g (s)				35.6	35.6			31.6		28.6	28.6	
Actuated g/C Ratio				0.40	0.40			0.35		0.32	0.32	
Clearance Time (s)				5.0	5.0			1.0		4.0	4.0	
Vehicle Extension (s)				2.0	2.0					2.0	2.0	
Lane Grp Cap (vph)				589	570			683		163	524	
v/s Ratio Prot				c0.03	0.03			c0.02		0.24	0.24	
v/s Ratio Perm								0.23		c0.36	c0.36	
v/c Ratio				0.08	0.07			0.74		1.13	0.74	
Uniform Delay, d1				17.0	16.9			25.6		30.7	27.4	
Progression Factor				1.00	1.00			1.49		1.00	1.00	
Incremental Delay, d2				0.3	0.2			4.1		109.3	9.3	
Delay (s)				17.2	17.2			42.2		140.0	36.7	
Level of Service				B	B			D		F	D	
Approach Delay (s)	0.0				17.2			42.2			69.8	
Approach LOS	A				B			D			E	

**Intersection Summary**  
 HCM Average Control Delay: 52.6 HCM Level of Service: D  
 HCM Volume to Capacity ratio: 0.55  
 Actuated Cycle Length (s): 90.0 Sum of lost time (s): 22.8  
 Intersection Capacity Utilization: 53.0% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50									50	50		
Trailing Detector (ft)	0									0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes	Yes			No	
Link Speed (mph)	30			30			30			30			
Link Distance (ft)	513			322			416			557			
Travel Time (s)	11.7			7.3			9.5			12.7			
Volume (vph)	0	265	90	0	0	0	0	0	0	1145	1010	100	
Confl. Bikes (#/hr)		4											
Peak Hour Factor	0.72	0.72	0.72	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.98	0.98	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%	
Lane Group Flow (vph)	0	493	0	0	0	0	0	0	0	910	1391	0	
Turn Type										Split			
Protected Phases	3									1	1		2
Permitted Phases													
Detector Phases	3									1	1		
Minimum Initial (s)	8.0									10.0	10.0		4.0
Minimum Split (s)	24.0									24.0	24.0		19.0
Total Split (s)	0.0	35.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.0	56.0	0.0	19.0
Total Split (%)	0.0%	31.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.9%	50.9%	0.0%	17%
Yellow Time (s)	4.0									4.0	4.0		4.0
All-Red Time (s)	1.0									1.0	1.0		1.0
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?										Yes	Yes		Yes
Recall Mode	None									C-Max	C-Max		None
v/c Ratio	0.80									0.79	0.67		
Control Delay	48.6									12.9	13.6		
Queue Delay	0.0									0.6	0.1		
Total Delay	48.6									13.5	13.7		
Queue Length 50th (ft)	162									145	223		
Queue Length 95th (ft)	154									#762	#647		
Internal Link Dist (ft)	433			242			336			477			
Turn Bay Length (ft)													
Base Capacity (vph)	891									1151	2088		
Starvation Cap Reductn	0									58	0		
Spillback Cap Reductn	4									34	49		
Storage Cap Reductn	0									0	0		
Reduced v/c Ratio	0.56									0.83	0.68		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 80 (73%), Referenced to phase 1:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0									4.0	4.0	
Lane Util. Factor	0.95									0.91	0.91	
Frpb, ped/bikes	1.00									1.00	1.00	
Flpb, ped/bikes	1.00									1.00	1.00	
Frt	0.96									1.00	0.99	
Flt Protected	1.00									0.95	0.99	
Satd. Flow (prot)	3051									1435	2961	
Flt Permitted	1.00									0.95	0.99	
Satd. Flow (perm)	3051									1435	2961	
Volume (vph)	0	265	90	0	0	0	0	0	0	1145	1010	100
Peak-hour factor, PHF	0.72	0.72	0.72	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Adj. Flow (vph)	0	368	125	0	0	0	0	0	0	1168	1031	102
RTOR Reduction (vph)	0	35	0	0	0	0	0	0	0	161	11	0
Lane Group Flow (vph)	0	458	0	0	0	0	0	0	0	749	1380	0
Confl. Bikes (#/hr)		4										
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type										Split		
Protected Phases	3									1	1	
Permitted Phases												
Actuated Green, G (s)	20.0									72.2	72.2	
Effective Green, g (s)	21.0									73.2	73.2	
Actuated g/C Ratio	0.19									0.67	0.67	
Clearance Time (s)	5.0									5.0	5.0	
Vehicle Extension (s)	2.0									2.0	2.0	
Lane Grp Cap (vph)	582									955	1970	
v/s Ratio Prot	c0.15									c0.52	0.47	
v/s Ratio Perm												
v/c Ratio	0.79									0.78	0.70	
Uniform Delay, d1	42.4									12.9	11.5	
Progression Factor	1.00									1.00	1.00	
Incremental Delay, d2	6.4									6.4	2.1	
Delay (s)	48.8									19.3	13.6	
Level of Service	D									B	B	
Approach Delay (s)	48.8			0.0			0.0			15.9		
Approach LOS	D			A			A			B		

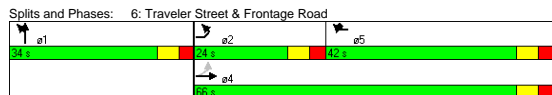
**Intersection Summary**  
 HCM Average Control Delay: 21.7 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.78  
 Actuated Cycle Length (s): 110.0 Sum of lost time (s): 15.8  
 Intersection Capacity Utilization: 65.7% ICU Level of Service: C  
 Analysis Period (min): 15  
 c Critical Lane Group

Lanes, Volumes, Timings  
6: Traveler Street & Frontage Road

10995.00 :: Boston Herald Redevelopment  
2016 No-Build Conditions :: Weekday Evening Peak

Lane Group	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0
Turning Speed (mph)	15	15		9	9	15		9
Right Turn on Red	No			Yes				No
Link Speed (mph)			30				30	
Link Distance (ft)			322				432	
Travel Time (s)			7.3				9.8	
Volume (vph)	70	295	1045	255	495	340	765	60
Confl. Peds. (#/hr)			3	3				
Peak Hour Factor	0.98	0.98	0.98	0.91	0.91	0.87	0.87	0.87
Heavy Vehicles (%)	3%	3%	3%	3%	3%	5%	5%	5%
Lane Group Flow (vph)	0	372	1066	280	544	391	948	0
Turn Type	Prot	Perm		custom	custom	Split		
Protected Phases	2	4	5	5	1	1		
Permitted Phases		4						
Detector Phases	2	4	4	5	5	1	1	
Minimum Initial (s)	10.0	10.0	10.0	8.0	8.0	10.0	10.0	
Minimum Split (s)	24.0	34.0	34.0	34.0	34.0	34.0	34.0	
Total Split (s)	24.0	66.0	66.0	42.0	42.0	34.0	34.0	0.0
Total Split (%)	24.0%	66.0%	66.0%	42.0%	42.0%	34.0%	34.0%	0.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead			Lag	Lag			
Lead-Lag Optimize?	Yes			Yes	Yes			
Recall Mode	Max	Max	Max	Max	Max	Max	Max	
v/c Ratio	0.38	0.55	0.59	0.80	0.43	0.72		
Control Delay	10.8	12.2	31.1	25.1	30.0	34.9		
Queue Delay	2.7	6.6	0.0	0.0	0.0	0.0		
Total Delay	13.6	18.8	31.1	25.1	30.0	34.9		
Queue Length 50th (ft)	108	188	160	177	103	197		
Queue Length 95th (ft)	166	242	261	350	140	235		
Internal Link Dist (ft)			242			352		
Turn Bay Length (ft)								
Base Capacity (vph)	978	1955	472	684	900	1319		
Starvation Cap Reductn	479	832	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0		
Reduced v/c Ratio	0.75	0.95	0.59	0.80	0.43	0.72		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



HCM Signalized Intersection Capacity Analysis  
6: Traveler Street & Frontage Road

10995.00 :: Boston Herald Redevelopment  
2016 No-Build Conditions :: Weekday Evening Peak

Movement	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.97	0.91		
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	1.00	0.85	0.85	1.00	0.99		
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1577	3154	1242	1411	3001	4397		
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1577	3154	1242	1411	3001	4397		
Volume (vph)	70	295	1045	255	495	340	765	60
Peak-hour factor, PHF	0.98	0.98	0.98	0.91	0.91	0.87	0.87	0.87
Adj. Flow (vph)	71	301	1066	280	544	391	879	69
RTOR Reduction (vph)	0	0	0	0	148	0	0	0
Lane Group Flow (vph)	0	372	1066	280	396	391	948	0
Confl. Peds. (#/hr)			3	3				
Heavy Vehicles (%)	3%	3%	3%	3%	3%	5%	5%	5%
Turn Type	Prot	Perm		custom	custom	Split		
Protected Phases	2	4	5	5	1	1		
Permitted Phases		4						
Actuated Green, G (s)	59.0	59.0	35.0	35.0	27.0	27.0		
Effective Green, g (s)	62.0	62.0	38.0	38.0	30.0	30.0		
Actuated g/C Ratio	0.62	0.62	0.38	0.38	0.30	0.30		
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		
Lane Grp Cap (vph)	978	1955	472	536	900	1319		
v/s Ratio Prot			c0.34	0.23	c0.28	0.13	c0.22	
v/s Ratio Perm		0.24						
v/c Ratio	0.38	0.55	0.59	0.74	0.43	0.72		
Uniform Delay, d1	9.4	10.9	24.8	26.7	28.2	31.2		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	1.1	1.1	5.4	8.8	1.5	3.4		
Delay (s)	10.6	12.0	30.2	35.5	29.7	34.6		
Level of Service	B	B	C	D	C	C		
Approach Delay (s)		11.6				33.2		
Approach LOS		B				C		

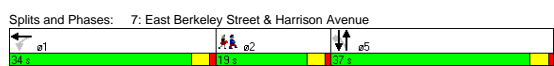
**Intersection Summary**  
 HCM Average Control Delay: 24.7, HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.70  
 Actuated Cycle Length (s): 100.0, Sum of lost time (s): 12.0  
 Intersection Capacity Utilization: 79.6%, ICU Level of Service: D  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations				↔↔↔	↔↔↔	↔↔↔		↔	↔	↔	↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				50	50			50	50		50	50	
Trailing Detector (ft)				0	0			0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		500			501			284			372		
Travel Time (s)		11.4			11.4			6.5			8.5		
Volume (vph)	0	0	0	215	785	160	75	310	0	0	290	125	
Confl. Bikes (#/hr)					3			1			5		
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.85	0.85	0.85	0.90	0.90	0.90	
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	1%	1%	1%	1%	1%	1%	
Bus Blockages (#/hr)	0	0	0	0	11	11	0	0	0	0	0	0	
Parking (#/hr)							1	1					
Lane Group Flow (vph)	0	0	0	0	1247	0	0	453	0	0	322	139	
Turn Type			Perm		Perm			Perm			Perm		
Protected Phases				1			5			5		2	
Permitted Phases				1			5			5			
Detector Phases				1	1		5	5		5	5		
Minimum Initial (s)				5.0	5.0		5.0	5.0		5.0	5.0	4.0	
Minimum Split (s)				22.0	22.0		20.0	20.0		20.0	20.0	19.0	
Total Split (s)	0.0	0.0	0.0	34.0	34.0	0.0	37.0	37.0	0.0	0.0	37.0	37.0	19.0
Total Split (%)	0.0%	0.0%	0.0%	37.8%	37.8%	0.0%	41.1%	41.1%	0.0%	0.0%	41.1%	41.1%	21%
Yellow Time (s)				3.0	3.0		3.0	3.0		3.0	3.0	3.0	
All-Red Time (s)				1.0	1.0		1.0	1.0		1.0	1.0	1.0	
Lead/Lag			Lead	Lead						Lag			
Lead-Lag Optimize?			Yes	Yes						Yes			
Recall Mode			C-Max	C-Max		Max	Max	Max	Max	Max	Max	None	
v/c Ratio				0.86			0.88	0.88		0.42	0.19		
Control Delay				34.5			47.1	47.1		14.1	4.1		
Queue Delay				0.0			0.0	0.5		0.0	0.0		
Total Delay				34.5			47.1	14.7		4.1			
Queue Length 50th (ft)				234			-291	171		31			
Queue Length 95th (ft)				#294			#434	283		m35			
Internal Link Dist (ft)		420		421			204	292					
Turn Bay Length (ft)													
Base Capacity (vph)				1452			515	764		716			
Starvation Cap Reductn				0			0	168		0			
Spillback Cap Reductn				0			0	0		0			
Storage Cap Reductn				0			0	0		0			
Reduced v/c Ratio				0.86			0.88	0.54		0.19			

**Intersection Summary**

Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 79 (88%), Referenced to phase 1:WBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.



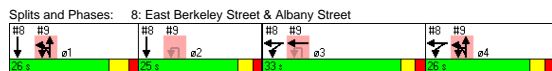
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔↔	↔↔↔	↔↔↔		↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)				4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor				0.91			1.00			1.00		
Frpb, ped/bikes				1.00			1.00			1.00		
Flpb, ped/bikes				1.00			1.00			1.00		
Frt				0.98			1.00			1.00		
Flt Protected				0.99			0.99			1.00		
Satd. Flow (prot)				4283			1501			1693		1418
Flt Permitted				0.99			0.85			1.00		1.00
Satd. Flow (perm)				4283			1291			1693		1418
Volume (vph)	0	0	0	215	785	160	75	310	0	0	290	125
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.85	0.85	0.85	0.85	0.90	0.90
Adj. Flow (vph)	0	0	0	231	844	172	88	365	0	0	322	139
RTOR Reduction (vph)	0	0	0	25	0	0	0	0	0	0	0	76
Lane Group Flow (vph)	0	0	0	0	1222	0	0	453	0	0	322	63
Confl. Bikes (#/hr)					3			1			5	
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	11	11	0	0	0	0	0	0
Parking (#/hr)							1	1				
Turn Type			Perm		Perm			Perm			Perm	
Protected Phases				1			5			5		2
Permitted Phases				1			5			5		
Actuated Green, G (s)				28.4			40.6			40.6		40.6
Effective Green, g (s)				28.4			40.6			40.6		40.6
Actuated g/C Ratio				0.32			0.45			0.45		0.45
Clearance Time (s)				4.0			4.0			4.0		4.0
Vehicle Extension (s)				2.0			2.0			2.0		2.0
Lane Grp Cap (vph)				1352			582			764		640
v/s Ratio Prot										0.19		
v/s Ratio Perm				0.29			0.35			0.04		0.04
v/c Ratio				0.90			0.78			0.42		0.10
Uniform Delay, d1				29.5			20.9			16.7		14.2
Progression Factor				1.00			1.00			0.64		0.96
Incremental Delay, d2				10.2			9.9			1.4		0.3
Delay (s)				39.7			30.8			12.2		13.9
Level of Service				D			C			B		B
Approach Delay (s)	0.0			39.7			30.8			12.7		
Approach LOS	A			D			C			B		

**Intersection Summary**

HCM Average Control Delay: 32.0 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.83  
 Actuated Cycle Length (s): 90.0 Sum of lost time (s): 21.0  
 Intersection Capacity Utilization: 75.4% ICU Level of Service: D  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø3	ø4
Lane Configurations					↑↑						↑↑↑					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Leading Detector (ft)				50	50						50					
Trailing Detector (ft)				0	0						0					
Turning Speed (mph)	15		9	15		9	15		9	15		9				
Right Turn on Red			Yes	Yes		Yes			Yes		No					
Link Speed (mph)		30			30			30			30					
Link Distance (ft)		501			316			383			416					
Travel Time (s)		11.4			7.2			8.7			9.5					
Volume (vph)	0	0	0	175	830	0	0	0	0	0	750	350				
Confl. Peds. (#/hr)											9					
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.97	0.97					
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%				
Lane Group Flow (vph)	0	0	0	0	1116	0	0	0	0	0	1134	0				
Turn Type				Split												
Protected Phases				3.4	3.4						1.2		1	2	3	4
Permitted Phases																
Detector Phases				3.4	3.4						1.2					
Minimum Initial (s)													11.0	18.0	8.0	8.0
Minimum Split (s)													26.0	25.0	25.0	26.0
Total Split (s)	0.0	0.0	0.0	59.0	59.0	0.0	0.0	0.0	0.0	0.0	51.0	0.0	26.0	25.0	33.0	26.0
Total Split (%)	0.0%	0.0%	0.0%	53.6%	53.6%	0.0%	0.0%	0.0%	0.0%	0.0%	46.4%	0.0%	24%	23%	30%	24%
Yellow Time (s)													4.0	3.0	3.0	3.0
All-Red Time (s)													2.0	2.0	2.0	2.0
Lead/Lag													Lead	Lag	Lead	Lag
Lead-Lag Optimize?													Yes	Yes	Yes	Yes
Recall Mode													Max	C-Max	None	None
v/c Ratio					0.71						0.61					
Control Delay					10.3						24.7					
Queue Delay					4.5						1.1					
Total Delay					14.8						25.8					
Queue Length 50th (ft)					62						252					
Queue Length 95th (ft)					441						238					
Internal Link Dist (ft)		421			236			303			336					
Turn Bay Length (ft)																
Base Capacity (vph)					1564						1844					
Starvation Cap Reductn					369						442					
Spillback Cap Reductn					0						0					
Storage Cap Reductn					0						0					
Reduced v/c Ratio					0.93						0.81					

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 20 (18%), Referenced to phase 2:SBT and 6:, Start of Green  
 Natural Cycle: 145  
 Control Type: Actuated-Coordinated



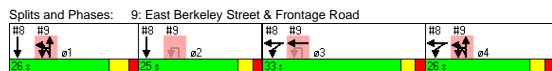
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑						↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)					4.0						4.0	
Lane Util. Factor					0.95						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.95	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					3097						4316	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					3097						4316	
Volume (vph)	0	0	0	175	830	0	0	0	0	0	750	350
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	184	922	0	0	0	0	0	773	361
RTOR Reduction (vph)	0	0	0	0	16	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1100	0	0	0	0	0	1134	0
Confl. Peds. (#/hr)											9	
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type				Split								
Protected Phases				3.4	3.4						1.2	
Permitted Phases												
Actuated Green, G (s)					54.0						46.0	
Effective Green, g (s)					55.0						47.0	
Actuated g/C Ratio					0.50						0.43	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1549						1844	
v/s Ratio Prot					c0.36						c0.26	
v/s Ratio Perm												
v/c Ratio					0.71						0.61	
Uniform Delay, d1					21.3						24.5	
Progression Factor					0.39						0.95	
Incremental Delay, d2					0.9						1.1	
Delay (s)					9.3						24.5	
Level of Service					A						C	
Approach Delay (s)	0.0				9.3			0.0			24.5	
Approach LOS	A				A			A			C	

**Intersection Summary**  
 HCM Average Control Delay: 16.9  
 HCM Volume to Capacity ratio: 0.67  
 Actuated Cycle Length (s): 110.0  
 Intersection Capacity Utilization: 62.9%  
 Analysis Period (min): 15  
 Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø4
Lane Configurations	← → ↵			← → ↵			← → ↵			← → ↵					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0	0	0	0	200	0	0	0	0	0	0	0			
Storage Lanes	0	0	0	0	2	1	0	0	0	0	0	0			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Leading Detector (ft)				50	50	50	50								
Trailing Detector (ft)				0	0	0	0								
Turning Speed (mph)	15		9	15		9	15		9	15		9			
Right Turn on Red	Yes			No			Yes			No			Yes		
Link Speed (mph)	30			30			30			30			30		
Link Distance (ft)	316			393			366			432			432		
Travel Time (s)	7.2			8.7			8.3			9.8			9.8		
Volume (vph)	0	0	0	0	650	85	70	355	1085	320	0	0	0	0	0
Confl. Peds. (#/hr)				13			2			1					
Confl. Bikes (#/hr)				2											
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.92	0.84	0.84	0.84	0.92	0.92	0.92		
Heavy Vehicles (%)	2%	2%	2%	4%	4%	2%	5%	5%	5%	2%	2%	2%			
Lane Group Flow (vph)	0	0	0	0	826	0	0	499	1673	0	0	0	0	0	0
Turn Type	Protected			custom			Split								
Protected Phases	3			1.4			1.4			1.4			1 2 4		
Permitted Phases	2.3														
Detector Phases	3			1.4			1.4			1.4					
Minimum Initial (s)	8.0												11.0 18.0 8.0		
Minimum Split (s)	25.0												26.0 25.0 26.0		
Total Split (s)	0.0	0.0	0.0	0.0	33.0	0.0	52.0	52.0	52.0	0.0	0.0	0.0	0.0	0.0	26.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	30.0%	0.0%	47.3%	47.3%	47.3%	0.0%	0.0%	0.0%	0.0%	0.0%	24%
Yellow Time (s)	3.0												4.0 3.0 3.0		
All-Red Time (s)	2.0												2.0 2.0 2.0		
Lead/Lag	Lead			Lead			Lead			Lag			Lag		
Lead-Lag Optimize?	Yes			Yes			Yes			Yes			Yes		
Recall Mode	None												Max C-Max None		
w/c Ratio	0.71			0.64			1.35								
Control Delay	40.8			13.5			189.7								
Queue Delay	0.3			0.0			0.0								
Total Delay	41.1			13.5			189.7								
Queue Length 50th (ft)	194			114			-851								
Queue Length 95th (ft)	239			200			#896								
Internal Link Dist (ft)	236			303			286			352					
Turn Bay Length (ft)															
Base Capacity (vph)	1158			783			1243								
Starvation Cap Reductn	0			0			0								
Spillback Cap Reductn	62			4			0								
Storage Cap Reductn	0			0			0								
Reduced w/c Ratio	0.75			0.64			1.35								

Intersection Summary	
Area Type:	CBD
Cycle Length:	110
Actuated Cycle Length:	110
Offset: 20 (18%), Referenced to phase 2:SBT and 6:, Start of Green	
Natural Cycle:	145
Control Type:	Actuated-Coordinated
-	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø4
Lane Configurations	← → ↵			← → ↵			← → ↵			← → ↵					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Total Lost time (s)	4.0			4.0			4.0			4.0					
Lane Util. Factor	0.91			0.91			0.91			0.91					
Frpb, ped/bikes	1.00			1.00			0.99			1.00					
Flpb, ped/bikes	1.00			1.00			1.00			1.00					
Fit	0.98			1.00			0.97			1.00					
Fit Protected	1.00			0.95			1.00			1.00					
Satd. Flow (prot)	4391			1414			2848			1414					
Fit Permitted	1.00			0.95			1.00			1.00					
Satd. Flow (perm)	4391			1414			2848			1414					
Volume (vph)	0	0	0	0	650	85	70	355	1085	320	0	0	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.89	0.89	0.89	0.92	0.84	0.84	0.84	0.92	0.92	0.92		
Adj. Flow (vph)	0	0	0	0	730	96	76	423	1292	381	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	166	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	826	0	0	333	1673	0	0	0	0	0	0
Confl. Peds. (#/hr)				13			2			1					
Heavy Vehicles (%)	2%	2%	2%	4%	4%	2%	5%	5%	5%	2%	2%	2%			
Turn Type	Protected			custom			Split								
Protected Phases	3			1.4			1.4			1.4					
Permitted Phases	2.3														
Detector Phases	3			1.4			1.4			1.4					
Minimum Green, G (s)	28.0			28.0			46.0			46.0					
Effective Green, g (s)	29.0			29.0			48.0			48.0					
Actuated g/C Ratio	0.26			0.26			0.44			0.44					
Clearance Time (s)	5.0			5.0			5.0			5.0					
Vehicle Extension (s)	2.0			2.0			2.0			2.0					
Lane Grp Cap (vph)	1158			617			1243			617					
v/s Ratio Prot	c0.19			0.24			c0.59			0.24					
v/s Ratio Perm				0.71			0.54			1.35					
Uniform Delay, d1	36.7			22.9			31.0			31.0					
Progression Factor	1.00			1.00			1.00			1.00					
Incremental Delay, d2	1.8			0.5			161.1			161.1					
Delay (s)	38.5			23.4			192.1			192.1					
Level of Service	D			C			F			F					
Approach Delay (s)	0.0			38.5			153.4			153.4			0.0		
Approach LOS	A			D			F			F			A		

Intersection Summary			
HCM Average Control Delay	121.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	33.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c	Critical Lane Group		

Lanes, Volumes, Timings

12: Traveler Street & Washington Street

10995.00 :: Boston Herald Redevelopment  
2016 No-Build Conditions :: Weekday Evening Peak

	↖	↗	↖	↗	↘	↙
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑↑			↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50			50
Trailing Detector (ft)		0	0			0
Turning Speed (mph)	15	9		9	15	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	25		25			30
Link Distance (ft)	412		376			321
Travel Time (s)	11.2		10.3			7.3
Volume (vph)	0	165	410	0	0	20
Peak Hour Factor	0.75	0.75	0.92	0.92	0.85	0.85
Heavy Vehicles (%)	0%	9%	5%	0%	0%	100%
Lane Group Flow (vph)	0	220	446	0	0	24
Turn Type	custom					
Protected Phases	5		1			1
Permitted Phases	1					
Detector Phases	5		1			1
Minimum Initial (s)	8.0		10.0			10.0
Minimum Split (s)		28.0	28.0			28.0
Total Split (s)	0.0	36.0	44.0	0.0	0.0	44.0
Total Split (%)	0.0%	45.0%	55.0%	0.0%	0.0%	55.0%
Yellow Time (s)		3.0	3.0			3.0
All-Red Time (s)		1.0	1.0			1.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	C-Max			C-Max	
v/c Ratio	0.16	0.13			0.04	
Control Delay	0.3	1.9			1.8	
Queue Delay	0.0	0.0			0.0	
Total Delay	0.3	1.9			1.8	
Queue Length 50th (ft)		0	12			2
Queue Length 95th (ft)		0	17			5
Internal Link Dist (ft)	332		296			241
Turn Bay Length (ft)						
Base Capacity (vph)	1357	3557			684	
Starvation Cap Reductn	0	0			0	
Spillback Cap Reductn	0	0			0	
Storage Cap Reductn	0	0			0	
Reduced v/c Ratio	0.16	0.13			0.04	

Intersection Summary

Area Type: CBD

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 6 (8%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 12: Traveler Street & Washington Street



HCM Signalized Intersection Capacity Analysis

12: Traveler Street & Washington Street

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2016 No-Build Conditions :: Weekday Evening Peak

	↖	↗	↖	↗	↘	↙
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑↑			↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor	1.00	0.91				1.00
Fr	0.86	1.00				1.00
Flt Protected	1.00	1.00				1.00
Satd. Flow (prot)	1357	4446				855
Flt Permitted	1.00	1.00				1.00
Satd. Flow (perm)	1357	4446				855
Volume (vph)	0	165	410	0	0	20
Peak-hour factor, PHF	0.75	0.75	0.92	0.92	0.85	0.85
Adj. Flow (vph)	0	220	446	0	0	24
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	220	446	0	0	24
Heavy Vehicles (%)	0%	9%	5%	0%	0%	100%
Turn Type	custom					
Protected Phases	5		1			1
Permitted Phases	1					
Actuated Green, G (s)	72.0		64.0			64.0
Effective Green, g (s)	72.0		64.0			64.0
Actuated g/C Ratio	0.90		0.80			0.80
Clearance Time (s)	4.0		4.0			4.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1357		3557			684
v/s Ratio Prot	c0.02		0.10			0.03
v/s Ratio Perm	0.15					
v/c Ratio	0.16	0.13				0.04
Uniform Delay, d1	0.5	1.8				1.6
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.0	0.1				0.1
Delay (s)	0.5	1.9				1.7
Level of Service	A	A				A
Approach Delay (s)	0.5	1.9				1.7
Approach LOS	A	A				A

Intersection Summary

HCM Average Control Delay 1.4 HCM Level of Service A

HCM Volume to Capacity ratio 0.16

Actuated Cycle Length (s) 80.0 Sum of lost time (s) 0.0

Intersection Capacity Utilization 26.8% ICU Level of Service A

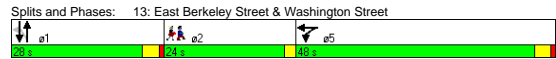
Analysis Period (min) 15

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0	0	0	0	80	0	0	0	0	0	0	
Storage Lanes	0	0	0	0	0	1	0	0	0	0	0	0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50		50	50			50		
Trailing Detector (ft)				0	0		0	0			0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			Yes		
Link Speed (mph)		25			30			25			30		
Link Distance (ft)		315			500			381			376		
Travel Time (s)		8.6			11.4			10.4			8.5		
Volume (vph)	0	0	0	225	875	75	120	335	0	0	20	0	
Confl. Peds. (#/hr)				163		129	179						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	100%	2%	2%	
Lane Group Flow (vph)	0	0	0	0	1278	0	130	364	0	0	22	0	
Turn Type				Split		Perm							
Protected Phases				5	5		1			1		2	
Permitted Phases							1						
Detector Phases				5	5		1	1			1		
Minimum Initial (s)				8.0	8.0		20.0	20.0			20.0		2.0
Minimum Split (s)				25.0	25.0		24.0	24.0			24.0		24.0
Total Split (s)	0.0	0.0	0.0	48.0	48.0	0.0	28.0	28.0	0.0	0.0	28.0	0.0	24.0
Total Split (%)	0.0%	0.0%	0.0%	48.0%	48.0%	0.0%	28.0%	28.0%	0.0%	0.0%	28.0%	0.0%	24%
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0		2.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0		0.0
Lead/Lag						Lead	Lead			Lead		Lag	
Lead-Lag Optimize?													
Recall Mode				None	None		C-Min	C-Min			C-Min		None
v/c Ratio				0.81		0.31	0.51			0.06			
Control Delay				33.4		28.7	30.2			26.8			
Queue Delay				0.0		0.0	0.0			0.0			
Total Delay				33.4		28.7	30.2			26.8			
Queue Length 50th (ft)				265		63	197			10			
Queue Length 95th (ft)				278		136	#388			32			
Internal Link Dist (ft)	235			420			301			296			
Turn Bay Length (ft)						80							
Base Capacity (vph)				1971		415	714			364			
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				0.65		0.31	0.51			0.06			

**Intersection Summary**

Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 98 (98%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)							4.0	4.0	4.0			4.0
Lane Util. Factor							0.91	1.00	1.00			1.00
Frpb, ped/bikes							0.99	1.00	1.00			1.00
Flpb, ped/bikes							1.00	0.88	1.00			1.00
Fr							0.99	1.00	1.00			1.00
Fl							0.99	0.95	1.00			1.00
Satd. Flow (prot)							4455	1394	1676			855
Flt Permitted							0.99	0.74	1.00			1.00
Satd. Flow (perm)							4455	1090	1676			855
Volume (vph)	0	0	0	225	875	75	120	335	0	0	20	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	245	951	82	130	364	0	0	22	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1269	0	130	364	0	0	22	0
Confl. Peds. (#/hr)				163		129	179					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	100%	2%	2%
Turn Type				Split		Perm						
Protected Phases				5	5		1			1		1
Permitted Phases							1					
Actuated Green, G (s)							35.0	41.8	41.8			41.8
Effective Green, g (s)							35.0	41.8	41.8			41.8
Actuated g/C Ratio							0.35	0.42	0.42			0.42
Clearance Time (s)							4.0	4.0	4.0			4.0
Vehicle Extension (s)							3.0	3.0	3.0			3.0
Lane Grp Cap (vph)							1559	456	701			357
v/s Ratio Prot							c0.28		c0.22			0.03
v/s Ratio Perm								0.12				
v/c Ratio							0.81	0.29	0.52			0.06
Uniform Delay, d1							29.5	19.2	21.6			17.4
Progression Factor							1.00	1.00	1.00			1.00
Incremental Delay, d2							3.4	1.6	2.7			0.3
Delay (s)							32.9	20.8	24.4			17.7
Level of Service							C	C	C			B
Approach Delay (s)	0.0						C	C	C	23.4		17.7
Approach LOS	A						C	C	C			B

**Intersection Summary**

HCM Average Control Delay: 30.1 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.65  
 Actuated Cycle Length (s): 100.0 Sum of lost time (s): 23.2  
 Intersection Capacity Utilization: 52.4% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
10: William E Mullins Way & Harrison Avenue

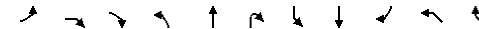
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Free		Free		Free		Free	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	30	0	85	5	1	5	110	125	0	0	450	55
Peak Hour Factor	0.65	0.65	0.65	0.75	0.75	0.75	0.83	0.83	0.83	0.96	0.96	0.96
Hourly flow rate (vph)	46	0	131	7	1	7	133	151	0	0	469	57
Pedestrians	40		44		2		2		2		2	
Lane Width (ft)	12.0		12.0		12.0		12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0		4.0		4.0		4.0	
Percent Blockage	3		4		0		0		0		0	
Right turn flare (veh)	Raised		Raised									
Median type	1		1									
Median storage (veh)												
Upstream signal (ft)					364		356					
pX, platoon unblocked	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
vC, conflicting volume	887	997	305	827	1026	121	566			195		
vC1, stage 1 conf vol	537	537		460	460							
vC2, stage 2 conf vol	350	460		367	566							
vCu, unblocked vol	838	952	230	775	982	121	502		195			
tC, single (s)	7.6	6.6	7.0	7.5	6.5	6.9	4.1		4.2			
tC, 2 stage (s)	6.6	5.6		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2		2.2			
p0 queue free %	86	100	82	98	100	99	86		100			
cM capacity (veh/h)	329	313	711	283	276	879	979		1311			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>						
Volume Total	177	15	208	75	234	292						
Volume Left	46	7	133	0	0	0						
Volume Right	131	7	0	0	0	57						
cSH	545	408	979	1700	1311	1700						
Volume to Capacity	0.32	0.04	0.14	0.04	0.00	0.17						
Queue Length 95th (ft)	35	3	12	0	0	0						
Control Delay (s)	14.7	14.2	6.4	0.0	0.0	0.0						
Lane LOS	B	B	A									
Approach Delay (s)	14.7	14.2	4.7	0.0								
Approach LOS	B	B										
<b>Intersection Summary</b>												
Average Delay	4.1											
Intersection Capacity Utilization	47.0%		ICU Level of Service		A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
11: Boston Herald Back & Albany Street

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2016 No-Build Conditions :: Weekday Evening Peak



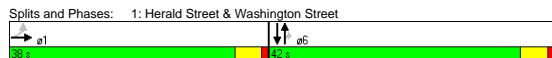
Movement	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR	
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Free		Free		Free		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	0	2	10	0	0	0	960	2245	0	0	0	
Peak Hour Factor	0.36	0.36	0.36	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	
Hourly flow rate (vph)	0	6	28	0	0	0	1021	2388	0	0	0	
Pedestrians	4											
Lane Width (ft)	12.0											
Walking Speed (ft/s)	4.0											
Percent Blockage	0											
Right turn flare (veh)	None											
Median type	None											
Median storage (veh)												
Upstream signal (ft)					557		158					
pX, platoon unblocked	0.69	0.69	0.69	0.69						0.69		
vC, conflicting volume	4435	4435	800	2392			0		4435	0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	5093	5093	0	2114			0		5093	0		
tC, single (s)	7.5	6.5	6.9	4.1			4.1		6.5	6.9		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	2.2			2.2		4.0	3.3		
p0 queue free %	100	0	96	100			37		100	100		
cM capacity (veh/h)	0	0	745	174			1622		0	1084		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>SB 1</b>	<b>SB 2</b>	<b>SB 3</b>								
Volume Total	33	1618	1194	597								
Volume Left	0	1021	0	0								
Volume Right	28	0	0	0								
cSH	1	1622	1700	1700								
Volume to Capacity	42.37	0.63	0.70	0.35								
Queue Length 95th (ft)	Err	120	0	0								
Control Delay (s)	Err	10.8	0.0	0.0								
Lane LOS	F	B										
Approach Delay (s)	Err	5.1										
Approach LOS	F											
<b>Intersection Summary</b>												
Average Delay	101.9											
Intersection Capacity Utilization	79.9%		ICU Level of Service		D							
Analysis Period (min)	15											

Lanes, Volumes, Timings  
1: Herald Street & Washington Street

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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			←			↑↑			↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50						50	50	50		
Trailing Detector (ft)	0	0						0	0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red	No			Yes			Yes			Yes		
Link Speed (mph)	30			30			30			30		
Link Distance (ft)	376			407			342			464		
Travel Time (s)	8.5			9.3			7.8			10.5		
Volume (vph)	45	820	0	0	0	0	0	445	130	0	15	0
Confl. Peds. (#/hr)	11		21					89	89			
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.93	0.93	0.93	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	100%	100%	100%
Bus Blockages (#/hr)	0	2	2	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0 920 0			0 0 0			0 478 140			0 16 0		
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases	1			6			6			6		
Permitted Phases	1			6			6			6		
Detector Phases	1 1			6 6			6 6			6 6		
Minimum Initial (s)	12.0 12.0			12.0 12.0			12.0 12.0			12.0 12.0		
Minimum Split (s)	31.0 31.0			31.0 31.0			31.0 31.0			31.0 31.0		
Total Split (s)	38.0 38.0			0.0 0.0			0.0 0.0			42.0 42.0		
Total Split (%)	47.5% 47.5%			0.0% 0.0%			0.0% 0.0%			52.5% 52.5%		
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		
Lead/Lag	Lead-Lag Optimize?			Recall Mode			v/c Ratio			Control Delay		
Recall Mode	Max			Max			C-Max			C-Max		
v/c Ratio	0.48			0.48			0.32			0.23		
Control Delay	17.7			17.7			13.8			8.3		
Queue Delay	0.0			0.0			0.0			0.0		
Total Delay	17.7			17.7			13.8			8.3		
Queue Length 50th (ft)	117			117			74			21		
Queue Length 95th (ft)	153			153			107			54		
Internal Link Dist (ft)	296			327			262			384		
Turn Bay Length (ft)	1914			1484			619			406		
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	0.48			0.32			0.23			0.04		

Intersection Summary	
Area Type:	CBD
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	73 (91%), Referenced to phase 6:NBSB, Start of Green
Natural Cycle:	65
Control Type:	Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis  
1: Herald Street & Washington Street

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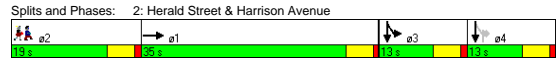
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			←			↑↑			↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0			4.0			4.0			4.0		
Lane Util. Factor	0.91			0.95			1.00			1.00		
Frpb, ped/bikes	1.00			1.00			0.88			1.00		
Flpb, ped/bikes	1.00			1.00			1.00			1.00		
Frt	1.00			1.00			0.85			1.00		
Flt Protected	1.00			1.00			1.00			1.00		
Satd. Flow (prot)	4506			3124			1235			855		
Flt Permitted	1.00			1.00			1.00			1.00		
Satd. Flow (perm)	4506			3124			1235			855		
Volume (vph)	45	820	0	0	0	0	0	445	130	0	15	0
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.93	0.93	0.93	0.94	0.94	0.94	0.94
Adj. Flow (vph)	48	872	0	0	0	0	0	478	140	0	16	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	32	0	0	0	0
Lane Group Flow (vph)	0 920 0			0 0 0			0 478 108			0 16 0		
Confl. Peds. (#/hr)	11		21					89	89			
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	100%	100%	100%
Bus Blockages (#/hr)	0	2	2	0	0	0	0	0	0	0	0	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases	1			6			6			6		
Permitted Phases	1			6			6			6		
Actuated Green, G (s)	33.0			37.0			37.0			37.0		
Effective Green, g (s)	34.0			38.0			38.0			38.0		
Actuated g/C Ratio	0.42			0.48			0.48			0.48		
Clearance Time (s)	5.0			5.0			5.0			5.0		
Vehicle Extension (s)	3.0			3.0			3.0			3.0		
Lane Grp Cap (vph)	1915			1484			587			406		
v/s Ratio Prot	c0.15			0.15			0.15			0.15		
v/s Ratio Perm	0.20			0.09			0.09			0.09		
v/c Ratio	0.48			0.32			0.18			0.04		
Uniform Delay, d1	16.6			13.0			12.1			11.2		
Progression Factor	1.00			1.00			1.00			1.00		
Incremental Delay, d2	0.9			0.6			0.7			0.2		
Delay (s)	17.5			13.6			12.8			11.4		
Level of Service	B			B			B			B		
Approach Delay (s)	17.5			0.0			13.4			11.4		
Approach LOS	B			A			B			B		

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50									50	50	50	
Trailing Detector (ft)	0									0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes	No		Yes		
Link Speed (mph)	30			30			30			30			
Link Distance (ft)	407			540			356			340			
Travel Time (s)	9.3			12.3			8.1			7.7			
Volume (vph)	0	745	205	0	0	0	0	0	55	90	215	0	
Confl. Bikes (#/hr)									2				
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.82	0.82	0.82	0.98	0.98	0.98	
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	2%	2%	2%	
Parking (#/hr)									2				
Lane Group Flow (vph)	0	1011	0	0	0	0	0	0	67	92	219	0	
Turn Type	custom custom												
Protected Phases	1									3	3	4	2
Permitted Phases									4	4			
Detector Phases	1								4	3	3	4	
Minimum Initial (s)	1.0								8.0	8.0			4.0
Minimum Split (s)	19.0								13.0	13.0			19.0
Total Split (s)	0.0	35.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	13.0	26.0	0.0	19.0
Total Split (%)	0.0%	43.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.3%	16.3%	32.5%	0.0%	24%
Yellow Time (s)	4.0								4.0	4.0			4.0
All-Red Time (s)	1.0								1.0	1.0			1.0
Lead/Lag	Lag								Lag	Lead			Lead
Lead-Lag Optimize?	Yes								Yes	Yes			Yes
Recall Mode	Max								Max	Max			Max
v/c Ratio	0.57								0.07	0.21	0.25		
Control Delay	18.8								0.1	23.9	23.5		
Queue Delay	0.0								0.0	0.0	0.0		
Total Delay	18.8								0.1	23.9	23.5		
Queue Length 50th (ft)	127								0	35	44		
Queue Length 95th (ft)	168								0	72	73		
Internal Link Dist (ft)	327			460				276				260	
Turn Bay Length (ft)													
Base Capacity (vph)	1762								962	438	876		
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	0.57								0.07	0.21	0.25		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Natural Cycle: 65  
 Control Type: Semi Act-Uncoord



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0									4.0	4.0	4.0
Lane Util. Factor	0.91									0.88	1.00	0.95
Frpb, ped/bikes	1.00									1.00	1.00	1.00
Flpb, ped/bikes	1.00									1.00	1.00	1.00
Frt	0.97									0.85	1.00	1.00
Flt Protected	1.00									1.00	0.95	1.00
Satd. Flow (prot)	4386									2379	1593	3185
Flt Permitted	1.00									1.00	0.95	1.00
Satd. Flow (perm)	4386									2379	1593	3185
Volume (vph)	0	745	205	0	0	0	0	0	55	90	215	0
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.82	0.82	0.82	0.98	0.98	0.98
Adj. Flow (vph)	0	793	218	0	0	0	0	0	67	92	219	0
RTOR Reduction (vph)	0	62	0	0	0	0	0	0	0	59	0	0
Lane Group Flow (vph)	0	949	0	0	0	0	0	0	8	92	219	0
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	2%	2%	2%
Parking (#/hr)									2			
Turn Type	custom custom											
Protected Phases	1									3	3	4
Permitted Phases									4	4		
Actuated Green, G (s)	30.0								8.0	16.0	21.0	
Effective Green, g (s)	31.0								9.0	18.0	22.0	
Actuated g/C Ratio	0.39								0.11	0.22	0.28	
Clearance Time (s)	5.0								5.0	5.0		
Vehicle Extension (s)	3.0								2.0	2.0		
Lane Grp Cap (vph)	1700								268	438	876	
v/s Ratio Prot	c0.22								0.02	0.02	c0.07	
v/s Ratio Perm									0.00	0.03		
v/c Ratio	0.56								0.03	0.21	0.25	
Uniform Delay, d1	19.1								31.6	25.5	22.6	
Progression Factor	1.00								1.00	1.00	1.00	
Incremental Delay, d2	1.3								0.2	1.1	0.7	
Delay (s)	20.5								31.8	26.6	23.3	
Level of Service	C								C	C	C	
Approach Delay (s)	20.5			0.0				31.8				24.2
Approach LOS	C			A				C				C

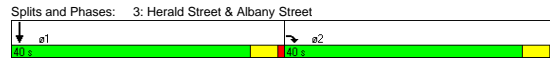
**Intersection Summary**  
 HCM Average Control Delay: 21.9  
 HCM Volume to Capacity ratio: 0.43  
 Actuated Cycle Length (s): 80.0  
 Intersection Capacity Utilization: 44.4%  
 Analysis Period (min): 15  
 HCM Level of Service: C  
 Sum of lost time (s): 27.0  
 ICU Level of Service: A  
 c Critical Lane Group

Lanes, Volumes, Timings  
3: Herald Street & Albany Street

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2016 No-Build Conditions :: Saturday Middy Peak

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50			50	
Trailing Detector (ft)		0			0	
Turning Speed (mph)	15	9	15			9
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	540			158	348	
Travel Time (s)	12.3			3.6	7.9	
Volume (vph)	0	890	0	0	940	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.96	0.96
Heavy Vehicles (%)	3%	3%	2%	2%	6%	6%
Lane Group Flow (vph)	0	967	0	0	979	0
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Detector Phases	2		1			
Minimum Initial (s)	8.0		8.0			
Minimum Split (s)	23.0		23.0			
Total Split (s)	0.0	40.0	0.0	0.0	40.0	0.0
Total Split (%)	0.0%	50.0%	0.0%	0.0%	50.0%	0.0%
Yellow Time (s)	4.0		4.0			
All-Red Time (s)	1.0		1.0			
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	Max		C-Max			
v/c Ratio	0.67		0.49			
Control Delay	20.1		16.6			
Queue Delay	0.0		0.0			
Total Delay	20.1		16.6			
Queue Length 50th (ft)	160		121			
Queue Length 95th (ft)	215		158			
Internal Link Dist (ft)	460		78		268	
Turn Bay Length (ft)						
Base Capacity (vph)	1448		1982			
Starvation Cap Reductn	0		0			
Spillback Cap Reductn	0		0			
Storage Cap Reductn	0		0			
Reduced v/c Ratio	0.67		0.49			

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 10 (13%), Referenced to phase 1:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis  
3: Herald Street & Albany Street

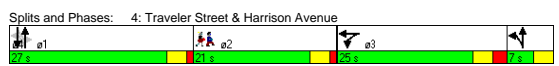
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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			
Lane Util. Factor	0.76		0.91			
Frt	0.85		1.00			
Fit Protected	1.00		1.00			
Satd. Flow (prot)	3217		4404			
Fit Permitted	1.00		1.00			
Satd. Flow (perm)	3217		4404			
Volume (vph)	0	890	0	0	940	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.96	0.96
Adj. Flow (vph)	0	967	0	0	979	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	967	0	0	979	0
Heavy Vehicles (%)	3%	3%	2%	2%	6%	6%
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Actuated Green, G (s)	35.0		35.0			
Effective Green, g (s)	36.0		36.0			
Actuated g/C Ratio	0.45		0.45			
Clearance Time (s)	5.0		5.0			
Vehicle Extension (s)	2.0		2.0			
Lane Grp Cap (vph)	1448		1982			
v/s Ratio Prot	c0.30		c0.22			
v/s Ratio Perm						
v/c Ratio	0.67		0.49			
Uniform Delay, d1	17.3		15.6			
Progression Factor	1.00		1.00			
Incremental Delay, d2	2.5		0.9			
Delay (s)	19.8		16.4			
Level of Service	B		B			
Approach Delay (s)	19.8		0.0	16.4		
Approach LOS	B		A	B		
<b>Intersection Summary</b>						
HCM Average Control Delay	18.1		HCM Level of Service		B	
HCM Volume to Capacity ratio	0.58					
Actuated Cycle Length (s)	80.0		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	49.9%		ICU Level of Service		A	
Analysis Period (min)	15					

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations				↔	↔			↔	↔		↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50		
Trailing Detector (ft)	0	0		0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			No		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)	443			513			372			364			
Travel Time (s)	10.1			11.7			8.5			8.3			
Volume (vph)	0	0	0	30	40	40	80	120	115	110	240	150	
Confl. Bikes (#/hr)								2			2		
Peak Hour Factor	0.92	0.92	0.92	0.77	0.77	0.77	0.90	0.90	0.90	0.90	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%	2%
Lane Group Flow (vph)	0	0	0	39	104	0	0	350	0	0	544	0	
Turn Type				Split			D.P+P			Perm			
Protected Phases				3	3		4	14		1		2	
Permitted Phases							1			1			
Detector Phases				3	3		4	14		1	1		
Minimum Initial (s)				7.0	7.0		4.0			7.0	7.0		2.0
Minimum Split (s)				21.0	21.0		7.0			20.0	20.0		21.0
Total Split (s)	0.0	0.0	0.0	25.0	25.0	0.0	7.0	34.0	0.0	27.0	27.0	0.0	21.0
Total Split (%)	0.0%	0.0%	0.0%	31.3%	31.3%	0.0%	8.8%	42.5%	0.0%	33.8%	33.8%	0.0%	26%
Yellow Time (s)				3.0	3.0		3.0			3.0	3.0		3.0
All-Red Time (s)				2.0	2.0		0.0			1.0	1.0		1.0
Lead/Lag				Lead	Lead		Lag			Lead	Lead		Lag
Lead-Lag Optimize?				Yes	Yes		Yes			Yes	Yes		Yes
Recall Mode				Max	Max		Max			C-Max	C-Max		None
v/c Ratio				0.06	0.16			0.45			0.84		
Control Delay				19.4	12.1			13.8			40.9		
Queue Delay				0.0	0.0			0.0			0.0		
Total Delay				19.4	12.1			13.8			40.9		
Queue Length 50th (ft)				9	12			38			133		
Queue Length 95th (ft)				32	46			68			#221		
Internal Link Dist (ft)			363		433			292			284		
Turn Bay Length (ft)													
Base Capacity (vph)				656	669			785			645		
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				0.06	0.16			0.45			0.84		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 20 (25%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



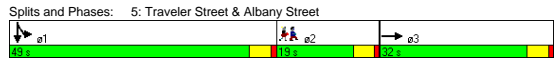
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔	↔			↔	↔		↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92								0.95	0.96	
Flt Protected										0.99	0.99	
Satd. Flow (prot)				1562	1521					2958	2988	
Flt Permitted				0.95	1.00					0.66	0.74	
Satd. Flow (perm)				1562	1521					1972	2222	
Volume (vph)	0	0	0	30	40	40	80	120	115	110	240	150
Peak-hour factor, PHF	0.92	0.92	0.92	0.77	0.77	0.77	0.90	0.90	0.90	0.90	0.92	0.92
Adj. Flow (vph)	0	0	0	39	52	52	89	133	128	120	261	163
RTOR Reduction (vph)	0	0	0	0	30	0	0	90	0	0	0	0
Lane Group Flow (vph)	0	0	0	39	74	0	0	260	0	0	544	0
Confl. Bikes (#/hr)								2			2	
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type				Split			D.P+P			Perm		
Protected Phases				3	3		4	14		1		
Permitted Phases							1			1		
Actuated Green, G (s)				32.6	32.6			24.6			20.6	
Effective Green, g (s)				33.6	33.6			23.6			20.6	
Actuated g/C Ratio				0.42	0.42			0.30			0.26	
Clearance Time (s)				5.0	5.0			1.0			4.0	
Vehicle Extension (s)				2.0	2.0						2.0	
Lane Grp Cap (vph)				656	639			619			572	
v/s Ratio Prot				0.02	c0.05			c0.02				
v/s Ratio Perm								0.11			c0.24	
v/c Ratio				0.06	0.12			0.42			0.95	
Uniform Delay, d1				13.8	14.1			22.7			29.2	
Progression Factor				1.00	1.00			1.00			1.00	
Incremental Delay, d2				0.2	0.4			2.1			27.3	
Delay (s)				14.0	14.5			24.8			56.5	
Level of Service				B	B			C			E	
Approach Delay (s)	0.0				14.4			24.8			56.5	
Approach LOS	A				B			C			E	

**Intersection Summary**  
 HCM Average Control Delay: 40.0 HCM Level of Service: D  
 HCM Volume to Capacity ratio: 0.43  
 Actuated Cycle Length (s): 80.0 Sum of lost time (s): 22.8  
 Intersection Capacity Utilization: 42.5% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	e2
Lane Configurations		↕								↕	↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50									50	50		
Trailing Detector (ft)	0									0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes	Yes	Yes		No	
Link Speed (mph)	30			30			30			30			
Link Distance (ft)	513			322			416			557			
Travel Time (s)	11.7			7.3			9.5			12.7			
Volume (vph)	0	145	85	0	0	0	0	0	550	500	115		
Peak Hour Factor	0.82	0.82	0.82	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	5%	5%	5%	
Lane Group Flow (vph)	0	281	0	0	0	0	0	0	0	517	736	0	
Turn Type										Split			
Protected Phases	3									1	1	2	
Permitted Phases													
Detector Phases	3									1	1		
Minimum Initial (s)	8.0									10.0	10.0	4.0	
Minimum Split (s)	24.0									24.0	24.0	19.0	
Total Split (s)	0.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.0	49.0	0.0	19.0
Total Split (%)	0.0%	32.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	49.0%	49.0%	0.0%	19%
Yellow Time (s)	4.0									4.0	4.0	4.0	
All-Red Time (s)	1.0									1.0	1.0	1.0	
Lead/Lag										Lead	Lead	Lag	
Lead-Lag Optimize?										Yes	Yes	Yes	
Recall Mode	None									C-Max	C-Max	None	
v/c Ratio	0.65									0.43	0.33		
Control Delay	33.4									1.9	5.5		
Queue Delay	0.0									0.0	0.0		
Total Delay	33.4									1.9	5.5		
Queue Length 50th (ft)	56									0	47		
Queue Length 95th (ft)	83									46	179		
Internal Link Dist (ft)	433			242			336			477			
Turn Bay Length (ft)													
Base Capacity (vph)	909									1201	2210		
Starvation Cap Reductn	0									0	0		
Spillback Cap Reductn	0									0	0		
Storage Cap Reductn	0									0	0		
Reduced v/c Ratio	0.31									0.43	0.33		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 39 (39%), Referenced to phase 1:SBTL, Start of Green  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕								↕	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0									4.0	4.0	
Lane Util. Factor	0.95									0.91	0.91	
Frt	0.94									1.00	0.97	
Flt Protected	1.00									0.95	0.99	
Satd. Flow (prot)	2979									1408	2875	
Flt Permitted	1.00									0.95	0.99	
Satd. Flow (perm)	2979									1408	2875	
Volume (vph)	0	145	85	0	0	0	0	0	0	550	500	115
Peak-hour factor, PHF	0.82	0.82	0.82	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	177	104	0	0	0	0	0	0	591	538	124
RTOR Reduction (vph)	0	92	0	0	0	0	0	0	0	141	4	0
Lane Group Flow (vph)	0	189	0	0	0	0	0	0	0	376	732	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Turn Type										Split		
Protected Phases	3									1	1	
Permitted Phases												
Actuated Green, G (s)	10.5									71.7	71.7	
Effective Green, g (s)	11.5									72.7	72.7	
Actuated g/C Ratio	0.12									0.73	0.73	
Clearance Time (s)	5.0									5.0	5.0	
Vehicle Extension (s)	2.0									2.0	2.0	
Lane Grp Cap (vph)	343									1024	2090	
v/s Ratio Prot	c0.06									c0.27	0.25	
v/s Ratio Perm										0.37	0.35	
Uniform Delay, d1	41.8									5.1	5.0	
Progression Factor	1.00									1.00	1.00	
Incremental Delay, d2	1.1									1.0	0.5	
Delay (s)	42.9									6.1	5.5	
Level of Service	D									A	A	
Approach Delay (s)	42.9			0.0			0.0			5.7		
Approach LOS	D			A			A			A		
<b>Intersection Summary</b>												
HCM Average Control Delay	12.5									HCM Level of Service	B	
HCM Volume to Capacity ratio	0.39											
Actuated Cycle Length (s)	100.0									Sum of lost time (s)	15.8	
Intersection Capacity Utilization	38.9%									ICU Level of Service	A	
Analysis Period (min)	15											

c Critical Lane Group

Lanes, Volumes, Timings  
6: Traveler Street & Frontage Road

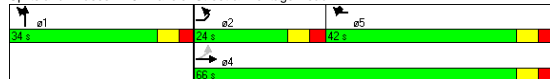
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Lane Group	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0
Turning Speed (mph)	15	15		9	9	15		9
Right Turn on Red	No			Yes				No
Link Speed (mph)			30				30	
Link Distance (ft)			322				432	
Travel Time (s)			7.3				9.8	
Volume (vph)	40	215	440	105	405	195	380	25
Confl. Peds. (#/hr)				10	10			4
Peak Hour Factor	0.99	0.99	0.99	0.80	0.80	0.94	0.94	0.94
Heavy Vehicles (%)	4%	4%	4%	3%	3%	9%	9%	9%
Lane Group Flow (vph)	0	257	444	131	506	207	431	0
Turn Type	Prot	Perm		custom	custom	Split		
Protected Phases	2	4	5	5	1	1		
Permitted Phases		4						
Detector Phases	2	4	4	5	5	1	1	
Minimum Initial (s)	10.0	10.0	10.0	8.0	8.0	10.0	10.0	
Minimum Split (s)	24.0	34.0	34.0	34.0	34.0	34.0	34.0	
Total Split (s)	24.0	66.0	66.0	42.0	42.0	34.0	34.0	0.0
Total Split (%)	24.0%	66.0%	66.0%	42.0%	42.0%	34.0%	34.0%	0.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead			Lag	Lag			
Lead-Lag Optimize?	Yes			Yes	Yes			
Recall Mode	Max	Max	Max	Max	Max	Max	Max	
v/c Ratio	0.27	0.23	0.28	0.28	0.66	0.24	0.34	
Control Delay	9.5	8.8	23.5	10.9	27.3	28.2		
Queue Delay	1.4	0.6	0.0	0.0	0.0	0.0		
Total Delay	11.0	9.4	23.5	10.9	27.3	28.2		
Queue Length 50th (ft)	68	60	64	54	51	78		
Queue Length 95th (ft)	110	84	102	107	80	107		
Internal Link Dist (ft)			242				352	
Turn Bay Length (ft)								
Base Capacity (vph)	968	1937	472	772	867	1272		
Starvation Cap Reductn	522	1084	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0		
Reduced v/c Ratio	0.58	0.52	0.28	0.66	0.24	0.34		

Intersection Summary

Area Type: CBD  
Cycle Length: 100  
Actuated Cycle Length: 100  
Natural Cycle: 95  
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Traveler Street & Frontage Road



HCM Signalized Intersection Capacity Analysis  
6: Traveler Street & Frontage Road

10995.00 :: Boston Herald Redevelopment  
2016 No-Build Conditions :: Saturday Midday Peak

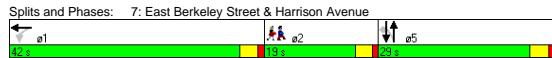
Movement	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.97	0.91		
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	1.00	0.85	0.85	1.00	0.99		
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1562	3124	1242	1411	2891	4238		
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1562	3124	1242	1411	2891	4238		
Volume (vph)	40	215	440	105	405	195	380	25
Peak-hour factor, PHF	0.99	0.99	0.99	0.80	0.80	0.94	0.94	0.94
Adj. Flow (vph)	40	217	444	131	506	207	404	27
RTOR Reduction (vph)	0	0	0	0	236	0	0	0
Lane Group Flow (vph)	0	257	444	131	270	207	431	0
Confl. Peds. (#/hr)				10	10			4
Heavy Vehicles (%)	4%	4%	4%	3%	3%	9%	9%	9%
Turn Type	Prot	Perm		custom	custom	Split		
Protected Phases	2	4	5	5	1	1		
Permitted Phases		4						
Actuated Green, G (s)	59.0	59.0	35.0	35.0	27.0	27.0		
Effective Green, g (s)	62.0	62.0	38.0	38.0	30.0	30.0		
Actuated g/C Ratio	0.62	0.62	0.38	0.38	0.30	0.30		
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		
Lane Grp Cap (vph)	968	1937	472	536	867	1271		
v/s Ratio Prot			0.14	0.11	c0.19	0.07	c0.10	
v/s Ratio Perm		c0.16						
v/c Ratio	0.27	0.23	0.28	0.50	0.24	0.34		
Uniform Delay, d1	8.6	8.4	21.5	23.8	26.4	27.3		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	0.7	0.3	1.5	3.4	0.6	0.7		
Delay (s)	9.3	8.7	22.9	27.1	27.0	28.0		
Level of Service	A	A	C	C	C	C		
Approach Delay (s)		8.9				27.7		
Approach LOS		A				C		

Intersection Summary

HCM Average Control Delay: 20.6, HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.40  
 Actuated Cycle Length (s): 100.0, Sum of lost time (s): 12.0  
 Intersection Capacity Utilization: 68.6%, ICU Level of Service: C  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations				↔↔↔	↔↔↔	↔↔↔		↔		↔	↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50		50	50		50	50		
Trailing Detector (ft)				0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		496			501			284			372		
Travel Time (s)		11.3			11.4			6.5			8.5		
Volume (vph)	0	0	0	130	585	155	65	150	0	0	160	115	
Confl. Bikes (#/hr)					3			2					
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.86	0.86	0.86	0.83	0.83	0.83	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	5	5	0	0	0	0	0	0	
Parking (#/hr)							1	1					
Lane Group Flow (vph)	0	0	0	0	977	0	0	250	0	0	193	139	
Turn Type				Perm		Perm			Perm				
Protected Phases				1		5			5		2		
Permitted Phases				1		5			5		5		
Detector Phases				1	1	5	5		5	5			
Minimum Initial (s)				5.0	5.0	5.0	5.0		5.0	5.0	4.0		
Minimum Split (s)				22.0	22.0	20.0	20.0		20.0	20.0	19.0		
Total Split (s)	0.0	0.0	0.0	42.0	42.0	0.0	29.0	29.0	0.0	0.0	29.0	19.0	
Total Split (%)	0.0%	0.0%	0.0%	46.7%	46.7%	0.0%	32.2%	32.2%	0.0%	0.0%	32.2%	21%	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0	
Lead/Lag				Lead	Lead						Lag		
Lead-Lag Optimize?				Yes	Yes						Yes		
Recall Mode				C-Max	C-Max		Max	Max		Max	Max	None	
v/c Ratio				0.52			0.50		0.29	0.22			
Control Delay				19.0			28.2		22.6	5.6			
Queue Delay				0.0			0.0		0.0	0.0			
Total Delay				19.0			28.2		22.6	5.6			
Queue Length 50th (ft)				136			87		61	0			
Queue Length 95th (ft)				172			#222		139	34			
Internal Link Dist (ft)		416			421			204			292		
Turn Bay Length (ft)													
Base Capacity (vph)					1888			496			672	646	
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					0.52			0.50			0.29	0.22	

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 56 (62%), Referenced to phase 1:WBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

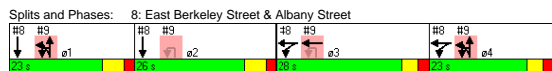


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔↔	↔↔↔	↔↔↔		↔		↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor				0.91	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes				1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes				1.00	1.00		1.00	1.00		1.00	1.00	
Frt				0.97	1.00		1.00	1.00		1.00	0.85	
Flt Protected				0.99	0.99		0.99	0.99		1.00	1.00	
Satd. Flow (prot)				4381	1478		1478	1660		1660	1393	
Flt Permitted				0.99	0.86		0.86	1.00		1.00	1.00	
Satd. Flow (perm)				4381	1285		1285	1660		1660	1393	
Volume (vph)	0	0	0	130	585	155	65	150	0	0	160	115
Peak-hour factor, PHF	0.92	0.92	0.92	0.89	0.89	0.89	0.86	0.86	0.86	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	146	657	174	76	174	0	0	193	139
RTOR Reduction (vph)	0	0	0	39	0	0	0	0	0	0	0	83
Lane Group Flow (vph)	0	0	0	0	938	0	0	250	0	0	193	56
Confl. Bikes (#/hr)					3			2				2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	5	5	0	0	0	0	0	0
Parking (#/hr)							1	1				
Turn Type				Perm		Perm			Perm			
Protected Phases				1		5			5		5	
Permitted Phases				1		5			5		5	
Actuated Green, G (s)				35.6		36.4			36.4		36.4	
Effective Green, g (s)				35.6		36.4			36.4		36.4	
Actuated g/C Ratio				0.40		0.40			0.40		0.40	
Clearance Time (s)				4.0		4.0			4.0		4.0	
Vehicle Extension (s)				2.0		2.0			2.0		2.0	
Lane Grp Cap (vph)				1733		520			671		563	
v/s Ratio Prot											0.12	
v/s Ratio Perm				0.21		0.19			0.19		0.04	
v/c Ratio				0.54		0.48			0.29		0.10	
Uniform Delay, d1				20.9		19.8			18.1		16.6	
Progression Factor				1.00		1.00			1.00		1.00	
Incremental Delay, d2				1.2		3.2			1.1		0.4	
Delay (s)				22.1		23.0			19.1		17.0	
Level of Service				C		C			B		B	
Approach Delay (s)	0.0			22.1		23.0			18.2			
Approach LOS	A			C		C			B			

**Intersection Summary**  
 HCM Average Control Delay: 21.4 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.51  
 Actuated Cycle Length (s): 90.0 Sum of lost time (s): 18.0  
 Intersection Capacity Utilization: 51.5% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø3	ø4
Lane Configurations					↑↑						↑↑↑					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Leading Detector (ft)				50	50						50					
Trailing Detector (ft)				0	0						0					
Turning Speed (mph)	15		9	15		9	15		9	15		9				
Right Turn on Red			Yes	Yes		Yes			Yes			No				
Link Speed (mph)		30			30				30			30				
Link Distance (ft)		501			316				383			416				
Travel Time (s)		11.4			7.2				8.7			9.5				
Volume (vph)	0	0	0	140	615	0	0	0	0	0	300	285				
Confl. Peds. (#/hr)												6				
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.83	0.83	0.83				
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	7%	7%	7%				
Lane Group Flow (vph)	0	0	0	0	812	0	0	0	0	0	704	0				
Turn Type				Split												
Protected Phases				3.4	3.4						1.2		1	2	3	4
Permitted Phases																
Detector Phases				3.4	3.4						1.2					
Minimum Initial (s)													11.0	18.0	8.0	8.0
Minimum Split (s)													22.0	26.0	25.0	23.0
Total Split (s)	0.0	0.0	0.0	51.0	51.0	0.0	0.0	0.0	0.0	0.0	49.0	0.0	23.0	26.0	28.0	23.0
Total Split (%)	0.0%	0.0%	0.0%	51.0%	51.0%	0.0%	0.0%	0.0%	0.0%	0.0%	49.0%	0.0%	23%	26%	28%	23%
Yellow Time (s)													4.0	4.0	3.0	3.0
All-Red Time (s)													2.0	2.0	2.0	2.0
Lead/Lag													Lead	Lag	Lead	Lag
Lead-Lag Optimize?													Yes	Yes	Yes	Yes
Recall Mode													Max	C-Max	None	None
v/c Ratio					0.55						0.39					
Control Delay					8.3						20.3					
Queue Delay					0.8						0.0					
Total Delay					9.1						20.3					
Queue Length 50th (ft)					60						94					
Queue Length 95th (ft)					69						174					
Internal Link Dist (ft)		421			236			303			336					
Turn Bay Length (ft)																
Base Capacity (vph)					1450						1809					
Starvation Cap Reductn					332						0					
Spillback Cap Reductn					0						0					
Storage Cap Reductn					0						0					
Reduced v/c Ratio					0.73						0.39					

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:, Start of Green  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated

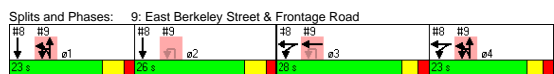


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑						↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)					4.0						4.0	
Lane Util. Factor					0.95						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.93	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					3095						3999	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					3095						3999	
Volume (vph)	0	0	0	140	615	0	0	0	0	0	300	285
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	151	661	0	0	0	0	0	361	343
RTOR Reduction (vph)	0	0	0	20	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	792	0	0	0	0	0	704	0
Confl. Peds. (#/hr)											6	
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	7%	7%	7%
Turn Type				Split								
Protected Phases				3.4	3.4						1.2	
Permitted Phases												
Actuated Green, G (s)					45.8						43.2	
Effective Green, g (s)					46.8						45.2	
Actuated g/C Ratio					0.47						0.45	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1448						1808	
v/s Ratio Prot					c0.26						c0.18	
v/s Ratio Perm												
v/c Ratio					0.55						0.39	
Uniform Delay, d1					19.0						18.2	
Progression Factor					0.38						1.07	
Incremental Delay, d2					0.2						0.6	
Delay (s)					7.5						20.0	
Level of Service					A						C	
Approach Delay (s)	0.0				7.5			0.0			20.0	
Approach LOS	A				A			A			C	

**Intersection Summary**  
 HCM Average Control Delay: 13.3 HCM Level of Service: B  
 HCM Volume to Capacity ratio: 0.47  
 Actuated Cycle Length (s): 100.0 Sum of lost time (s): 8.0  
 Intersection Capacity Utilization: 43.9% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø4
Lane Configurations	← → ↖ ↗			← → ↖ ↗			← → ↖ ↗			← → ↖ ↗					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0	0	0	0	200	0	0	0	0	0	0	0			
Storage Lanes	0	0	0	0	2	1	0	0	0	0	0	0			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Leading Detector (ft)					50										
Trailing Detector (ft)					0										
Turning Speed (mph)	15		9	15		9	9	15		9	15				
Right Turn on Red	Yes			No			Yes			No					
Link Speed (mph)	30			30			30			30					
Link Distance (ft)	316			383			366			432					
Travel Time (s)	7.2			8.7			8.3			9.8					
Volume (vph)	0	0	0	0	410	80	30	345	525	140	0	0			
Confl. Peds. (#/hr)					8										
Confl. Bikes (#/hr)					5										
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.93	0.93	0.93	0.92	0.92			
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	7%	7%	7%	2%	2%			
Lane Group Flow (vph)	0	0	0	0	545	0	0	404	716	0	0	0			
Turn Type					custom				Split						
Protected Phases					3				1 4 1 4				1	2	4
Permitted Phases					2 3										
Detector Phases					3				1 4 1 4						
Minimum Initial (s)					8.0								11.0	18.0	8.0
Minimum Split (s)					25.0								22.0	26.0	23.0
Total Split (s)	0.0	0.0	0.0	0.0	28.0	0.0	46.0	46.0	46.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	28.0%	0.0%	46.0%	46.0%	46.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yellow Time (s)					3.0								4.0	4.0	3.0
All-Red Time (s)					2.0								2.0	2.0	2.0
Lead/Lag					Lead				Lead				Lag	Lag	Lag
Lead-Lag Optimize?					Yes				Yes				Yes	Yes	Yes
Recall Mode					None								Max	C-Max	None
v/c Ratio					0.54				0.50				0.60		
Control Delay					35.5				5.4				25.1		
Queue Delay					0.0				0.0				0.0		
Total Delay					35.5				5.4				25.1		
Queue Length 50th (ft)					110				13				190		
Queue Length 95th (ft)					148				83				254		
Internal Link Dist (ft)	236			303						286			352		
Turn Bay Length (ft)															
Base Capacity (vph)					1026				800				1189		
Starvation Cap Reductn	0														
Spillover Cap Reductn	0														
Storage Cap Reductn	0														
Reduced v/c Ratio					0.53				0.51				0.60		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:, Start of Green  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø4
Lane Configurations	← → ↖ ↗			← → ↖ ↗			← → ↖ ↗			← → ↖ ↗					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Total Lost time (s)	4.0			4.0			4.0			4.0					
Lane Util. Factor	0.91			0.91			0.91			0.91					
Frpb, ped/bikes	1.00			1.00			1.00			1.00					
Flpb, ped/bikes	1.00			1.00			1.00			1.00					
Fit	0.98			1.00			0.97			1.00					
Fit Protected	1.00			0.95			1.00			1.00					
Satd. Flow (prot)	4275			1387			2817			1387					
Fit Permitted	1.00			0.95			1.00			1.00					
Satd. Flow (perm)	4275			1387			2817			1387					
Volume (vph)	0	0	0	0	410	80	30	345	525	140	0	0			
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.93	0.93	0.93	0.92	0.92			
Adj. Flow (vph)	0	0	0	0	456	89	33	371	565	151	0	0			
RTOR Reduction (vph)	0	0	0	0	0	0	0	214	0	0	0	0			
Lane Group Flow (vph)	0	0	0	0	545	0	0	190	716	0	0	0			
Confl. Peds. (#/hr)					8										
Confl. Bikes (#/hr)					5										
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	7%	7%	7%	2%	2%			
Turn Type					custom				Split						
Protected Phases					3				1 4 1 4						
Permitted Phases					2 3										
Detector Phases					3				1 4 1 4						
Actuated Green, G (s)					22.8				40.2				40.2		
Effective Green, g (s)					23.8				42.2				42.2		
Actuated g/C Ratio					0.24				0.42				0.42		
Clearance Time (s)	5.0														
Vehicle Extension (s)	2.0														
Lane Grp Cap (vph)	1017			585			1189								
v/s Ratio Prot	c0.13			0.14			c0.25								
v/s Ratio Perm				0.54			0.32			0.60					
Uniform Delay, d1	33.3			19.4			22.4								
Progression Factor	1.00			1.00			1.00								
Incremental Delay, d2	0.3			0.1			0.6								
Delay (s)	33.5			19.5			23.0								
Level of Service	C			B			C								
Approach Delay (s)	0.0			33.5			21.7			0.0					
Approach LOS	A			C			C			A					

**Intersection Summary**  
 HCM Average Control Delay: 25.6  
 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.58  
 Actuated Cycle Length (s): 100.0  
 Sum of lost time (s): 34.0  
 Intersection Capacity Utilization: 40.5%  
 ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lanes, Volumes, Timings

12: Traveler Street & Washington Street

10995.00 :: Boston Herald Redevelopment  
2016 No-Build Conditions :: Saturday Midday Peak

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50	
Trailing Detector (ft)	0	0			0	
Turning Speed (mph)	15	9		9	15	
Right Turn on Red	Yes		Yes			
Link Speed (mph)	25		25			30
Link Distance (ft)	443		416			298
Travel Time (s)	12.1		11.3			6.8
Volume (vph)	0	290	385	0	0	15
Peak Hour Factor	1.00	1.00	0.92	0.92	0.70	0.70
Heavy Vehicles (%)	2%	2%	6%	6%	100%	100%
Lane Group Flow (vph)	0	290	418	0	0	21
Turn Type	custom					
Protected Phases	5		1			1
Permitted Phases	1					
Detector Phases	5		1			1
Minimum Initial (s)	8.0		10.0			10.0
Minimum Split (s)	28.0		28.0			28.0
Total Split (s)	0.0	36.0	44.0	0.0	0.0	44.0
Total Split (%)	0.0%	45.0%	55.0%	0.0%	0.0%	55.0%
Yellow Time (s)	3.0		3.0			3.0
All-Red Time (s)	1.0		1.0			1.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	C-Max			C-Max	
v/c Ratio	0.20	0.13			0.03	
Control Delay	0.2	3.5			4.3	
Queue Delay	0.0	0.0			0.0	
Total Delay	0.2	3.5			4.3	
Queue Length 50th (ft)	0	11			2	
Queue Length 95th (ft)	m0	44			10	
Internal Link Dist (ft)	363		336			218
Turn Bay Length (ft)						
Base Capacity (vph)	1450	3336			648	
Starvation Cap Reductn	0	0			0	
Spillback Cap Reductn	0	0			0	
Storage Cap Reductn	0	0			0	
Reduced v/c Ratio	0.20	0.13			0.03	

Intersection Summary

Area Type: CBD

Cycle Length: 80

Actuated Cycle Length: 80

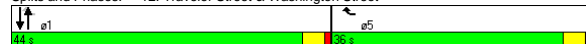
Offset: 6 (8%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Traveler Street & Washington Street



HCM Signalized Intersection Capacity Analysis

12: Traveler Street & Washington Street

10995.00 :: Boston Herald Redevelopment  
2016 No-Build Conditions :: Saturday Midday Peak

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor	1.00	0.91				1.00
Fr	0.86	1.00				1.00
Flt Protected	1.00	1.00				1.00
Satd. Flow (prot)	1450	4404				855
Flt Permitted	1.00	1.00				1.00
Satd. Flow (perm)	1450	4404				855
Volume (vph)	0	290	385	0	0	15
Peak-hour factor, PHF	1.00	1.00	0.92	0.92	0.70	0.70
Adj. Flow (vph)	0	290	418	0	0	21
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	290	418	0	0	21
Heavy Vehicles (%)	2%	2%	6%	6%	100%	100%
Turn Type	custom					
Protected Phases	5		1			1
Permitted Phases	1					
Actuated Green, G (s)	72.0		60.6			60.6
Effective Green, g (s)	72.0		60.6			60.6
Actuated g/C Ratio	0.90		0.76			0.76
Clearance Time (s)	4.0		4.0			4.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1450		3336			648
v/s Ratio Prot	c0.03		0.09			0.02
v/s Ratio Perm	0.17					
v/c Ratio	0.20		0.13			0.03
Uniform Delay, d1	0.5		2.6			2.4
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.0		0.1			0.1
Delay (s)	0.5		2.7			2.5
Level of Service	A		A			A
Approach Delay (s)	0.5		2.7			2.5
Approach LOS	A		A			A

Intersection Summary

HCM Average Control Delay 1.8 HCM Level of Service A

HCM Volume to Capacity ratio 0.20

Actuated Cycle Length (s) 80.0 Sum of lost time (s) 0.0

Intersection Capacity Utilization 35.0% ICU Level of Service A

Analysis Period (min) 15

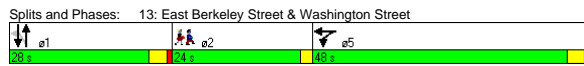
c Critical Lane Group

Lanes, Volumes, Timings  
13: East Berkeley Street & Washington Street

10995.00 :: Boston Herald Redevelopment  
2016 No-Build Conditions :: Saturday Midday Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0	0	0	0	0	0	80	0	0	0	0	
Storage Lanes	0	0	0	0	0	0	1	0	0	0	0	0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50		50	50		50			
Trailing Detector (ft)				0	0		0	0		0			
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			Yes		
Link Speed (mph)		25			30			25			30		
Link Distance (ft)		337			496			382			416		
Travel Time (s)		9.2			11.3			10.4			9.5		
Volume (vph)	0	0	0	100	570	115	95	270	0	0	15	0	
Confl. Peds. (#/hr)				106		94	81						
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.94	0.94	0.94	0.88	0.88	0.88	
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	6%	6%	6%	100%	100%	100%	
Lane Group Flow (vph)	0	0	0	0	818	0	101	287	0	0	17	0	
Turn Type				Split		Perm							
Protected Phases				5	5		1			1		2	
Permitted Phases							1						
Detector Phases				5	5		1	1			1		
Minimum Initial (s)				8.0	8.0		20.0	20.0		20.0		2.0	
Minimum Split (s)				25.0	25.0		24.0	24.0		24.0		24.0	
Total Split (s)	0.0	0.0	0.0	48.0	48.0	0.0	28.0	28.0	0.0	0.0	28.0	0.0	24.0
Total Split (%)	0.0%	0.0%	0.0%	48.0%	48.0%	0.0%	28.0%	28.0%	0.0%	0.0%	28.0%	0.0%	24%
Yellow Time (s)				3.0	3.0		3.0	3.0		3.0		2.0	
All-Red Time (s)				1.0	1.0		1.0	1.0		1.0		0.0	
Lead/Lag							Lead	Lead		Lead		Lag	
Lead-Lag Optimize?													
Recall Mode				None	None		C-Min	C-Min		C-Min		None	
v/c Ratio				0.81	0.81		0.17	0.32		0.04			
Control Delay				41.4	41.4		17.2	17.7		17.4			
Queue Delay				0.0	0.0		0.0	0.0		0.0			
Total Delay				41.4	41.4		17.2	17.7		17.4			
Queue Length 50th (ft)				173	173		37	116		6			
Queue Length 95th (ft)				202	202		82	208		21			
Internal Link Dist (ft)		257		416	416		302	302		336			
Turn Bay Length (ft)							80						
Base Capacity (vph)				1942	1942		599	891		472			
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				0.42	0.42		0.17	0.32		0.04			

Intersection Summary	
Area Type:	CBD
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	98 (98%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis  
13: East Berkeley Street & Washington Street

10995.00 :: Boston Herald Redevelopment  
2016 No-Build Conditions :: Saturday Midday Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)												
Lane Util. Factor												
Frbp, ped/bikes												
Flpb, ped/bikes												
Frt												
Fit Protected												
Satd. Flow (prot)												
Fit Permitted												
Satd. Flow (perm)												
Volume (vph)	0	0	0	100	570	115	95	270	0	0	15	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.94	0.94	0.94	0.88	0.88	0.88
Adj. Flow (vph)	0	0	0	104	594	120	101	287	0	0	17	0
RTOR Reduction (vph)	0	0	0	0	33	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	785	0	101	287	0	0	17	0
Confl. Peds. (#/hr)				106		94	81					
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	6%	6%	6%	100%	100%	100%
Turn Type				Split		Perm						
Protected Phases				5	5		1			1		1
Permitted Phases							1					
Actuated Green, G (s)							22.4	54.4	54.4		54.4	
Effective Green, g (s)							22.4	54.4	54.4		54.4	
Actuated g/C Ratio							0.22	0.54	0.54		0.54	
Clearance Time (s)							4.0	4.0	4.0		4.0	
Vehicle Extension (s)							3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)							967	626	877		465	
v/s Ratio Prot							c0.18		c0.18		0.02	
v/s Ratio Perm								0.09				
v/c Ratio							0.81	0.16	0.33		0.04	
Uniform Delay, d1							36.8	11.4	12.6		10.6	
Progression Factor							1.00	1.00	1.00		1.00	
Incremental Delay, d2							5.2	0.6	1.0		0.1	
Delay (s)							42.0	11.9	13.6		10.8	
Level of Service							D	B	B		B	
Approach Delay (s)		0.0					42.0		13.2		10.8	
Approach LOS		A					D		B		B	
Intersection Summary												
HCM Average Control Delay							32.5					C
HCM Volume to Capacity ratio							0.47					
Actuated Cycle Length (s)							100.0		Sum of lost time (s)		23.2	
Intersection Capacity Utilization							41.5%		ICU Level of Service		A	
Analysis Period (min)							15					
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis  
10: William E Mullins Way & Harrison Avenue

10995.00 :: Boston Herald Redevelopment  
2016 No-Build Conditions :: Saturday MIDDAY Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Volume (veh/h)	15	0	110	0	0	0	110	45	1	1	385	70
Peak Hour Factor	0.87	0.87	0.87	0.92	0.92	0.92	0.88	0.88	0.88	0.94	0.94	0.94
Hourly flow rate (vph)	17	0	126	0	0	0	125	51	1	1	410	74
Pedestrians	42			33			2			6		
Lane Width (ft)	12.0			12.0			12.0			12.0		
Walking Speed (ft/s)	4.0			4.0			4.0			4.0		
Percent Blockage	4			3			0			0		
Right turn flare (veh)	Raised			Raised			364			356		
Median type	1			1								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked	0.97	0.97	0.97	0.97	0.97		0.97					
vC, conflicting volume	773	826	286	670	863	65	526			85		
vC1, stage 1 conf vol	491	491		335	335							
vC2, stage 2 conf vol	282	335		335	528							
vCu, unblocked vol	737	793	237	632	830	65	484			85		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.2		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	82	100	100	100	88			100		
cM capacity (veh/h)	373	367	722	330	312	954	1009			1461		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>						
Volume Total	144	0	151	27	206	279						
Volume Left	17	0	125	0	1	0						
Volume Right	126	0	0	1	0	74						
cSH	649	1700	1009	1700	1461	1700						
Volume to Capacity	0.22	0.00	0.12	0.02	0.00	0.16						
Queue Length 95th (ft)	21	0	11	0	0	0						
Control Delay (s)	12.1	0.0	7.7	0.0	0.0	0.0						
Lane LOS	B	A	A		A							
Approach Delay (s)	12.1	0.0	6.6		0.0							
Approach LOS	B	A										
<b>Intersection Summary</b>												
Average Delay	3.6											
Intersection Capacity Utilization	45.1%		ICU Level of Service		A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
11: Boston Herald Back & Albany Street

10995.00 :: Boston Herald Redevelopment  
2016 No-Build Conditions :: Saturday MIDDAY Peak



Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations	↕			↕			↕			
Sign Control	Stop			Free			Free			Stop
Grade	0%			0%			0%			0%
Volume (veh/h)	0	1	0	0	0	665	1165	1	0	0
Peak Hour Factor	0.25	0.25	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	4	0	0	0	693	1214	1	0	0
Pedestrians	4									
Lane Width (ft)	12.0									
Walking Speed (ft/s)	4.0									
Percent Blockage	0									
Right turn flare (veh)	None									None
Median type										
Median storage (veh)										
Upstream signal (ft)				557		158				
pX, platoon unblocked	0.86	0.86	0.86						0.86	
vC, conflicting volume	2603	2603	1219			0		2604	0	
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	2537	2537	921			0		2538	0	
tC, single (s)	7.5	6.5	4.1			4.2		6.5	6.9	
tC, 2 stage (s)										
tF (s)	3.5	4.0	2.2			2.3		4.0	3.3	
p0 queue free %	100	70	100			57		100	100	
cM capacity (veh/h)	8	13	629			1593		13	1084	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>SB 1</b>	<b>SB 2</b>	<b>SB 3</b>						
Volume Total	4	996	607	304						
Volume Left	0	693	0	0						
Volume Right	0	0	0	1						
cSH	13	1593	1700	1700						
Volume to Capacity	0.30	0.43	0.36	0.18						
Queue Length 95th (ft)	19	57	0	0						
Control Delay (s)	364.8	7.7	0.0	0.0						
Lane LOS	F	A								
Approach Delay (s)	364.8	4.0								
Approach LOS	F									
<b>Intersection Summary</b>										
Average Delay	4.8									
Intersection Capacity Utilization	50.9%		ICU Level of Service		A					
Analysis Period (min)	15									



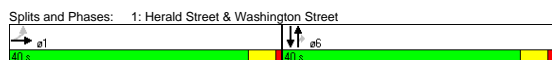
# 2016 Build Conditions

Lanes, Volumes, Timings  
1: Herald Street & Washington Street

10995.00 :: Boston Herald Redevelopment  
2016 Full Build Conditions :: Weekday Morning Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR													
Lane Configurations																									
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900													
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0													
Leading Detector (ft)	50	50						50	50	50															
Trailing Detector (ft)	0	0						0	0	0															
Turning Speed (mph)	15		9	15		9	15		9	15		9													
Right Turn on Red	<table border="0"> <tr> <td>No</td> <td colspan="2">Yes</td> <td colspan="2">Yes</td> <td colspan="2">Yes</td> <td colspan="2">Yes</td> <td colspan="2">Yes</td> <td colspan="2">Yes</td> </tr> </table>												No	Yes		Yes		Yes		Yes		Yes		Yes	
No	Yes		Yes		Yes		Yes		Yes		Yes														
Link Speed (mph)	30			30			30			30															
Link Distance (ft)	376			399			334			464															
Travel Time (s)	8.5			9.1			7.6			10.5															
Volume (vph)	65	895	0	0	0	0	0	640	50	35	0	20													
Confl. Peds. (#/hr)	9		16					102	102																
Confl. Bikes (#/hr)	1																								
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.89	0.89	0.89	0.59	0.59	0.59													
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	8%	8%	8%	100%	100%	100%													
Bus Blockages (#/hr)	0	9	9	0	0	0	0	0	0	0	0	0													
Lane Group Flow (vph)	0	1021	0	0	0	0	0	719	39	0	34	0													
Turn Type	Perm						Perm																		
Protected Phases	1						6																		
Permitted Phases	1						6																		
Detector Phases	1						6																		
Minimum Initial (s)	12.0		12.0		12.0		12.0		12.0		12.0														
Minimum Split (s)	31.0		31.0		31.0		31.0		31.0		31.0														
Total Split (s)	40.0	40.0	0.0	0.0	0.0	0.0	0.0	40.0	40.0	0.0	40.0	0.0													
Total Split (%)	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	50.0%	0.0%													
Yellow Time (s)	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														
Lead/Lag																									
Recall Mode	Max	Max	C-Max						C-Max	C-Max	C-Max														
v/c Ratio	0.53		0.53		0.07		0.09																		
Control Delay	17.2		18.2		4.9		13.5																		
Queue Delay	0.0		0.0		0.0		0.0																		
Total Delay	17.2		18.2		4.9		13.5																		
Queue Length 50th (ft)	129		136		1		9																		
Queue Length 95th (ft)	168		171		m13		17																		
Internal Link Dist (ft)	296		319		254		384																		
Turn Bay Length (ft)																									
Base Capacity (vph)	1915						1354		545		385														
Starvation Cap Reductn	0																								
Spillback Cap Reductn	0																								
Storage Cap Reductn	0																								
Reduced v/c Ratio	0.53		0.53		0.07		0.09																		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 45 (56%), Referenced to phase 6:NBSB, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 m Volume for 95th percentile queue is metered by upstream signal.



HCM Signalized Intersection Capacity Analysis  
1: Herald Street & Washington Street

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0											
Lane Util. Factor	0.91			1.00			0.86			1.00		
Frpb, ped/bikes	1.00			1.00			0.86			1.00		
Flpb, ped/bikes	1.00			1.00			1.00			1.00		
Frt	1.00			1.00			0.85			1.00		
Flt Protected	1.00			1.00			1.00			1.00		
Satd. Flow (prot)	4253			3008			1164			855		
Flt Permitted	1.00			1.00			1.00			1.00		
Satd. Flow (perm)	4253			3008			1164			855		
Volume (vph)	65	895	0	0	0	0	0	640	35	0	20	0
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.89	0.89	0.89	0.59	0.59	0.59
Adj. Flow (vph)	69	952	0	0	0	0	0	719	39	0	34	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	21	0	0	0
Lane Group Flow (vph)	0	1021	0	0	0	0	0	719	18	0	34	0
Confl. Peds. (#/hr)	9		16					102	102			
Confl. Bikes (#/hr)	1											
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	8%	8%	8%	100%	100%	100%
Bus Blockages (#/hr)	0	9	9	0	0	0	0	0	0	0	0	0
Turn Type	Perm						Perm					
Protected Phases	1						6					
Permitted Phases	1						6					
Actuated Green, G (s)	35.0		35.0		35.0		35.0		35.0		35.0	
Effective Green, g (s)	36.0		36.0		36.0		36.0		36.0		36.0	
Actuated g/C Ratio	0.45		0.45		0.45		0.45		0.45		0.45	
Clearance Time (s)	5.0		5.0		5.0		5.0		5.0		5.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	1914			1354			524		385			
v/s Ratio Prot	c0.24			0.02			0.04					
v/s Ratio Perm	0.24			0.02			0.09					
v/c Ratio	0.53		0.53		0.03		0.09					
Uniform Delay, d1	15.9		15.9		12.3		12.6					
Progression Factor	1.00		1.03		1.02		1.00					
Incremental Delay, d2	1.1		1.5		0.1		0.5					
Delay (s)	17.0		17.8		12.6		13.1					
Level of Service	B		B		B		B					
Approach Delay (s)	17.0		17.6		13.1							
Approach LOS	B		A		B							

**Intersection Summary**  
 HCM Average Control Delay: 17.2 HCM Level of Service: B  
 HCM Volume to Capacity ratio: 0.53  
 Actuated Cycle Length (s): 80.0 Sum of lost time (s): 8.0  
 Intersection Capacity Utilization: 47.0% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations	↑↑			←			←			↑↑			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50									50	50	50	
Trailing Detector (ft)	0									0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red	Yes			Yes			Yes			No			Yes
Link Speed (mph)	30			30			30			30			
Link Distance (ft)	399			540			356			340			
Travel Time (s)	9.1			12.3			8.1			7.7			
Volume (vph)	0	775	155	0	0	0	0	0	60	95	160	0	
Confl. Bikes (#/hr)	1												
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96	0.73	0.73	0.73	
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	3%	3%	3%	21%	21%	21%	
Parking (#/hr)	2												
Lane Group Flow (vph)	0	968	0	0	0	0	0	0	62	130	219	0	
Turn Type	custom custom												
Protected Phases	1									3 3 4			2
Permitted Phases							4 4						
Detector Phases	1						4 3 3 4						
Minimum Initial (s)	1.0						8.0 8.0			4.0			
Minimum Split (s)	19.0						13.0 13.0			19.0			
Total Split (s)	0.0	35.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	13.0	26.0	0.0	19.0
Total Split (%)	0.0%	43.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.3%	16.3%	32.5%	0.0%	24%
Yellow Time (s)	4.0						4.0 4.0			4.0			
All-Red Time (s)	1.0						1.0 1.0			1.0			
Lead/Lag	Lag						Lag Lead			Lead			
Lead-Lag Optimize?	Yes						Yes Yes			Yes			
Recall Mode	Max						Max Max			Max			
v/c Ratio	0.57						0.07 0.35 0.30						
Control Delay	19.6						0.1 26.6 24.2						
Queue Delay	0.0						0.0 0.0 0.0						
Total Delay	19.6						0.1 26.6 24.2						
Queue Length 50th (ft)	127						0 52 45						
Queue Length 95th (ft)	168						0 78 59						
Internal Link Dist (ft)	319			460			276			260			
Turn Bay Length (ft)													
Base Capacity (vph)	1686						923 369 738						
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	0.57						0.07 0.35 0.30						

Intersection Summary	
Area Type:	CBD
Cycle Length:	80
Actuated Cycle Length:	80
Natural Cycle:	65
Control Type:	Semi Act-Uncoord



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑			←			←			↑↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0									4.0 4.0 4.0		
Lane Util. Factor	0.91									0.88 1.00 0.95		
Frpb, ped/bikes	1.00									0.99 1.00 1.00		
Flpb, ped/bikes	1.00									1.00 1.00 1.00		
Frt	0.98									0.85 1.00 1.00		
Flt Protected	1.00									1.00 0.95 1.00		
Satd. Flow (prot)	4254									2314 1343 2685		
Flt Permitted	1.00									1.00 0.95 1.00		
Satd. Flow (perm)	4254									2314 1343 2685		
Volume (vph)	0	775	155	0	0	0	0	0	60	95	160	0
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96	0.73	0.73	0.73
Adj. Flow (vph)	0	807	161	0	0	0	0	0	62	130	219	0
RTOR Reduction (vph)	0	37	0	0	0	0	0	0	55	0	0	0
Lane Group Flow (vph)	0	931	0	0	0	0	0	0	7	130	219	0
Confl. Bikes (#/hr)	1											
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	3%	3%	3%	21%	21%	21%
Parking (#/hr)	2											
Turn Type	custom custom											
Protected Phases	1									3 3 4		
Permitted Phases							4 4					
Actuated Green, G (s)	30.0									8.0 16.0 21.0		
Effective Green, g (s)	31.0									9.0 18.0 22.0		
Actuated g/C Ratio	0.39									0.11 0.22 0.28		
Clearance Time (s)	5.0									5.0 5.0		
Vehicle Extension (s)	3.0									2.0 2.0		
Lane Grp Cap (vph)	1648									260 369 738		
v/s Ratio Prot	c0.22									c0.04 0.08		
v/s Ratio Perm										0.00 0.06		
v/c Ratio	0.56									0.03 0.35 0.30		
Uniform Delay, d1	19.2									31.6 26.6 22.9		
Progression Factor	1.00									1.00 1.00 1.00		
Incremental Delay, d2	1.4									0.2 2.6 1.0		
Delay (s)	20.6									31.8 29.2 23.9		
Level of Service	C									C C C		
Approach Delay (s)	20.6			0.0			31.8			25.9		
Approach LOS	C			A			C			C		

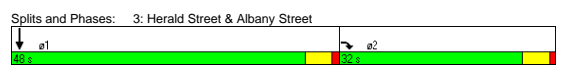
Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c	Critical Lane Group		

Lanes, Volumes, Timings  
3: Herald Street & Albany Street

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50			50	
Trailing Detector (ft)		0			0	
Turning Speed (mph)	15	9	15			9
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	540			158	348	
Travel Time (s)	12.3			3.6	7.9	
Volume (vph)	0	930	0	0	1410	0
Peak Hour Factor	0.90	0.90	0.92	0.92	0.95	0.95
Heavy Vehicles (%)	7%	7%	2%	2%	9%	9%
Lane Group Flow (vph)	0	1033	0	0	1484	0
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Detector Phases	2		1			
Minimum Initial (s)	8.0		8.0			
Minimum Split (s)	23.0		23.0			
Total Split (s)	0.0	32.0	0.0	0.0	48.0	0.0
Total Split (%)	0.0%	40.0%	0.0%	0.0%	60.0%	0.0%
Yellow Time (s)	4.0		4.0			
All-Red Time (s)	1.0		1.0			
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	Max		C-Max			
v/c Ratio	0.95		0.63			
Control Delay	45.0		13.9			
Queue Delay	0.0		0.0			
Total Delay	45.0		13.9			
Queue Length 50th (ft)	217		173			
Queue Length 95th (ft)	#327		219			
Internal Link Dist (ft)	460		78		268	
Turn Bay Length (ft)						
Base Capacity (vph)	1084		2356			
Starvation Cap Reductn	0		0			
Spillback Cap Reductn	0		0			
Storage Cap Reductn	0		0			
Reduced v/c Ratio	0.95		0.63			

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 19 (24%), Referenced to phase 1:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



HCM Signalized Intersection Capacity Analysis  
3: Herald Street & Albany Street

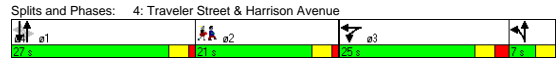
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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			
Lane Util. Factor	0.76		0.91			
Frt	0.85		1.00			
Flt Protected	1.00		1.00			
Satd. Flow (prot)	3097		4283			
Flt Permitted	1.00		1.00			
Satd. Flow (perm)	3097		4283			
Volume (vph)	0	930	0	0	1410	0
Peak-hour factor, PHF	0.90	0.90	0.92	0.92	0.95	0.95
Adj. Flow (vph)	0	1033	0	0	1484	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	1033	0	0	1484	0
Heavy Vehicles (%)	7%	7%	2%	2%	9%	9%
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Actuated Green, G (s)	27.0		43.0			
Effective Green, g (s)	28.0		44.0			
Actuated g/C Ratio	0.35		0.55			
Clearance Time (s)	5.0		5.0			
Vehicle Extension (s)	2.0		2.0			
Lane Grp Cap (vph)	1084		2356			
v/s Ratio Prot	c0.33		c0.35			
v/s Ratio Perm						
v/c Ratio	0.95		0.63			
Uniform Delay, d1	25.4		12.4			
Progression Factor	1.00		1.00			
Incremental Delay, d2	18.1		1.3			
Delay (s)	43.5		13.7			
Level of Service	D		B			
Approach Delay (s)	43.5		0.0		13.7	
Approach LOS	D		A		B	

**Intersection Summary**  
 HCM Average Control Delay: 25.9  
 HCM Volume to Capacity ratio: 0.76  
 Actuated Cycle Length (s): 80.0  
 Intersection Capacity Utilization: 61.0%  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations					↔			↔			↔		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50		50	50		50	50		
Trailing Detector (ft)				0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			Yes		No
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		438			343			372			197		
Travel Time (s)		10.0			7.8			8.5			4.5		
Volume (vph)	0	0	0	50	70	110	145	195	155	90	215	30	
Confl. Bikes (#/hr)						1			4				4
Peak Hour Factor	0.92	0.92	0.92	0.86	0.86	0.86	0.92	0.92	0.84	0.84	0.84	0.84	
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	5%	5%	5%	11%	11%	11%	
Lane Group Flow (vph)	0	0	0	0	267	0	0	538	0	0	399	0	
Turn Type				Split		D.P+P			Perm				
Protected Phases				3	3		4	14			1		2
Permitted Phases							1			1			
Detector Phases				3	3		4	14		1	1		
Minimum Initial (s)				7.0	7.0		4.0			7.0	7.0		2.0
Minimum Split (s)				21.0	21.0		7.0			20.0	20.0		21.0
Total Split (s)	0.0	0.0	0.0	25.0	25.0	0.0	7.0	34.0	0.0	27.0	27.0	0.0	21.0
Total Split (%)	0.0%	0.0%	0.0%	31.3%	31.3%	0.0%	8.8%	42.5%	0.0%	33.8%	33.8%	0.0%	26%
Yellow Time (s)				3.0	3.0		3.0			3.0	3.0		3.0
All-Red Time (s)				2.0	2.0		0.0			1.0	1.0		1.0
Lead/Lag				Lead	Lead		Lag			Lead	Lead		Lag
Lead-Lag Optimize?				Yes	Yes		Yes			Yes	Yes		Yes
Recall Mode				Max	Max		Max			C-Max	C-Max		None
v/c Ratio				0.21			0.72			0.76			
Control Delay				10.5			24.6			37.1			
Queue Delay				0.0			0.0			0.2			
Total Delay				10.5			24.6			37.2			
Queue Length 50th (ft)							17			84			95
Queue Length 95th (ft)							54			129			135
Internal Link Dist (ft)			358			263			292			117	
Turn Bay Length (ft)													
Base Capacity (vph)							1249			744			526
Starvation Cap Reductn							0			0			0
Spillback Cap Reductn							0			0			5
Storage Cap Reductn							0			0			0
Reduced v/c Ratio							0.21			0.72			0.77

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 48 (60%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔			↔			↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0			4.0			4.0	
Lane Util. Factor					0.95			0.95			0.95	
Frpb, ped/bikes					0.99			0.99			1.00	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.93			0.95			0.99	
Flt Protected					0.99			0.99			0.99	
Satd. Flow (prot)					2797			2884			2843	
Flt Permitted					0.99			0.67			0.61	
Satd. Flow (perm)					2797			1961			1759	
Volume (vph)	0	0	0	50	70	110	145	195	155	90	215	30
Peak-hour factor, PHF	0.92	0.92	0.92	0.86	0.86	0.86	0.92	0.92	0.84	0.84	0.84	0.84
Adj. Flow (vph)	0	0	0	58	81	128	158	212	168	107	256	36
RTOR Reduction (vph)	0	0	0	0	74	0	0	68	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	193	0	0	470	0	0	399	0
Confl. Bikes (#/hr)						1			4			4
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	5%	5%	5%	11%	11%	11%
Turn Type				Split		D.P+P			Perm			
Protected Phases				3	3		4	14			1	
Permitted Phases							1			1		
Actuated Green, G (s)							32.6			24.6		20.6
Effective Green, g (s)							33.6			23.6		20.6
Actuated g/C Ratio							0.42			0.30		0.26
Clearance Time (s)							5.0			1.0		4.0
Vehicle Extension (s)							2.0					2.0
Lane Grp Cap (vph)							1175			613		453
v/s Ratio Prot							c0.07			c0.03		
v/s Ratio Perm										0.20		c0.23
v/c Ratio							0.16			0.77		0.88
Uniform Delay, d1							14.5			25.7		28.5
Progression Factor							1.00			1.00		1.00
Incremental Delay, d2							0.3			8.9		21.1
Delay (s)							14.8			34.6		49.6
Level of Service							C			D		D
Approach Delay (s)		0.0					14.8			34.6		49.6
Approach LOS		A					B			C		D

**Intersection Summary**  
 HCM Average Control Delay: 35.1 HCM Level of Service: D  
 HCM Volume to Capacity ratio: 0.45  
 Actuated Cycle Length (s): 80.0 Sum of lost time (s): 22.8  
 Intersection Capacity Utilization: 44.5% ICU Level of Service: A  
 Analysis Period (min): 15  
 Critical Lane Group

Lanes, Volumes, Timings  
5: Traveler Street & Albany Street

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2016 Full Build Conditions :: Weekday Morning Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations		↕								↕	↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50									50	50		
Trailing Detector (ft)	0									0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes	Yes		Yes		No
Link Speed (mph)		30			30			30		30		30	
Link Distance (ft)		170			322			416		557		557	
Travel Time (s)		3.9			7.3			9.5		12.7		12.7	
Volume (vph)	0	200	100	0	0	0	0	0	0	735	790	255	
Confl. Bikes (#/hr)		5											
Peak Hour Factor	0.74	0.74	0.74	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94	
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	2%	2%	2%	7%	7%	7%	
Lane Group Flow (vph)	0	405	0	0	0	0	0	0	0	766	1127	0	
Turn Type										Split			
Protected Phases		3								1	1		2
Permitted Phases													
Detector Phases		3								1	1		
Minimum Initial (s)		8.0								10.0	10.0		4.0
Minimum Split (s)		24.0								24.0	24.0		19.0
Total Split (s)	0.0	36.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	65.0	65.0	0.0	19.0
Total Split (%)	0.0%	30.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	54.2%	54.2%	0.0%	16%
Yellow Time (s)		4.0								4.0	4.0		4.0
All-Red Time (s)		1.0								1.0	1.0		1.0
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?										Yes	Yes		Yes
Recall Mode		None								C-Max	C-Max		None
v/c Ratio		0.80								0.66	0.54		
Control Delay		51.4								6.3	10.1		
Queue Delay		0.0								0.4	0.0		
Total Delay		51.4								6.7	10.1		
Queue Length 50th (ft)		133								43	152		
Queue Length 95th (ft)		136								319	421		
Internal Link Dist (ft)		90			242			336			477		
Turn Bay Length (ft)													
Base Capacity (vph)		796								1164	2076		
Starvation Cap Reductn		0								98	0		
Spillback Cap Reductn		0								0	0		
Storage Cap Reductn		0								0	0		
Reduced v/c Ratio		0.51								0.72	0.54		

Intersection Summary

Area Type: CBD  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 116 (97%), Referenced to phase 1:SBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated

Splits and Phases: 5: Traveler Street & Albany Street



HCM Signalized Intersection Capacity Analysis  
5: Traveler Street & Albany Street

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕								↕	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95									0.91	0.91	
Frpb, ped/bikes	0.99									1.00	1.00	
Flpb, ped/bikes	1.00									1.00	1.00	
Frt	0.95									1.00	0.96	
Flt Protected	1.00									0.95	1.00	
Satd. Flow (prot)	2788									1382	2802	
Flt Permitted	1.00									0.95	1.00	
Satd. Flow (perm)	2788									1382	2802	
Volume (vph)	0	200	100	0	0	0	0	0	0	735	790	255
Peak-hour factor, PHF	0.74	0.74	0.74	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	270	135	0	0	0	0	0	0	782	840	271
RTOR Reduction (vph)	0	60	0	0	0	0	0	0	0	158	1	0
Lane Group Flow (vph)	0	345	0	0	0	0	0	0	0	608	1126	0
Confl. Bikes (#/hr)		5										
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	2%	2%	2%	7%	7%	7%
Turn Type										Split		
Protected Phases		3								1	1	
Permitted Phases												
Actuated Green, G (s)		18.3								83.9	83.9	
Effective Green, g (s)		19.3								84.9	84.9	
Actuated g/C Ratio		0.16								0.71	0.71	
Clearance Time (s)		5.0								5.0	5.0	
Vehicle Extension (s)		2.0								2.0	2.0	
Lane Grp Cap (vph)		448								978	1982	
v/s Ratio Prot		c0.12								c0.44	0.40	
v/s Ratio Perm												
v/c Ratio		0.77								0.62	0.57	
Uniform Delay, d1		48.2								9.2	8.6	
Progression Factor		1.00								1.00	1.00	
Incremental Delay, d2		7.3								3.0	1.2	
Delay (s)		55.6								12.1	9.8	
Level of Service		E								B	A	
Approach Delay (s)		55.6			0.0			0.0			10.7	
Approach LOS		E			A			A			B	

Intersection Summary

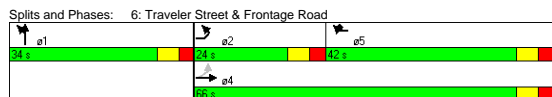
HCM Average Control Delay: 18.6, HCM Level of Service: B  
 HCM Volume to Capacity ratio: 0.65  
 Actuated Cycle Length (s): 120.0, Sum of lost time (s): 15.8  
 Intersection Capacity Utilization: 54.4%, ICU Level of Service: A  
 Analysis Period (min): 15  
 Critical Lane Group

Lanes, Volumes, Timings  
6: Traveler Street & Frontage Road

10995.00 :: Boston Herald Redevelopment  
2016 Full Build Conditions :: Weekday Morning Peak

Lane Group	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0
Turning Speed (mph)	15	15		9	9	15		9
Right Turn on Red	No			Yes				No
Link Speed (mph)			30				30	
Link Distance (ft)			322				432	
Travel Time (s)			7.3				9.8	
Volume (vph)	70	230	635	385	780	320	540	55
Confl. Peds. (#/hr)								4
Peak Hour Factor	0.95	0.95	0.95	0.91	0.91	0.98	0.98	0.98
Heavy Vehicles (%)	7%	7%	7%	3%	3%	10%	10%	10%
Lane Group Flow (vph)	0	316	668	423	857	327	607	0
Turn Type	Prot	Perm	custom	custom	Split			
Protected Phases	2	4	5	5	1	1		
Permitted Phases		4						
Detector Phases	2	4	4	5	5	1	1	
Minimum Initial (s)	10.0	10.0	10.0	8.0	8.0	10.0	10.0	
Minimum Split (s)	24.0	34.0	34.0	34.0	34.0	34.0	34.0	
Total Split (s)	24.0	66.0	66.0	42.0	42.0	34.0	34.0	0.0
Total Split (%)	24.0%	66.0%	66.0%	42.0%	42.0%	34.0%	34.0%	0.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead			Lag	Lag			
Lead-Lag Optimize?	Yes			Yes	Yes			
Recall Mode	Max	Max	Max	Max	Max	Max	Max	
v/c Ratio	0.34	0.35	0.90	1.17	0.38	0.48		
Control Delay	10.3	9.9	53.1	113.2	29.3	30.3		
Queue Delay	2.0	1.2	0.0	0.0	0.0	0.0		
Total Delay	12.4	11.1	53.1	113.2	29.3	30.3		
Queue Length 50th (ft)	89	100	284	526	84	115		
Queue Length 95th (ft)	139	134	#495	#763	124	152		
Internal Link Dist (ft)			242			352		
Turn Bay Length (ft)								
Base Capacity (vph)	941	1882	472	730	860	1253		
Starvation Cap Reductn	470	937	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0		
Reduced v/c Ratio	0.67	0.71	0.90	1.17	0.38	0.48		

Intersection Summary	
Area Type:	CBD
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
- 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.	



HCM Signalized Intersection Capacity Analysis  
6: Traveler Street & Frontage Road

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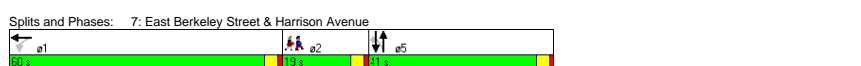
Movement	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.97	0.91		
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	1.00	0.85	0.85	1.00	0.99		
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1518	3036	1242	1411	2865	4179		
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1518	3036	1242	1411	2865	4179		
Volume (vph)	70	230	635	385	780	320	540	55
Peak-hour factor, PHF	0.95	0.95	0.95	0.91	0.91	0.98	0.98	0.98
Adj. Flow (vph)	74	242	668	423	857	327	551	56
RTOR Reduction (vph)	0	0	0	0	193	0	0	0
Lane Group Flow (vph)	0	316	668	423	664	327	607	0
Confl. Peds. (#/hr)								4
Heavy Vehicles (%)	7%	7%	7%	3%	3%	10%	10%	10%
Turn Type	Prot	Perm	custom	custom	Split			
Protected Phases	2	4	5	5	1	1		
Permitted Phases		4						
Actuated Green, G (s)	59.0	59.0	35.0	35.0	27.0	27.0		
Effective Green, g (s)	62.0	62.0	38.0	38.0	30.0	30.0		
Actuated g/C Ratio	0.62	0.62	0.38	0.38	0.30	0.30		
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		
Lane Grp Cap (vph)	941	1882	472	536	860	1254		
v/s Ratio Prot			c0.22	0.34	c0.47	0.11	c0.15	
v/s Ratio Perm		0.21						
v/c Ratio	0.34	0.35	0.90	1.24	0.38	0.48		
Uniform Delay, d1	9.1	9.3	29.1	31.0	27.7	28.7		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	1.0	0.5	22.3	122.4	1.3	1.3		
Delay (s)	10.1	9.8	51.4	153.4	28.9	30.0		
Level of Service	B	A	D	F	C	C		
Approach Delay (s)		9.9				29.6		
Approach LOS		A				C		

Intersection Summary			
HCM Average Control Delay	59.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations				↔↔↔	↔↔↔	↔↔↔		↔		↔	↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50		50	50		50	50		
Trailing Detector (ft)				0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		525			501			284			372		
Travel Time (s)		11.9			11.4			6.5			8.5		
Volume (vph)	0	0	0	185	1165	305	55	185	0	0	180	100	
Confl. Bikes (#/hr)					1							1	
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.80	0.80	0.80	0.81	0.81	0.81	
Heavy Vehicles (%)	2%	2%	2%	7%	7%	7%	4%	4%	4%	7%	7%	7%	
Bus Blockages (#/hr)	0	0	0	0	20	20	0	0	0	0	0	0	
Parking (#/hr)					1	1							
Lane Group Flow (vph)	0	0	0	0	1742	0	0	300	0	0	222	123	
Turn Type				Perm		Perm				Perm			
Protected Phases					1			5			5	2	
Permitted Phases				1				5			5		
Detector Phases				1	1			5			5	5	
Minimum Initial (s)				5.0	5.0		5.0	5.0		5.0	5.0	4.0	
Minimum Split (s)				22.0	22.0		20.0	20.0		20.0	20.0	19.0	
Total Split (s)	0.0	0.0	0.0	60.0	60.0	0.0	41.0	41.0	0.0	0.0	41.0	19.0	
Total Split (%)	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	34.2%	34.2%	0.0%	0.0%	34.2%	16%	
Yellow Time (s)				3.0	3.0		3.0	3.0		3.0	3.0	3.0	
All-Red Time (s)				1.0	1.0		1.0	1.0		1.0	1.0	1.0	
Lead/Lag				Lead	Lead						Lag		
Lead-Lag Optimize?				Yes	Yes						Yes		
Recall Mode				C-Max	C-Max		Max	Max		Max	Max	None	
v/c Ratio				0.90			0.68			0.37	0.21		
Control Delay				25.8			43.9			32.3	6.3		
Queue Delay				33.1			0.0			0.6	0.0		
Total Delay				58.9			43.9			32.9	6.3		
Queue Length 50th (ft)				456			215			138	0		
Queue Length 95th (ft)				m453			#283			188	32		
Internal Link Dist (ft)		445		421			204			292			
Turn Bay Length (ft)													
Base Capacity (vph)				1940			440			594	576		
Starvation Cap Reductn				310			0			135	0		
Spillback Cap Reductn				0			0			0	0		
Storage Cap Reductn				0			0			0	0		
Reduced v/c Ratio				1.07			0.68			0.48	0.21		

**Intersection Summary**

Area Type: CBD  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 71 (59%), Referenced to phase 1:WBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔↔	↔↔↔	↔↔↔		↔		↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor				0.91			1.00			1.00	1.00	
Frpb, ped/bikes				1.00			1.00			1.00	1.00	
Flpb, ped/bikes				1.00			1.00			1.00	1.00	
Frt				0.97			1.00			1.00	0.85	
Flt Protected				0.99			0.99			1.00	1.00	
Satd. Flow (prot)				4097			1455			1598	1341	
Flt Permitted				0.99			0.87			1.00	1.00	
Satd. Flow (perm)				4097			1284			1598	1341	
Volume (vph)	0	0	0	185	1165	305	55	185	0	0	180	100
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.80	0.80	0.80	0.81	0.81	0.81
Adj. Flow (vph)	0	0	0	195	1226	321	69	231	0	0	222	123
RTOR Reduction (vph)	0	0	0	31	0	0	0	0	0	0	0	77
Lane Group Flow (vph)	0	0	0	0	1711	0	0	300	0	0	222	46
Confl. Bikes (#/hr)					1						1	
Heavy Vehicles (%)	2%	2%	2%	7%	7%	7%	4%	4%	4%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	20	20	0	0	0	0	0	0
Parking (#/hr)					1	1						
Turn Type				Perm		Perm				Perm		
Protected Phases					1			5			5	
Permitted Phases				1				5			5	
Actuated Green, G (s)				54.4			44.6			44.6	44.6	
Effective Green, g (s)				54.4			44.6			44.6	44.6	
Actuated g/C Ratio				0.45			0.37			0.37	0.37	
Clearance Time (s)				4.0			4.0			4.0	4.0	
Vehicle Extension (s)				2.0			2.0			2.0	2.0	
Lane Grp Cap (vph)				1857			477			594	498	
v/s Ratio Prot										0.14		
v/s Ratio Perm				0.42			c0.23				0.03	
v/c Ratio				0.92			0.63			0.37	0.09	
Uniform Delay, d1				30.8			30.9			27.5	24.5	
Progression Factor				0.82			1.00			1.00	1.00	
Incremental Delay, d2				2.9			6.2			1.8	0.4	
Delay (s)				28.1			37.1			29.3	24.9	
Level of Service				C			D			C	C	
Approach Delay (s)	0.0			28.1			37.1			27.7		
Approach LOS	A			C			D			C		

**Intersection Summary**

HCM Average Control Delay: 29.2 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.79  
 Actuated Cycle Length (s): 120.0 Sum of lost time (s): 21.0  
 Intersection Capacity Utilization: 71.5% ICU Level of Service: C  
 Analysis Period (min): 15  
 c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø3	ø4
Lane Configurations					↑↑						↑↑					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Leading Detector (ft)				50	50						50					
Trailing Detector (ft)				0	0						0					
Turning Speed (mph)	15		9	15		9	15		9	15		9				
Right Turn on Red			Yes	Yes		Yes			Yes			No				
Link Speed (mph)		30			30			30			30					
Link Distance (ft)		501			316			383			416					
Travel Time (s)		11.4			7.2			8.7			9.5					
Volume (vph)	0	0	0	215	1345	0	0	0	0	0	555	335				
Confl. Peds. (#/hr)												7				
Peak Hour Factor	0.92	0.92	0.92	0.91	0.91	0.91	0.92	0.92	0.92	0.83	0.83	0.83				
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	8%	8%	8%				
Lane Group Flow (vph)	0	0	0	0	1714	0	0	0	0	0	1073	0				
Turn Type				Split												
Protected Phases		3.4	3.4							1.2			1	2	3	4
Permitted Phases																
Detector Phases				3.4	3.4					1.2						
Minimum Initial (s)													11.0	18.0	8.0	8.0
Minimum Split (s)													26.0	26.0	25.0	26.0
Total Split (s)	0.0	0.0	0.0	67.0	67.0	0.0	0.0	0.0	0.0	0.0	53.0	0.0	27.0	26.0	41.0	26.0
Total Split (%)	0.0%	0.0%	0.0%	55.8%	55.8%	0.0%	0.0%	0.0%	0.0%	0.0%	44.2%	0.0%	23%	22%	34%	22%
Yellow Time (s)													4.0	4.0	3.0	3.0
All-Red Time (s)													2.0	2.0	2.0	2.0
Lead/Lag													Lead	Lag	Lead	Lag
Lead-Lag Optimize?													Yes	Yes	Yes	Yes
Recall Mode													Max	C-Max	None	None
v/c Ratio					1.07						0.65					
Control Delay					51.8						28.9					
Queue Delay					118.3						0.5					
Total Delay					170.1						29.4					
Queue Length 50th (ft)					~775						252					
Queue Length 95th (ft)					m#823						227					
Internal Link Dist (ft)		421			236			303			336					
Turn Bay Length (ft)																
Base Capacity (vph)					1609						1649					
Starvation Cap Reductn					325						215					
Spillback Cap Reductn					48						99					
Storage Cap Reductn					0						0					
Reduced v/c Ratio					1.33						0.75					

**Intersection Summary**

Area Type: CBD

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 125

Control Type: Actuated-Coordinated

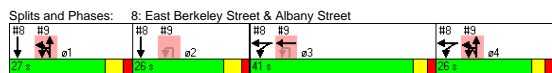
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



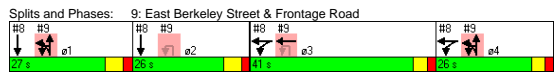
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑						↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)					4.0						4.0	
Lane Util. Factor					0.95						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.94	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					3044						4036	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					3044						4036	
Volume (vph)	0	0	0	215	1345	0	0	0	0	0	555	335
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.92	0.92	0.92	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	236	1478	0	0	0	0	0	669	404
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1704	0	0	0	0	0	1073	0
Confl. Peds. (#/hr)											7	
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	8%	8%	8%
Turn Type				Split								
Protected Phases				3.4	3.4						1.2	
Permitted Phases												
Actuated Green, G (s)					62.0						47.0	
Effective Green, g (s)					63.0						49.0	
Actuated g/C Ratio					0.52						0.41	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1598						1648	
v/s Ratio Prot					c0.56						c0.27	
v/s Ratio Perm												
v/c Ratio					1.07						0.65	
Uniform Delay, d1					28.5						28.6	
Progression Factor					0.56						0.94	
Incremental Delay, d2					34.3						1.7	
Delay (s)					50.1						28.6	
Level of Service					D						C	
Approach Delay (s)	0.0				50.1			0.0			28.6	
Approach LOS	A				D			A			C	

**Intersection Summary**

HCM Average Control Delay	41.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø4
Lane Configurations					↔	↔			↔	↔						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0	0	0	0	200	0	0	0	0	0	0	0	0			
Storage Lanes	0	0	0	0	2	1	0	0	0	0	0	0	0			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Leading Detector (ft)					50				50							
Trailing Detector (ft)					0				0							
Turning Speed (mph)	15		9	15		9		9	15		9	15		9		
Right Turn on Red		Yes			No		Yes		No		Yes					
Link Speed (mph)		30			30				30				30			
Link Distance (ft)		316			383				366				432			
Travel Time (s)		7.2			8.7				8.3				9.8			
Volume (vph)	0	0	0	0	990	185	140	570	730	220	0	0	0			
Confl. Peds. (#/hr)					9				4							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.92	0.92	0.92	0.92			
Heavy Vehicles (%)	2%	2%	2%	7%	7%	7%	2%	9%	9%	9%	2%	2%	2%			
Lane Group Flow (vph)	0	0	0	0	1277	0	0	761	1079	0	0	0	0			
Turn Type					custom			Split								
Protected Phases					3		1.4	1.4	1.4					1	2	4
Permitted Phases								2.3								
Detector Phases					3		1.4	1.4	1.4							
Minimum Initial (s)					8.0									11.0	18.0	8.0
Minimum Split (s)					25.0									26.0	26.0	26.0
Total Split (s)	0.0	0.0	0.0	0.0	41.0	0.0	53.0	53.0	53.0	0.0	0.0	0.0	0.0	27.0	26.0	26.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	34.2%	0.0%	44.2%	44.2%	44.2%	0.0%	0.0%	0.0%	0.0%	23%	22%	22%
Yellow Time (s)					3.0									4.0	4.0	3.0
All-Red Time (s)					2.0									2.0	2.0	2.0
Lead/Lag					Lead									Lead	Lag	Lag
Lead-Lag Optimize?					Yes									Yes	Yes	Yes
Recall Mode					None									Max	C-Max	None
w/c Ratio					0.98			0.96	0.96							
Control Delay					61.5			40.4	53.4							
Queue Delay					3.3			12.9	4.3							
Total Delay					64.8			53.3	57.7							
Queue Length 50th (ft)					358			367	439							
Queue Length 95th (ft)					#464			#695	#598							
Internal Link Dist (ft)		236			303			286			352					
Turn Bay Length (ft)																
Base Capacity (vph)					1306			795	1126							
Starvation Cap Reductn					0			0	0							
Spillover Cap Reductn					23			48	32							
Storage Cap Reductn					0			0	0							
Reduced w/c Ratio					1.00			1.02	0.99							

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:, Start of Green  
 Natural Cycle: 125  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔	↔			↔	↔			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0				4.0				4.0
Lane Util. Factor					0.91				0.91				0.91
Frpb, ped/bikes					0.99				1.00				1.00
Flpb, ped/bikes					1.00				1.00				1.00
Ft					0.98				1.00				0.97
Flt Protected					1.00				0.95				1.00
Satd. Flow (prot)					4237				1374				2755
Flt Permitted					1.00				0.95				1.00
Satd. Flow (perm)					4237				1374				2755
Volume (vph)	0	0	0	0	990	185	140	570	730	220	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1076	201	152	633	811	244	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	234	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1277	0	0	527	1078	0	0	0	0
Confl. Peds. (#/hr)					9				4				
Heavy Vehicles (%)	2%	2%	2%	7%	7%	7%	2%	9%	9%	9%	2%	2%	2%
Turn Type					custom			Split					
Protected Phases					3		1.4	1.4	1.4				
Permitted Phases								2.3					
Actuated Green, G (s)					36.0			47.0	47.0				
Effective Green, g (s)					37.0			49.0	49.0				
Actuated g/C Ratio					0.31			0.41	0.41				
Clearance Time (s)					5.0								
Vehicle Extension (s)					2.0								
Lane Grp Cap (vph)					1306			561	1125				
v/s Ratio Prot					c0.30			0.38	c0.39				
v/s Ratio Perm													
w/c Ratio					0.98			0.94	0.96				
Uniform Delay, d1					41.1			34.1	34.5				
Progression Factor					1.00			1.00	1.00				
Incremental Delay, d2					19.5			23.5	17.3				
Delay (s)					60.6			57.6	51.8				
Level of Service					E			E	D				
Approach Delay (s)		0.0			60.6			54.2			0.0		
Approach LOS		A			E			D			A		

**Intersection Summary**  
 HCM Average Control Delay: 56.8 HCM Level of Service: E  
 HCM Volume to Capacity ratio: 0.97  
 Actuated Cycle Length (s): 120.0 Sum of lost time (s): 34.0  
 Intersection Capacity Utilization: 68.1% ICU Level of Service: C  
 Analysis Period (min): 15  
 c Critical Lane Group

Lanes, Volumes, Timings

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12: Traveler Street & Washington Street

	↖	↗	↖	↗	↘	↙
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑↑			↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50			50
Trailing Detector (ft)		0	0			0
Turning Speed (mph)	15	9		9	15	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	25		25			30
Link Distance (ft)	438		427			301
Travel Time (s)	11.9		11.6			6.8
Volume (vph)	0	175	450	0	0	20
Peak Hour Factor	0.71	0.71	0.97	0.97	0.59	0.59
Heavy Vehicles (%)	0%	12%	13%	0%	0%	100%
Lane Group Flow (vph)	0	246	464	0	0	34
Turn Type	custom					
Protected Phases		5	1			1
Permitted Phases		1				
Detector Phases		5	1			1
Minimum Initial (s)		8.0	10.0			10.0
Minimum Split (s)		28.0	28.0			28.0
Total Split (s)	0.0	36.0	44.0	0.0	0.0	44.0
Total Split (%)	0.0%	45.0%	55.0%	0.0%	0.0%	55.0%
Yellow Time (s)		3.0	3.0			3.0
All-Red Time (s)		1.0	1.0			1.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	C-Max			C-Max
v/c Ratio		0.19	0.14			0.05
Control Delay		0.3	1.9			1.6
Queue Delay		0.0	0.0			0.0
Total Delay		0.3	1.9			1.6
Queue Length 50th (ft)		0	13			1
Queue Length 95th (ft)		0	19			1
Internal Link Dist (ft)	358		347			221
Turn Bay Length (ft)						
Base Capacity (vph)		1321	3305			684
Starvation Cap Reductn		0	0			0
Spillback Cap Reductn		0	0			0
Storage Cap Reductn		0	0			0
Reduced v/c Ratio		0.19	0.14			0.05

Intersection Summary

Area Type: CBD

Cycle Length: 80

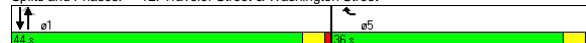
Actuated Cycle Length: 80

Offset: 6 (8%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 12: Traveler Street & Washington Street



HCM Signalized Intersection Capacity Analysis

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12: Traveler Street & Washington Street

	↖	↗	↖	↗	↘	↙
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑↑			↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor		1.00	0.91			1.00
Fr		0.86	1.00			1.00
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		1321	4131			855
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		1321	4131			855
Volume (vph)	0	175	450	0	0	20
Peak-hour factor, PHF	0.71	0.71	0.97	0.97	0.59	0.59
Adj. Flow (vph)	0	246	464	0	0	34
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	246	464	0	0	34
Heavy Vehicles (%)	0%	12%	13%	0%	0%	100%
Turn Type	custom					
Protected Phases		5	1			1
Permitted Phases		1				
Actuated Green, G (s)		72.0	64.0			64.0
Effective Green, g (s)		72.0	64.0			64.0
Actuated g/C Ratio		0.90	0.80			0.80
Clearance Time (s)		4.0	4.0			4.0
Vehicle Extension (s)		2.0	2.0			2.0
Lane Grp Cap (vph)		1321	3305			684
v/s Ratio Prot		c0.02	0.11			0.04
v/s Ratio Perm		0.17				
v/c Ratio		0.19	0.14			0.05
Uniform Delay, d1		0.5	1.8			1.7
Progression Factor		1.00	1.00			0.89
Incremental Delay, d2		0.0	0.1			0.1
Delay (s)		0.5	1.9			1.6
Level of Service		A	A			A
Approach Delay (s)	0.5		1.9			1.6
Approach LOS	A		A			A

Intersection Summary

HCM Average Control Delay 1.4 HCM Level of Service A

HCM Volume to Capacity ratio 0.19

Actuated Cycle Length (s) 80.0 Sum of lost time (s) 0.0

Intersection Capacity Utilization 28.4% ICU Level of Service A

Analysis Period (min) 15

c Critical Lane Group

Lanes, Volumes, Timings  
13: East Berkeley Street & Washington Street

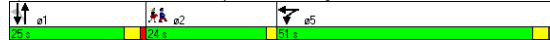
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0	0	0	0	0	80	0	0	0	0	0	
Storage Lanes	0	0	0	0	0	0	1	0	0	0	0	0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50		50	50			50		
Trailing Detector (ft)				0	0		0	0			0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			Yes		
Link Speed (mph)		30			25			25			30		
Link Distance (ft)		266			525			285			427		
Travel Time (s)		6.0			14.3			7.8			9.7		
Volume (vph)	0	0	0	105	1040	85	80	365	0	0	20	0	
Confl. Peds. (#/hr)	145		179	163		129	179		163	129		145	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	100%	2%	
Lane Group Flow (vph)	0	0	0	0	1336	0	87	397	0	0	22	0	
Turn Type				Split			Perm				1		2
Protected Phases				5	5		1				1		
Permitted Phases							1						
Detector Phases				5	5		1	1			1		
Minimum Initial (s)				8.0	8.0		20.0	20.0			20.0		2.0
Minimum Split (s)				25.0	25.0		24.0	24.0			24.0		24.0
Total Split (s)	0.0	0.0	0.0	51.0	51.0	0.0	25.0	25.0	0.0	0.0	25.0	0.0	24.0
Total Split (%)	0.0%	0.0%	0.0%	51.0%	51.0%	0.0%	25.0%	25.0%	0.0%	0.0%	25.0%	0.0%	24%
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0		2.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0		0.0
Lead/Lag							Lead	Lead			Lead		Lag
Lead-Lag Optimize?													
Recall Mode				None	None		C-Min	C-Min			C-Min		None
v/c Ratio				0.80			0.27	0.67			0.07		
Control Delay				31.3			32.0	38.7			29.5		
Queue Delay				0.0			0.0	0.0			0.0		
Total Delay				31.3			32.0	38.7			29.5		
Queue Length 50th (ft)				270			42	230			10		
Queue Length 95th (ft)				281			97	#466			33		
Internal Link Dist (ft)	186			445			205				347		
Turn Bay Length (ft)							80						
Base Capacity (vph)				2101			328	596			304		
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				0.64			0.27	0.67			0.07		

Intersection Summary

Area Type: CBD  
Cycle Length: 100  
Actuated Cycle Length: 100  
Offset: 95 (95%), Referenced to phase 1:NBSB, Start of Green  
Natural Cycle: 80  
Control Type: Actuated-Coordinated  
# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Splits and Phases: 13: East Berkeley Street & Washington Street



HCM Signalized Intersection Capacity Analysis  
13: East Berkeley Street & Washington Street

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)							4.0	4.0	4.0		4.0	
Lane Util. Factor							0.91	1.00	1.00		1.00	
Frpb, ped/bikes							0.99	1.00	1.00		1.00	
Flpb, ped/bikes							1.00	0.74	1.00		1.00	
Fr							0.99	1.00	1.00		1.00	
Fl							1.00	0.95	1.00		1.00	
Satd. Flow (prot)							4450	1178	1676		855	
Flt Permitted							1.00	0.74	1.00		1.00	
Satd. Flow (perm)							4450	921	1676		855	
Volume (vph)	0	0	0	105	1040	85	80	365	0	0	20	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	114	1130	92	87	397	0	0	22	0
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1326	0	87	397	0	0	22	0
Confl. Peds. (#/hr)	145		179	163		129	179		163	129		145
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	100%	2%
Turn Type				Split			Perm				1	
Protected Phases				5	5		1				1	
Permitted Phases							1					
Actuated Green, G (s)							37.2	35.2	35.2		35.2	
Effective Green, g (s)							37.2	35.2	35.2		35.2	
Actuated g/C Ratio							0.37	0.35	0.35		0.35	
Clearance Time (s)							4.0	4.0	4.0		4.0	
Vehicle Extension (s)							3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)							1655	324	590		301	
v/s Ratio Prot							c0.30		c0.24		0.03	
v/s Ratio Perm								0.09				
v/c Ratio							0.80	0.27	0.67		0.07	
Uniform Delay, d1							28.1	23.2	27.5		21.5	
Progression Factor							1.00	1.00	1.00		1.00	
Incremental Delay, d2							2.9	2.0	6.0		0.5	
Delay (s)							31.0	25.2	33.5		22.0	
Level of Service							C	C	C		C	
Approach Delay (s)	0.0								32.0		22.0	
Approach LOS	A								C		C	

Intersection Summary

HCM Average Control Delay: 31.2, HCM Level of Service: C  
HCM Volume to Capacity ratio: 0.74  
Actuated Cycle Length (s): 100.0, Sum of lost time (s): 27.6  
Intersection Capacity Utilization: 57.5%, ICU Level of Service: B  
Analysis Period (min): 15  
c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
10: William E Mullins Way & Harrison Avenue

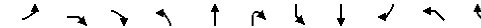
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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Sign Control	Stop		Free	Free		
Grade	0%		0%	0%		
Volume (veh/h)	10	30	195	100	300	25
Peak Hour Factor	0.60	0.60	0.84	0.84	0.88	0.88
Hourly flow rate (vph)	17	50	232	119	341	28
Pedestrians	34		5	1		
Lane Width (ft)	12.0		12.0	12.0		
Walking Speed (ft/s)	4.0		4.0	4.0		
Percent Blockage	3		0	4.0		
Right turn flare (veh)						
Median type	Raised					
Median storage (veh)	1					
Upstream signal (ft)			364	356		
pX, platoon unblocked	0.98	0.98	0.98			
vC, conflicting volume	914	224	403			
vC1, stage 1 conf vol	389					
vC2, stage 2 conf vol	525					
vCu, unblocked vol	895	192	375			
tC, single (s)	7.1	7.2	4.2			
tC, 2 stage (s)	6.1					
tF (s)	3.6	3.4	2.3			
p0 queue free %	95	93	79			
cM capacity (veh/h)	309	742	1100			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	67	272	79	227	142	
Volume Left	17	232	0	0	0	
Volume Right	50	0	0	0	28	
cSH	550	1100	1700	1700	1700	
Volume to Capacity	0.12	0.21	0.05	0.13	0.08	
Queue Length 95th (ft)	10	20	0	0	0	
Control Delay (s)	12.5	8.1	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	12.5	6.3		0.0		
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay	3.9					
Intersection Capacity Utilization	39.2%		ICU Level of Service		A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
11: Site Driveway & Albany Street

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Movement	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations	↔	↔	↔	↔	↕	↕	↔	↕	↕	↔	↔
Sign Control	Stop			Free	Free		Free	Free	Stop		
Grade	0%			0%	0%		0%	0%	0%		
Volume (veh/h)	0	0	1	0	0	0	560	1780	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92
Hourly flow rate (vph)	0	0	1	0	0	0	589	1874	0	0	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type	None						None				
Median storage (veh)											
Upstream signal (ft)						557		158			
pX, platoon unblocked	0.78	0.78	0.78	0.78						0.78	
vC, conflicting volume	3053	3053	625	1874			0		3053	0	
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	3068	3068	0	1548			0		3068	0	
tC, single (s)	7.5	6.5	6.9	4.1			4.3		6.5	6.9	
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	2.2			2.3		4.0	3.3	
p0 queue free %	100	100	100	100			63		100	100	
cM capacity (veh/h)	3	6	841	329			1572		6	1084	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>SB 1</b>	<b>SB 2</b>	<b>SB 3</b>							
Volume Total	1	964	749	749							
Volume Left	0	589	0	0							
Volume Right	1	0	0	0							
cSH	841	1572	1700	1700							
Volume to Capacity	0.00	0.37	0.44	0.44							
Queue Length 95th (ft)	0	44	0	0							
Control Delay (s)	9.3	6.9	0.0	0.0							
Lane LOS	A	A									
Approach Delay (s)	9.3	2.7									
Approach LOS	A										
<b>Intersection Summary</b>											
Average Delay	2.7										
Intersection Capacity Utilization	60.8%		ICU Level of Service		B						
Analysis Period (min)	15										

HCM Unsignalized Intersection Capacity Analysis  
17: Traveler Street & Site Driveway

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕						↕		
Sign Control	Free			Free				Stop		Stop		
Grade	0%			0%				0%		0%		
Volume (veh/h)	25	225	10	10	200	45	0	0	0	75	0	35
Peak Hour Factor	0.74	0.74	0.74	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	304	14	12	233	52	0	0	0	82	0	38
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume												
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol												
tC, single (s)												
tC, 2 stage (s)												
tF (s)												
p0 queue free %												
cM capacity (veh/h)												
Direction, Lane #												
Volume Total												
Volume Left												
Volume Right												
cSH												
Volume to Capacity												
Queue Length 95th (ft)												
Control Delay (s)												
Lane LOS												
Approach Delay (s)												
Approach LOS												
Intersection Summary												
Average Delay												
Intersection Capacity Utilization												
Analysis Period (min)												

HCM Unsignalized Intersection Capacity Analysis  
19: Site Driveway & Harrison Avenue

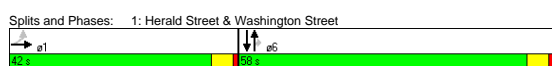
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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↕	↕			↕
Sign Control	Stop	Free	Free			Free
Grade	0%	0%	0%			0%
Volume (veh/h)	0	5	290	20	0	335
Peak Hour Factor	0.92	0.92	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	5	345	24	0	399
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume						
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol						
tC, single (s)						
tC, 2 stage (s)						
tF (s)						
p0 queue free %						
cM capacity (veh/h)						
Direction, Lane #						
Volume Total						
Volume Left						
Volume Right						
cSH						
Volume to Capacity						
Queue Length 95th (ft)						
Control Delay (s)						
Lane LOS						
Approach Delay (s)						
Approach LOS						
Intersection Summary						
Average Delay						
Intersection Capacity Utilization						
Analysis Period (min)						


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑							↑↑↑	↑		↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50						50	50	50		
Trailing Detector (ft)	0	0						0	0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red	No					Yes		Yes		Yes		Yes
Link Speed (mph)	30				30			30		30		30
Link Distance (ft)	376				407			347		464		464
Travel Time (s)	8.5				9.3			7.9		10.5		10.5
Volume (vph)	85	1425	0	0	0	0	0	580	85	0	20	0
Confl. Peds. (#/hr)	2				23			78	78			
Confl. Bikes (#/hr)	1							8				
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	100%	100%	100%
Bus Blockages (#/hr)	0	6	6	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1756	0	0	0	0	0	630	92	0	24	0
Turn Type	Perm						Perm					
Protected Phases	1								6		6	
Permitted Phases	1								6		6	
Detector Phases	1								6		6	
Minimum Initial (s)	12.0	12.0							12.0	12.0	12.0	
Minimum Split (s)	31.0	31.0							31.0	31.0	31.0	
Total Split (s)	42.0	42.0	0.0	0.0	0.0	0.0	0.0	58.0	58.0	0.0	58.0	0.0
Total Split (%)	42.0%	42.0%	0.0%	0.0%	0.0%	0.0%	0.0%	58.0%	58.0%	0.0%	58.0%	0.0%
Yellow Time (s)	4.0	4.0							4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0							1.0	1.0	1.0	
Lead/Lag												
Recall Mode	Max	Max							C-Max	C-Max	C-Max	
v/c Ratio	1.02								0.38	0.14	0.05	
Control Delay	58.7								14.1	11.9	11.4	
Queue Delay	48.2								0.0	0.0	0.0	
Total Delay	106.9								14.1	12.0	11.4	
Queue Length 50th (ft)	-437								115	27	7	
Queue Length 95th (ft)	#491								155	53	18	
Internal Link Dist (ft)	296		327				267		384			
Turn Bay Length (ft)												
Base Capacity (vph)	1720								1671	652	462	
Starvation Cap Reductn	0								0	0	0	
Spillback Cap Reductn	180								0	74	0	
Storage Cap Reductn	0								0	0	0	
Reduced v/c Ratio	1.14								0.38	0.16	0.05	

Intersection Summary			
Area Type:	CBD		
Cycle Length:	100		
Actuated Cycle Length:	100		
Offset: 60 (60%), Referenced to phase 6:NBSB, Start of Green			
Natural Cycle:	65		
Control Type:	Actuated-Coordinated		
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			



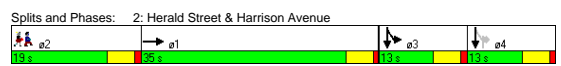

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑							↑↑↑	↑		↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0								4.0	4.0	4.0	
Lane Util. Factor	0.91								0.95	1.00	1.00	
Frpb, ped/bikes	1.00								1.00	0.87	1.00	
Flpb, ped/bikes	1.00								1.00	1.00	1.00	
Frt	1.00								1.00	0.85	1.00	
Flt Protected	1.00								1.00	1.00	1.00	
Satd. Flow (prot)	4527								3094	1205	855	
Flt Permitted	1.00								1.00	1.00	1.00	
Satd. Flow (perm)	4527								3094	1205	855	
Volume (vph)	85	1425	0	0	0	0	0	580	85	0	20	0
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.85	0.85	0.85
Adj. Flow (vph)	99	1657	0	0	0	0	0	630	92	0	24	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	1	0	0
Lane Group Flow (vph)	0	1756	0	0	0	0	0	630	91	0	24	0
Confl. Peds. (#/hr)	2								23	78	78	
Confl. Bikes (#/hr)	1									8		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	100%	100%	100%
Bus Blockages (#/hr)	0	6	6	0	0	0	0	0	0	0	0	0
Turn Type	Perm						Perm					
Protected Phases	1								6		6	
Permitted Phases	1								6		6	
Actuated Green, G (s)	37.0								53.0	53.0	53.0	
Effective Green, g (s)	38.0								54.0	54.0	54.0	
Actuated g/C Ratio	0.38								0.54	0.54	0.54	
Clearance Time (s)	5.0								5.0	5.0	5.0	
Vehicle Extension (s)	3.0								3.0	3.0	3.0	
Lane Grp Cap (vph)	1720								1671	651	462	
v/s Ratio Prot									c0.20		0.03	
v/s Ratio Perm	0.39									0.08		
v/c Ratio	1.02								0.38	0.14	0.05	
Uniform Delay, d1	31.0								13.3	11.4	10.9	
Progression Factor	1.00								1.00	1.00	1.00	
Incremental Delay, d2	27.1								0.7	0.4	0.2	
Delay (s)	58.1								13.9	11.9	11.1	
Level of Service	E								B	B	B	
Approach Delay (s)	58.1		0.0				13.7		11.1			
Approach LOS	E		A				B		B			

Intersection Summary			
HCM Average Control Delay	44.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	a2	
Lane Configurations	↑↑			←			←			↑↑				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Leading Detector (ft)	50									50	50	50		
Trailing Detector (ft)	0									0	0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9		
Right Turn on Red	Yes			Yes			Yes			No			Yes	
Link Speed (mph)	30			30			30			30			30	
Link Distance (ft)	407			540			356			340				
Travel Time (s)	9.3			12.3			8.1			7.7				
Volume (vph)	0	1250	260	0	0	0	0	0	175	175	245	0		
Confl. Bikes (#/hr)	1													
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.69	0.69	0.69	0.81	0.81	0.81		
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	3%	3%	3%		
Parking (#/hr)	2													
Lane Group Flow (vph)	0	1715	0	0	0	0	0	0	254	216	302	0		
Turn Type	custom custom													
Protected Phases	1									3			3.4	2
Permitted Phases										4			4	
Detector Phases	1									4			3	3.4
Minimum Initial (s)	1.0									8.0			8.0	4.0
Minimum Split (s)	19.0									13.0			13.0	19.0
Total Split (s)	0.0	35.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	13.0	26.0	0.0	19.0	
Total Split (%)	0.0%	43.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.3%	16.3%	32.5%	0.0%	24%	
Yellow Time (s)	4.0									4.0			4.0	
All-Red Time (s)	1.0									1.0			1.0	
Lead/Lag	Lag									Lag			Lead	
Lead-Lag Optimize?	Yes									Yes			Yes	
Recall Mode	Max									Max			Max	
v/c Ratio	0.96									0.31			0.50	0.35
Control Delay	38.1									1.0			29.1	24.6
Queue Delay	0.0									0.0			0.0	0.0
Total Delay	38.1									1.0			29.1	24.6
Queue Length 50th (ft)	290									0			90	63
Queue Length 95th (ft)	#387									0			137	86
Internal Link Dist. (ft)	327			460			276			260				
Turn Bay Length (ft)														
Base Capacity (vph)	1784									828			434	867
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	0.96									0.31			0.50	0.35

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Natural Cycle: 80  
 Control Type: Semi Act-Uncoord  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↑↑			←			←			↑↑			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0									4.0			
Lane Util. Factor	0.91									0.88			
Frpb, ped/bikes	1.00									0.99			
Flpb, ped/bikes	1.00									1.00			
Frt	0.97									0.85			
Flt Protected	1.00									1.00			
Satd. Flow (prot)	4503									2384			
Flt Permitted	1.00									1.00			
Satd. Flow (perm)	4503									2384			
Volume (vph)	0	1250	260	0	0	0	0	0	175	175	245	0	
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.69	0.69	0.69	0.81	0.81	0.81	
Adj. Flow (vph)	0	1420	295	0	0	0	0	0	254	216	302	0	
RTOR Reduction (vph)	0	40	0	0	0	0	0	0	225	0	0	0	
Lane Group Flow (vph)	0	1675	0	0	0	0	0	0	29	216	302	0	
Confl. Bikes (#/hr)	1												
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	3%	3%	3%	
Parking (#/hr)	2												
Turn Type	custom custom												
Protected Phases	1									3			3.4
Permitted Phases										4			4
Actuated Green, G (s)	30.0									8.0			16.0
Effective Green, g (s)	31.0									9.0			18.0
Actuated g/C Ratio	0.39									0.11			0.22
Clearance Time (s)	5.0									5.0			5.0
Vehicle Extension (s)	3.0									2.0			2.0
Lane Grp Cap (vph)	1745									268			434
v/s Ratio Prot	c0.37									c0.06			0.10
v/s Ratio Perm										0.01			0.08
v/c Ratio	0.96									0.11			0.50
Uniform Delay, d1	23.9									31.9			27.8
Progression Factor	1.00									1.00			1.00
Incremental Delay, d2	13.9									0.8			4.0
Delay (s)	37.8									32.7			31.9
Level of Service	D									C			C
Approach Delay (s)	37.8			0.0			32.7			C			
Approach LOS	D			A			C			C			

**Intersection Summary**

HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50			50	
Trailing Detector (ft)		0			0	
Turning Speed (mph)	15	9	15			9
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	540			158	348	
Travel Time (s)	12.3			3.6	7.9	
Volume (vph)	0	1600	0	0	1700	0
Peak Hour Factor	0.88	0.88	0.92	0.92	0.94	0.94
Lane Group Flow (vph)	0	1818	0	0	1809	0
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Detector Phases	2		1			
Minimum Initial (s)	8.0		8.0			
Minimum Split (s)	23.0		23.0			
Total Split (s)	0.0	50.0	0.0	0.0	50.0	0.0
Total Split (%)	0.0%	50.0%	0.0%	0.0%	50.0%	0.0%
Yellow Time (s)	4.0		4.0			
All-Red Time (s)	1.0		1.0			
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	Max		C-Max			
v/c Ratio	1.22		0.86			
Control Delay	130.6		29.4			
Queue Delay	4.0		0.1			
Total Delay	134.6		29.5			
Queue Length 50th (ft)	-626		365			
Queue Length 95th (ft)	#715		436			
Internal Link Dist (ft)	460			78	268	
Turn Bay Length (ft)						
Base Capacity (vph)	1495		2105			
Starvation Cap Reductn	0		0			
Spillback Cap Reductn	11		15			
Storage Cap Reductn	0		0			
Reduced v/c Ratio	1.23		0.87			

**Intersection Summary**

Area Type: CBD

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 80 (80%), Referenced to phase 1:SBT, Start of Green

Natural Cycle: 110

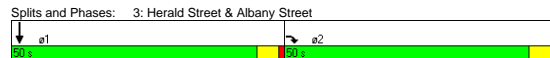
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

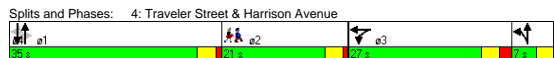
Queue shown is maximum after two cycles.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			
Lane Util. Factor	0.76		0.91			
Frt	0.85		1.00			
Flt Protected	1.00		1.00			
Satd. Flow (prot)	3249		4577			
Flt Permitted	1.00		1.00			
Satd. Flow (perm)	3249		4577			
Volume (vph)	0	1600	0	0	1700	0
Peak-hour factor, PHF	0.88	0.88	0.92	0.92	0.94	0.94
Adj. Flow (vph)	0	1818	0	0	1809	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	1818	0	0	1809	0
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Actuated Green, G (s)	45.0		45.0			
Effective Green, g (s)	46.0		46.0			
Actuated g/C Ratio	0.46		0.46			
Clearance Time (s)	5.0		5.0			
Vehicle Extension (s)	2.0		2.0			
Lane Grp Cap (vph)	1495		2105			
v/s Ratio Prot	c0.56		c0.40			
v/c Ratio Perm	1.22		0.86			
Uniform Delay, d1	27.0		24.1			
Progression Factor	1.00		1.00			
Incremental Delay, d2	103.6		4.9			
Delay (s)	130.6		29.0			
Level of Service	F		C			
Approach Delay (s)	130.6			0.0	29.0	
Approach LOS	F			A	C	
<b>Intersection Summary</b>						
HCM Average Control Delay	79.9		HCM Level of Service		E	
HCM Volume to Capacity ratio	1.04					
Actuated Cycle Length (s)	100.0		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	84.6%		ICU Level of Service		E	
Analysis Period (min)	15					
c Critical Lane Group						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50					50	50		
Trailing Detector (ft)				0	0					0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			No		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		414			343			372			197		
Travel Time (s)		9.4			7.8			8.5			4.5		
Volume (vph)	0	0	0	85	45	30	105	250	190	220	345	15	
Confl. Bikes (#/hr)					1			4			4		
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.80	0.80	0.80	0.95	0.95	0.95	
Heavy Vehicles (%)	2%	2%	2%	9%	9%	9%	2%	2%	2%	3%	3%	3%	
Lane Group Flow (vph)	0	0	0	0	182	0	0	681	0	232	379	0	
Turn Type				Split			D,P+P			Perm			
Protected Phases				3	3		4	14			1		2
Permitted Phases							1			1			
Detector Phases				3	3		4	14		1	1		
Minimum Initial (s)				7.0	7.0		4.0			7.0	7.0		2.0
Minimum Split (s)				21.0	21.0		7.0			20.0	20.0		21.0
Total Split (s)	0.0	0.0	0.0	27.0	27.0	0.0	7.0	42.0	0.0	35.0	35.0	0.0	21.0
Total Split (%)	0.0%	0.0%	0.0%	30.0%	30.0%	0.0%	7.8%	46.7%	0.0%	38.9%	38.9%	0.0%	23%
Yellow Time (s)				3.0	3.0		3.0			3.0	3.0		3.0
All-Red Time (s)				2.0	2.0		0.0			1.0	1.0		1.0
Lead/Lag				Lead	Lead		Lag			Lead	Lead		Lag
Lead-Lag Optimize?				Yes	Yes		Yes			Yes	Yes		Yes
Recall Mode				Max	Max		Max			C-Max	C-Max		None
v/c Ratio				0.16			0.80			1.52	0.67		
Control Delay				18.2			31.6			289.7	32.0		
Queue Delay				0.0			0.0			0.0	0.2		
Total Delay				18.2			31.6			289.7	32.2		
Queue Length 50th (ft)				23			188			~186	181		
Queue Length 95th (ft)				62			m201			#328	283		
Internal Link Dist (ft)			334			263		292			117		
Turn Bay Length (ft)													
Base Capacity (vph)				1131			851			153	568		
Starvation Cap Reductn				0			1			0	0		
Spillback Cap Reductn				0			0			0	11		
Storage Cap Reductn				0			0			0	0		
Reduced v/c Ratio				0.16			0.80			1.52	0.68		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 18 (20%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)												
Lane Util. Factor				0.95	0.95					1.00	1.00	
Frpb, ped/bikes				1.00	0.99					1.00	1.00	
Flpb, ped/bikes				1.00	1.00					1.00	1.00	
Frt				0.97	0.95					1.00	0.99	
Flt Protected				0.97	0.99					0.95	1.00	
Satd. Flow (prot)				2815	2964					1577	1648	
Flt Permitted				0.97	0.63					0.25	1.00	
Satd. Flow (perm)				2815	1879					412	1648	
Volume (vph)	0	0	0	85	45	30	105	250	190	220	345	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.88	0.88	0.80	0.80	0.80	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	97	51	34	131	312	238	232	363	16
RTOR Reduction (vph)	0	0	0	0	18	0	0	83	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	164	0	0	598	0	232	379	0
Confl. Bikes (#/hr)					1			4		4		4
Heavy Vehicles (%)	2%	2%	2%	9%	9%	9%	2%	2%	2%	3%	3%	3%
Turn Type				Split			D,P+P			Perm		
Protected Phases				3	3		4	14			1	
Permitted Phases							1			1		
Actuated Green, G (s)				34.6			32.6			28.6	28.6	
Effective Green, g (s)				35.6			31.6			28.6	28.6	
Actuated g/C Ratio				0.40			0.35			0.32	0.32	
Clearance Time (s)				5.0						4.0	4.0	
Vehicle Extension (s)				2.0						2.0	2.0	
Lane Grp Cap (vph)				1113			696			131	524	
v/s Ratio Prot				c0.06			c0.03			0.23	0.23	
v/s Ratio Perm							0.27			c0.56		
v/c Ratio				0.15			0.86			1.77	0.72	
Uniform Delay, d1				17.5			27.1			30.7	27.2	
Progression Factor				1.00			1.41			1.00	1.00	
Incremental Delay, d2				0.3			7.3			376.1	8.4	
Delay (s)				17.7			45.5			406.8	35.6	
Level of Service				B			D			F	D	
Approach Delay (s)		0.0			17.7		45.5				176.5	
Approach LOS		A			B		D				F	

**Intersection Summary**

HCM Average Control Delay	96.4	HCM Level of Service	F
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	22.8
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings  
5: Traveler Street & Albany Street

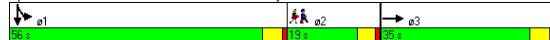
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50									50	50		
Trailing Detector (ft)	0									0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes No												
Link Speed (mph)	30			30			30			30		30	
Link Distance (ft)	170			322			416			557		557	
Travel Time (s)	3.9			7.3			9.5			12.7		12.7	
Volume (vph)	0	375	130	0	0	0	0	0	0	1130	1005	220	
Confl. Bikes (#/hr)	5												
Peak Hour Factor	0.72	0.72	0.72	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.98	0.98	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%	
Lane Group Flow (vph)	0	702	0	0	0	0	0	0	0	936	1467	0	
Turn Type	Split												
Protected Phases	3									1	1		2
Permitted Phases													
Detector Phases	3									1	1		
Minimum Initial (s)	8.0									10.0	10.0		4.0
Minimum Split (s)	24.0									24.0	24.0		19.0
Total Split (s)	0.0	35.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.0	56.0	0.0	19.0
Total Split (%)	0.0%	31.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.9%	50.9%	0.0%	17%
Yellow Time (s)	4.0									4.0	4.0		4.0
All-Red Time (s)	1.0									1.0	1.0		1.0
Lead/Lag	Lead Lead Lag												
Lead-Lag Optimize?	Yes Yes Yes												
Recall Mode	None												
v/c Ratio	0.87									0.88	0.78		
Control Delay	49.1									21.7	20.1		
Queue Delay	0.0									1.1	0.2		
Total Delay	49.1									22.8	20.3		
Queue Length 50th (ft)	234									300	336		
Queue Length 95th (ft)	219									#883	#763		
Internal Link Dist (ft)	90			242			336			477			
Turn Bay Length (ft)													
Base Capacity (vph)	899									1065	1882		
Starvation Cap Reductn	0									32	0		
Spillback Cap Reductn	2									32	47		
Storage Cap Reductn	0									0	0		
Reduced v/c Ratio	0.78									0.91	0.80		

Intersection Summary

Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 80 (73%), Referenced to phase 1:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Traveler Street & Albany Street



HCM Signalized Intersection Capacity Analysis  
5: Traveler Street & Albany Street

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0									4.0	4.0	
Lane Util. Factor	0.95									0.91	0.91	
Frpb, ped/bikes	1.00									1.00	1.00	
Flpb, ped/bikes	1.00									1.00	1.00	
Frt	0.96									1.00	0.98	
Flt Protected	1.00									0.95	0.99	
Satd. Flow (prot)	3049									1435	2931	
Flt Permitted	1.00									0.95	0.99	
Satd. Flow (perm)	3049									1435	2931	
Volume (vph)	0	375	130	0	0	0	0	0	0	1130	1005	220
Peak-hour factor, PHF	0.72	0.72	0.72	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Adj. Flow (vph)	0	521	181	0	0	0	0	0	0	1153	1026	224
RTOR Reduction (vph)	0	33	0	0	0	0	0	0	0	163	9	0
Lane Group Flow (vph)	0	669	0	0	0	0	0	0	0	773	1458	0
Confl. Bikes (#/hr)	5											
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Split											
Protected Phases	3									1	1	
Permitted Phases												
Actuated Green, G (s)	26.9									65.3	65.3	
Effective Green, g (s)	27.9									66.3	66.3	
Actuated g/C Ratio	0.25									0.60	0.60	
Clearance Time (s)	5.0									5.0	5.0	
Vehicle Extension (s)	2.0									2.0	2.0	
Lane Grp Cap (vph)	773									865	1767	
v/s Ratio Prot	c0.22									c0.54	0.50	
v/s Ratio Perm												
v/c Ratio	0.87									0.89	0.83	
Uniform Delay, d1	39.3									18.8	17.3	
Progression Factor	1.00									1.00	1.00	
Incremental Delay, d2	9.7									13.6	4.5	
Delay (s)	48.9									32.4	21.8	
Level of Service	D									C	C	
Approach Delay (s)	48.9			0.0			0.0			25.9		
Approach LOS	D			A			A			C		

Intersection Summary

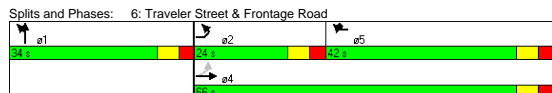
HCM Average Control Delay: 31.1 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.89  
 Actuated Cycle Length (s): 110.0 Sum of lost time (s): 15.8  
 Intersection Capacity Utilization: 72.9% ICU Level of Service: C  
 Analysis Period (min): 15  
 c Critical Lane Group

Lanes, Volumes, Timings  
6: Traveler Street & Frontage Road

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Lane Group	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0
Turning Speed (mph)	15	15		9	9	15		9
Right Turn on Red	No			Yes				No
Link Speed (mph)			30				30	
Link Distance (ft)			322				432	
Travel Time (s)			7.3				9.8	
Volume (vph)	95	350	1050	255	495	340	765	60
Confl. Peds. (#/hr)			3	3				
Peak Hour Factor	0.98	0.98	0.98	0.91	0.91	0.87	0.87	0.87
Heavy Vehicles (%)	3%	3%	3%	3%	3%	5%	5%	5%
Lane Group Flow (vph)	0	454	1071	280	544	391	948	0
Turn Type	Prot	Perm		custom	custom	Split		
Protected Phases	2	4	5	5	1	1		
Permitted Phases		4						
Detector Phases	2	4	4	5	5	1	1	
Minimum Initial (s)	10.0	10.0	10.0	8.0	8.0	10.0	10.0	
Minimum Split (s)	24.0	34.0	34.0	34.0	34.0	34.0	34.0	
Total Split (s)	24.0	66.0	66.0	42.0	42.0	34.0	34.0	0.0
Total Split (%)	24.0%	66.0%	66.0%	42.0%	42.0%	34.0%	34.0%	0.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead			Lag	Lag			
Lead-Lag Optimize?	Yes			Yes	Yes			
Recall Mode	Max	Max	Max	Max	Max	Max	Max	
v/c Ratio	0.46	0.55	0.59	0.81	0.43	0.72		
Control Delay	12.1	12.3	31.1	27.8	30.0	34.9		
Queue Delay	4.8	6.8	0.0	0.0	0.0	0.0		
Total Delay	16.8	19.1	31.1	27.8	30.0	34.9		
Queue Length 50th (ft)	142	190	160	194	103	197		
Queue Length 95th (ft)	214	244	261	#392	140	235		
Internal Link Dist (ft)			242			352		
Turn Bay Length (ft)								
Base Capacity (vph)	978	1955	472	669	900	1319		
Starvation Cap Reductn	443	830	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0		
Reduced v/c Ratio	0.85	0.95	0.59	0.81	0.43	0.72		

Intersection Summary	
Area Type:	CBD
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



HCM Signalized Intersection Capacity Analysis  
6: Traveler Street & Frontage Road

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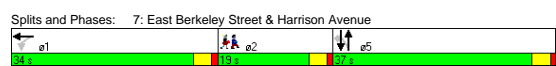
Movement	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.97	0.91		
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	1.00	0.85	0.85	1.00	0.99		
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1577	3154	1242	1411	3001	4397		
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1577	3154	1242	1411	3001	4397		
Volume (vph)	95	350	1050	255	495	340	765	60
Peak-hour factor, PHF	0.98	0.98	0.98	0.91	0.91	0.87	0.87	0.87
Adj. Flow (vph)	97	357	1071	280	544	391	879	69
RTOR Reduction (vph)	0	0	0	0	133	0	0	0
Lane Group Flow (vph)	0	454	1071	280	411	391	948	0
Confl. Peds. (#/hr)			3	3				
Heavy Vehicles (%)	3%	3%	3%	3%	3%	5%	5%	5%
Turn Type	Prot	Perm		custom	custom	Split		
Protected Phases	2	4	5	5	1	1		
Permitted Phases		4						
Actuated Green, G (s)	59.0	59.0	35.0	35.0	27.0	27.0		
Effective Green, g (s)	62.0	62.0	38.0	38.0	30.0	30.0		
Actuated g/C Ratio	0.62	0.62	0.38	0.38	0.30	0.30		
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		
Lane Grp Cap (vph)	978	1955	472	536	900	1319		
v/s Ratio Prot			c0.34	0.23	c0.29	0.13	c0.22	
v/s Ratio Perm		0.29						
v/c Ratio	0.46	0.55	0.59	0.77	0.43	0.72		
Uniform Delay, d1	10.1	10.9	24.8	27.1	28.2	31.2		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	1.6	1.1	5.4	10.1	1.5	3.4		
Delay (s)	11.7	12.0	30.2	37.2	29.7	34.6		
Level of Service	B	B	C	D	C	C		
Approach Delay (s)		11.9				33.2		
Approach LOS		B				C		

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				50	50		50	50		50	50		
Trailing Detector (ft)				0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		505			501			426			372		
Travel Time (s)		11.5			11.4			9.7			8.5		
Volume (vph)	0	0	0	215	785	200	75	340	0	0	295	155	
Confl. Bikes (#/hr)					1								1
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.85	0.85	0.85	0.85	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	11	11	0	0	0	0	0	0	0
Parking (#/hr)							1	1					
Lane Group Flow (vph)	0	0	0	0	1290	0	0	488	0	0	328	172	
Turn Type			Perm			Perm					Perm		
Protected Phases				1			5			5			2
Permitted Phases				1			5			5			
Detector Phases				1	1		5	5		5	5		
Minimum Initial (s)				5.0	5.0		5.0	5.0		5.0	5.0	4.0	
Minimum Split (s)				22.0	22.0		20.0	20.0		20.0	20.0	19.0	
Total Split (s)	0.0	0.0	0.0	34.0	34.0	0.0	37.0	37.0	0.0	0.0	37.0	37.0	19.0
Total Split (%)	0.0%	0.0%	0.0%	37.8%	37.8%	0.0%	41.1%	41.1%	0.0%	0.0%	41.1%	41.1%	21%
Yellow Time (s)				3.0	3.0		3.0	3.0		3.0	3.0	3.0	
All-Red Time (s)				1.0	1.0		1.0	1.0		1.0	1.0	1.0	
Lead/Lag				Lead	Lead						Lag		
Lead-Lag Optimize?				Yes	Yes						Yes		
Recall Mode				C-Max	C-Max		Max	Max		Max	Max	None	
v/c Ratio				0.89			0.95		0.43	0.23			
Control Delay				36.2			58.3		16.4	4.5			
Queue Delay				0.0			0.0		0.5	0.0			
Total Delay				36.2			58.3		17.0	4.5			
Queue Length 50th (ft)				243			-333		164	36			
Queue Length 95th (ft)				#330			#479		285	m42			
Internal Link Dist (ft)		425		421			346		292				
Turn Bay Length (ft)													
Base Capacity (vph)				1455			514		764	736			
Starvation Cap Reductn				0			0		159	0			
Spillback Cap Reductn				0			0		0	0			
Storage Cap Reductn				0			0		0	0			
Reduced v/c Ratio				0.89			0.95		0.54	0.23			

**Intersection Summary**

Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 79 (88%), Referenced to phase 1:WBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.



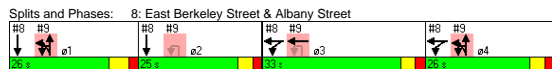
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)												
Lane Util. Factor												
Frpb, ped/bikes												
Flpb, ped/bikes												
Fit Protected												
Satd. Flow (prot)												
Fit Permitted												
Satd. Flow (perm)												
Volume (vph)	0	0	0	215	785	200	75	340	0	0	295	155
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.85	0.85	0.85	0.85	0.90	0.90
Adj. Flow (vph)	0	0	0	231	844	215	88	400	0	0	328	172
RTOR Reduction (vph)	0	0	0	34	0	0	0	0	0	0	0	94
Lane Group Flow (vph)	0	0	0	0	1256	0	0	488	0	0	328	78
Confl. Bikes (#/hr)					1							1
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	11	11	0	0	0	0	0	0
Parking (#/hr)							1	1				
Turn Type			Perm			Perm					Perm	
Protected Phases				1			5			5		
Permitted Phases				1			5			5		
Actuated Green, G (s)				28.4			40.6			40.6	40.6	
Effective Green, g (s)				28.4			40.6			40.6	40.6	
Actuated g/C Ratio				0.32			0.45			0.45	0.45	
Clearance Time (s)				4.0			4.0			4.0	4.0	
Vehicle Extension (s)				2.0			2.0			2.0	2.0	
Lane Grp Cap (vph)				1346			583			764	641	
v/s Ratio Prot										0.19		
v/s Ratio Perm				0.29			0.38			0.05		
v/c Ratio				0.93			0.84			0.43	0.12	
Uniform Delay, d1				29.9			21.8			16.8	14.3	
Progression Factor				1.00			1.00			0.75	1.14	
Incremental Delay, d2				13.0			13.4			1.5	0.3	
Delay (s)				42.9			35.2			14.2	16.7	
Level of Service				D			D			B	B	
Approach Delay (s)	0.0			42.9			35.2			15.0		
Approach LOS	A			D			D			B		

**Intersection Summary**

HCM Average Control Delay: 35.1 HCM Level of Service: D  
 HCM Volume to Capacity ratio: 0.88  
 Actuated Cycle Length (s): 90.0 Sum of lost time (s): 21.0  
 Intersection Capacity Utilization: 78.4% ICU Level of Service: D  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø3	ø4
Lane Configurations					↑↑						↑↑					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Leading Detector (ft)				50	50						50					
Trailing Detector (ft)				0	0						0					
Turning Speed (mph)	15		9	15		9	15		9	15		9				
Right Turn on Red			Yes	Yes		Yes			Yes		No					
Link Speed (mph)		30			30			30			30					
Link Distance (ft)		501			316			383			416					
Travel Time (s)		11.4			7.2			8.7			9.5					
Volume (vph)	0	0	0	175	875	0	0	0	0	0	785	350				
Confl. Peds. (#/hr)												9				
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.97	0.97	0.97				
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%				
Lane Group Flow (vph)	0	0	0	0	1166	0	0	0	0	0	1170	0				
Turn Type				Split												
Protected Phases		3.4	3.4							1.2			1	2	3	4
Permitted Phases																
Detector Phases				3.4	3.4						1.2					
Minimum Initial (s)													11.0	18.0	8.0	8.0
Minimum Split (s)													26.0	25.0	25.0	26.0
Total Split (s)	0.0	0.0	0.0	59.0	59.0	0.0	0.0	0.0	0.0	0.0	51.0	0.0	26.0	25.0	33.0	26.0
Total Split (%)	0.0%	0.0%	0.0%	53.6%	53.6%	0.0%	0.0%	0.0%	0.0%	0.0%	46.4%	0.0%	24%	23%	30%	24%
Yellow Time (s)													4.0	3.0	3.0	3.0
All-Red Time (s)													2.0	2.0	2.0	2.0
Lead/Lag													Lead	Lag	Lead	Lag
Lead-Lag Optimize?													Yes	Yes	Yes	Yes
Recall Mode													Max	C-Max	None	None
v/c Ratio					0.75						0.63					
Control Delay					11.7						23.0					
Queue Delay					8.2						1.4					
Total Delay					19.9						24.5					
Queue Length 50th (ft)					73						267					
Queue Length 95th (ft)					470						m245					
Internal Link Dist (ft)		421			236			303			336					
Turn Bay Length (ft)																
Base Capacity (vph)					1565						1848					
Starvation Cap Reductn					366						451					
Spillback Cap Reductn					0						0					
Storage Cap Reductn					0						0					
Reduced v/c Ratio					0.97						0.84					

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 20 (18%), Referenced to phase 2:SBT and 6:, Start of Green  
 Natural Cycle: 145  
 Control Type: Actuated-Coordinated  
 m Volume for 95th percentile queue is metered by upstream signal.

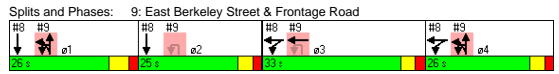


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑						↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)					4.0						4.0	
Lane Util. Factor					0.95						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.95	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					3098						4324	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					3098						4324	
Volume (vph)	0	0	0	175	875	0	0	0	0	0	785	350
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	184	972	0	0	0	0	0	809	361
RTOR Reduction (vph)	0	0	0	15	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1151	0	0	0	0	0	1170	0
Confl. Peds. (#/hr)											9	
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type				Split								
Protected Phases				3.4	3.4						1.2	
Permitted Phases												
Actuated Green, G (s)					54.0						46.0	
Effective Green, g (s)					55.0						47.0	
Actuated g/C Ratio					0.50						0.43	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1549						1848	
v/s Ratio Prot					c0.37						c0.27	
v/s Ratio Perm												
v/c Ratio					0.74						0.63	
Uniform Delay, d1					21.9						24.7	
Progression Factor					0.43						0.88	
Incremental Delay, d2					1.2						1.0	
Delay (s)					10.7						22.8	
Level of Service					B						C	
Approach Delay (s)	0.0				10.7			0.0			22.8	
Approach LOS	A				B			A			C	

**Intersection Summary**  
 HCM Average Control Delay: 16.8  
 HCM Volume to Capacity ratio: 0.69  
 Actuated Cycle Length (s): 110.0  
 Intersection Capacity Utilization: 65.0%  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø4
Lane Configurations					↑↑			↑↑							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0	0	0	0	200	0	0	0	0	0	0	0			
Storage Lanes	0	0	0	0	2	1	0	0	0	0	0	0			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Leading Detector (ft)					50			50							
Trailing Detector (ft)					0			0							
Turning Speed (mph)	15		9	15		9	15		9	15		9			
Right Turn on Red		Yes			No		Yes		No		Yes				
Link Speed (mph)		30			30			30			30				
Link Distance (ft)		316			393			366			432				
Travel Time (s)		7.2			8.7			8.3			9.8				
Volume (vph)	0	0	0	0	655	85	70	395	1085	320	0	0			
Confl. Peds. (#/hr)					13			4		1					
Confl. Bikes (#/hr)					4										
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.92	0.84	0.84	0.84	0.92	0.92			
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	5%	5%	2%	2%	2%			
Lane Group Flow (vph)	0	0	0	0	832	0	0	546	1673	0	0	0			
Turn Type					custom			Split							
Protected Phases					3		1.4	1.4	1.4				1	2	4
Permitted Phases								2.3							
Detector Phases					3		1.4	1.4	1.4						
Minimum Initial (s)					8.0								11.0	18.0	8.0
Minimum Split (s)					25.0								26.0	25.0	26.0
Total Split (s)	0.0	0.0	0.0	0.0	33.0	0.0	52.0	52.0	52.0	0.0	0.0	0.0	26.0	25.0	26.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	30.0%	0.0%	47.3%	47.3%	47.3%	0.0%	0.0%	0.0%	24%	23%	24%
Yellow Time (s)					3.0								4.0	3.0	3.0
All-Red Time (s)					2.0								2.0	2.0	2.0
Lead/Lag					Lead								Lead	Lag	Lag
Lead-Lag Optimizer?					Yes								Yes	Yes	Yes
Recall Mode					None								Max	C-Max	None
v/c Ratio					0.72			0.68	1.35					0.59	1.35
Control Delay					41.0			14.2	189.7					23.5	31.0
Queue Delay					0.5			0.0	0.0					1.00	1.00
Total Delay					41.4			14.3	189.7					24.5	32.0
Queue Length 50th (ft)					195			128	-851					0.9	161.1
Queue Length 95th (ft)					241			220	#896					24.4	192.1
Internal Link Dist (ft)		236			303			286			352			F	A
Turn Bay Length (ft)															
Base Capacity (vph)					1158			801	1243						
Starvation Cap Reductn					0			0	0						
Spillback Cap Reductn					80			6	0						
Storage Cap Reductn					0			0	0						
Reduced v/c Ratio					0.77			0.69	1.35						

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 20 (18%), Referenced to phase 2:SBT and 6:, Start of Green  
 Natural Cycle: 145  
 Control Type: Actuated-Coordinated  
 - Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑			↑↑				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0			4.0			4.0	
Lane Util. Factor					0.91			0.91			0.91	
Frpb, ped/bikes					1.00			1.00			0.99	
Flpb, ped/bikes					1.00			1.00			1.00	
Fit					0.98			1.00			0.97	
Fit Protected					1.00			0.95			1.00	
Satd. Flow (prot)					4391			1414			2848	
Fit Permitted					1.00			0.95			1.00	
Satd. Flow (perm)					4391			1414			2848	
Volume (vph)	0	0	0	0	655	85	70	395	1085	320	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.89	0.89	0.89	0.92	0.84	0.84	0.84	0.92	0.92
Adj. Flow (vph)	0	0	0	0	736	96	76	470	1292	381	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	184	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	832	0	0	362	1673	0	0	0
Confl. Peds. (#/hr)					13			4		1		
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	5%	5%	5%	2%	2%
Turn Type					custom			Split				
Protected Phases					3		1.4	1.4				
Permitted Phases								2.3				
Actuated Green, G (s)					28.0			46.0	46.0			
Effective Green, g (s)					29.0			48.0	48.0			
Actuated g/C Ratio					0.26			0.44	0.44			
Clearance Time (s)					5.0							
Vehicle Extension (s)					2.0							
Lane Grp Cap (vph)					1158			617	1243			
v/s Ratio Prot					c0.19			0.26	c0.59			
v/s Ratio Perm												
v/c Ratio					0.72			0.59	1.35			
Uniform Delay, d1					36.8			23.5	31.0			
Progression Factor					1.00			1.00	1.00			
Incremental Delay, d2					1.8			0.9	161.1			
Delay (s)					38.6			24.4	192.1			
Level of Service					D			C	F			
Approach Delay (s)		0.0			38.6			150.8		0.0		
Approach LOS		A			D			F		A		

**Intersection Summary**

HCM Average Control Delay	120.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	33.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings  
12: Traveler Street & Washington Street

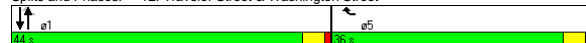
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50	
Trailing Detector (ft)	0	0			0	
Turning Speed (mph)	15	9		9	15	
Right Turn on Red	Yes		Yes			
Link Speed (mph)	25		25			30
Link Distance (ft)	414		395			304
Travel Time (s)	11.3		10.8			6.9
Volume (vph)	0	180	410	0	0	20
Peak Hour Factor	0.75	0.75	0.92	0.92	0.85	0.85
Heavy Vehicles (%)	0%	9%	5%	0%	0%	100%
Lane Group Flow (vph)	0	240	446	0	0	24
Turn Type	custom					
Protected Phases	5		1			1
Permitted Phases	1					
Detector Phases	5		1			1
Minimum Initial (s)	8.0		10.0			10.0
Minimum Split (s)		28.0	28.0			28.0
Total Split (s)	0.0	36.0	44.0	0.0	0.0	44.0
Total Split (%)	0.0%	45.0%	55.0%	0.0%	0.0%	55.0%
Yellow Time (s)	3.0		3.0			3.0
All-Red Time (s)	1.0		1.0			1.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	C-Max			C-Max	
v/c Ratio	0.18	0.13			0.04	
Control Delay	0.3	1.9			1.8	
Queue Delay	0.0	0.0			0.0	
Total Delay	0.3	1.9			1.8	
Queue Length 50th (ft)	0	12			2	
Queue Length 95th (ft)	0	17			5	
Internal Link Dist (ft)	334		315			224
Turn Bay Length (ft)						
Base Capacity (vph)	1357	3557			684	
Starvation Cap Reductn	0	0			0	
Spillback Cap Reductn	0	0			0	
Storage Cap Reductn	0	0			0	
Reduced v/c Ratio	0.18	0.13			0.04	

Intersection Summary

Area Type: CBD  
Cycle Length: 80  
Actuated Cycle Length: 80  
Offset: 6 (8%), Referenced to phase 1:NBSB, Start of Green  
Natural Cycle: 60  
Control Type: Actuated-Coordinated

Splits and Phases: 12: Traveler Street & Washington Street



HCM Signalized Intersection Capacity Analysis  
12: Traveler Street & Washington Street

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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor	1.00	0.91				1.00
Fr	0.86	1.00				1.00
Flt Protected	1.00	1.00				1.00
Satd. Flow (prot)	1357	4446				855
Flt Permitted	1.00	1.00				1.00
Satd. Flow (perm)	1357	4446				855
Volume (vph)	0	180	410	0	0	20
Peak-hour factor, PHF	0.75	0.75	0.92	0.92	0.85	0.85
Adj. Flow (vph)	0	240	446	0	0	24
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	240	446	0	0	24
Heavy Vehicles (%)	0%	9%	5%	0%	0%	100%
Turn Type	custom					
Protected Phases	5		1			1
Permitted Phases	1					
Actuated Green, G (s)	72.0		64.0			64.0
Effective Green, g (s)	72.0		64.0			64.0
Actuated g/C Ratio	0.90		0.80			0.80
Clearance Time (s)	4.0		4.0			4.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1357		3557			684
v/s Ratio Prot	c0.02		0.10			0.03
v/s Ratio Perm	0.16					
v/c Ratio	0.18	0.13				0.04
Uniform Delay, d1	0.5	1.8				1.6
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.0	0.1				0.1
Delay (s)	0.5	1.9				1.7
Level of Service	A	A				A
Approach Delay (s)	0.5	1.9				1.7
Approach LOS	A	A				A

Intersection Summary

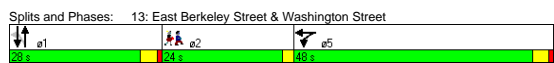
HCM Average Control Delay: 1.4 HCM Level of Service: A  
HCM Volume to Capacity ratio: 0.18  
Actuated Cycle Length (s): 80.0 Sum of lost time (s): 0.0  
Intersection Capacity Utilization: 27.9% ICU Level of Service: A  
Analysis Period (min): 15

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0	0	0	0	80	0	0	0	0	0	0	
Storage Lanes	0	0	0	0	0	1	0	0	0	0	0	0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
Turning Speed (mph)	15	9	15	9	15	9	15	9	15	9	15	9	
Right Turn on Red	Yes Yes Yes Yes Yes Yes Yes Yes												
Link Speed (mph)	25	30		25		30		35		30			
Link Distance (ft)	325	505		468		395		488		395			
Travel Time (s)	8.9	11.5		12.8		9.0		12.8		9.0			
Volume (vph)	0	0	0	225	905	75	120	335	0	0	20	0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	0%	100%	2%	
Lane Group Flow (vph)	0	0	0	0	1311	0	130	364	0	0	22	0	
Turn Type	Split Perm												
Protected Phases	5 5 1 1 1 2												
Permitted Phases	1 1 1 1 1 2												
Detector Phases	5 5 1 1 1 2												
Minimum Initial (s)	8.0	8.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)	0.0	0.0	0.0	25.0	25.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	0.0	0.0	0.0	48.0	48.0	0.0	28.0	28.0	0.0	0.0	28.0	0.0	24.0
Total Split (%)	0.0%	0.0%	0.0%	48.0%	48.0%	0.0%	28.0%	28.0%	0.0%	0.0%	28.0%	0.0%	24%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lead/Lag	Lead Lead Lead Lag												
Lead-Lag Optimize?	None None C-Min C-Min C-Min None												
Recall Mode	None None C-Min C-Min C-Min None												
v/c Ratio	0.81	0.25		0.52		0.06		0.06		0.06			
Control Delay	32.6	27.1		31.0		27.3		27.3		27.3			
Queue Delay	0.0	0.0		0.0		0.0		0.0		0.0			
Total Delay	32.6	27.1		31.0		27.3		27.3		27.3			
Queue Length 50th (ft)	272	62		199		10		10		10			
Queue Length 95th (ft)	283	129		#395		32		32		32			
Internal Link Dist (ft)	245	425		388		315		315		315			
Turn Bay Length (ft)	80												
Base Capacity (vph)	1985 519 698 356												
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	0.66	0.25		0.52		0.06		0.06		0.06			

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 98 (98%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0			4.0			4.0		
Lane Util. Factor	0.91			1.00			1.00			1.00		
Fit	0.99			1.00			1.00			1.00		
Fit Protected	0.99			0.95			1.00			1.00		
Satd. Flow (prot)	4492			1593			1676			855		
Fit Permitted	0.99			0.74			1.00			1.00		
Satd. Flow (perm)	4492			1246			1676			855		
Volume (vph)	0	0	0	225	905	75	120	335	0	0	20	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	245	984	82	130	364	0	0	22	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1303	0	130	364	0	0	22	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	0%	100%	2%
Turn Type	Split Perm											
Protected Phases	5 5 1 1 1 2											
Permitted Phases	1 1 1 1 1 2											
Actuated Green, G (s)	35.9			40.9			40.9			40.9		
Effective Green, g (s)	35.9			40.9			40.9			40.9		
Actuated g/C Ratio	0.36			0.41			0.41			0.41		
Clearance Time (s)	4.0			4.0			4.0			4.0		
Vehicle Extension (s)	3.0			3.0			3.0			3.0		
Lane Grp Cap (vph)	1613			510			685			350		
v/s Ratio Prot	c0.29			c0.22			c0.22			0.03		
v/s Ratio Perm				0.10								
v/c Ratio	0.81			0.25			0.53			0.06		
Uniform Delay, d1	28.9			19.5			22.3			17.9		
Progression Factor	1.00			1.00			1.00			1.00		
Incremental Delay, d2	3.1			1.2			2.9			0.3		
Delay (s)	32.0			20.7			25.3			18.3		
Level of Service	C			C			C			B		
Approach Delay (s)	0.0			32.0			24.1			18.3		
Approach LOS	A			C			C			B		
<b>Intersection Summary</b>												
HCM Average Control Delay	29.7			HCM Level of Service			C					
HCM Volume to Capacity ratio	0.66											
Actuated Cycle Length (s)	100.0			Sum of lost time (s)			23.2					
Intersection Capacity Utilization	52.6%			ICU Level of Service			A					
Analysis Period (min)	15											

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
10: William E Mullins Way & Harrison Avenue

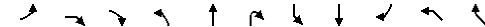
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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	30	85	115	140	490	55
Peak Hour Factor	0.65	0.65	0.83	0.83	0.96	0.96
Hourly flow rate (vph)	46	131	139	169	510	57
Pedestrians	40		2		2	
Lane Width (ft)	12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0	
Percent Blockage	3		0		0	
Right turn flare (veh)	Raised					
Median type	None					
Median storage (veh)	1					
Upstream signal (ft)			364		356	
pX, platoon unblocked	0.95	0.95	0.95			
vC, conflicting volume	943	326	608			
vC1, stage 1 conf vol	579					
vC2, stage 2 conf vol	363					
vCu, unblocked vol	887	238	535			
tC, single (s)	6.9	7.0	4.1			
tC, 2 stage (s)	5.9					
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	81	85			
cM capacity (veh/h)	349	697	945			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	177	195	112	340	227	
Volume Left	46	139	0	0	0	
Volume Right	131	0	0	0	57	
cSH	553	945	1700	1700	1700	
Volume to Capacity	0.32	0.15	0.07	0.20	0.13	
Queue Length 95th (ft)	34	13	0	0	0	
Control Delay (s)	14.5	7.1	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	14.5	4.5	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay	3.8					
Intersection Capacity Utilization	43.5%		ICU Level of Service		A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
11: Site Driveway & Albany Street

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Movement	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR	
Lane Configurations	T		T		T		T		T		T	
Sign Control	Stop		Free		Free		Free		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	0	0	10	0	0	0	955	2345	0	0	0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	
Hourly flow rate (vph)	0	0	11	0	0	0	1016	2495	0	0	0	
Pedestrians	4											
Lane Width (ft)	12.0											
Walking Speed (ft/s)	4.0											
Percent Blockage	0											
Right turn flare (veh)	None											
Median type	None											
Median storage (veh)	None											
Upstream signal (ft)							557		158			
pX, platoon unblocked	0.65	0.65	0.65	0.65						0.65		
vC, conflicting volume	4531	4531	836	2499				0		4531		
vC1, stage 1 conf vol	579											
vC2, stage 2 conf vol	363											
vCu, unblocked vol	5343	5343	0	2232				0		5343		
tC, single (s)	7.5	6.5	6.9	4.1				4.1		6.5		
tC, 2 stage (s)	5.9											
tF (s)	3.5	4.0	3.3	2.2				2.2		4.0		
p0 queue free %	100	100	98	100				37		100		
cM capacity (veh/h)	0	0	706	149				1622		1084		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>SB 1</b>	<b>SB 2</b>	<b>SB 3</b>								
Volume Total	11	1515	998	998								
Volume Left	0	1016	0	0								
Volume Right	11	0	0	0								
cSH	706	1622	1700	1700								
Volume to Capacity	0.02	0.63	0.59	0.59								
Queue Length 95th (ft)	1	118	0	0								
Control Delay (s)	10.2	10.5	0.0	0.0								
Lane LOS	B	B										
Approach Delay (s)	10.2	4.5										
Approach LOS	B											
<b>Intersection Summary</b>												
Average Delay	4.5											
Intersection Capacity Utilization	81.9%		ICU Level of Service		D							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
17: Traveler Street & Site Driveway

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2016 Full Build Conditions :: Weekday Evening Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Free		Free		Free		Stop		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	70	350	10	10	90	120	0	0	0	155	0	65
Peak Hour Factor	0.72	0.72	0.72	0.88	0.88	0.88	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	97	486	14	11	102	136	0	0	0	168	0	71
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume												
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol												
tC, single (s)												
tC, 2 stage (s)												
tF (s)												
p0 queue free %												
cM capacity (veh/h)												
Direction, Lane #												
Volume Total												
Volume Left												
Volume Right												
cSH												
Volume to Capacity												
Queue Length 95th (ft)												
Control Delay (s)												
Lane LOS												
Approach Delay (s)												
Approach LOS												
Intersection Summary												
Average Delay												
Intersection Capacity Utilization												
Analysis Period (min)												

HCM Unsignalized Intersection Capacity Analysis  
19: Site Driveway & Harrison Avenue

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2016 Full Build Conditions :: Weekday Evening Peak



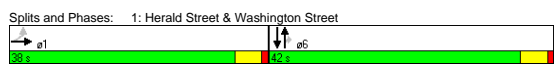
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↕		↕		↕	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	0	25	230	55	0	575
Peak Hour Factor	0.92	0.92	0.83	0.83	0.95	0.95
Hourly flow rate (vph)	0	27	277	66	0	605
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume						
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol						
tC, single (s)						
tC, 2 stage (s)						
tF (s)						
p0 queue free %						
cM capacity (veh/h)						
Direction, Lane #						
Volume Total						
Volume Left						
Volume Right						
cSH						
Volume to Capacity						
Queue Length 95th (ft)						
Control Delay (s)						
Lane LOS						
Approach Delay (s)						
Approach LOS						
Intersection Summary						
Average Delay						
Intersection Capacity Utilization						
Analysis Period (min)						

Lanes, Volumes, Timings  
1: Herald Street & Washington Street

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2016 Full Build Conditions :: Saturday Midday Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕↕↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50						50	50	50	50	
Trailing Detector (ft)	0	0						0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red	No Yes Yes Yes											
Link Speed (mph)	30			30			30			30		
Link Distance (ft)	376			407			347			464		
Travel Time (s)	8.5			9.3			7.9			10.5		
Volume (vph)	45	830	0	0	0	0	0	470	130	0	15	0
Confl. Peds. (#/hr)	11							89	89			
Confl. Bikes (#/hr)	1											
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.93	0.93	0.93	0.94	0.94	0.94
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	100%	100%	100%
Bus Blockages (#/hr)	0	2	2	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	931	0	0	0	0	0	505	140	0	16	0
Turn Type	Perm						Perm					
Protected Phases	1						6					
Permitted Phases	1						6					
Detector Phases	1						6					
Minimum Initial (s)	12.0		12.0		12.0		12.0		12.0		12.0	
Minimum Split (s)	31.0		31.0		31.0		31.0		31.0		31.0	
Total Split (s)	38.0	38.0	0.0	0.0	0.0	0.0	0.0	42.0	42.0	0.0	42.0	0.0
Total Split (%)	47.5%	47.5%	0.0%	0.0%	0.0%	0.0%	0.0%	52.5%	52.5%	0.0%	52.5%	0.0%
Yellow Time (s)	4.0	4.0						4.0	4.0		4.0	
All-Red Time (s)	1.0	1.0						1.0	1.0		1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max					C-Max	C-Max	C-Max			
v/c Ratio	0.49		0.34		0.23		0.04		0.04		0.04	
Control Delay	17.7		14.0		8.4		11.7		11.7		11.7	
Queue Delay	0.0		0.0		0.0		0.0		0.0		0.0	
Total Delay	17.7		14.0		8.4		11.7		11.7		11.7	
Queue Length 50th (ft)	119		79		22		4		4		4	
Queue Length 95th (ft)	155		114		55		14		14		14	
Internal Link Dist (ft)	296		327		267		384		384		384	
Turn Bay Length (ft)												
Base Capacity (vph)	1914						1484		615		406	
Starvation Cap Reductn	0											
Spillback Cap Reductn	0											
Storage Cap Reductn	0											
Reduced v/c Ratio	0.49						0.34		0.23		0.04	

**Intersection Summary**  
Area Type: CBD  
Cycle Length: 80  
Actuated Cycle Length: 80  
Offset: 73 (91%), Referenced to phase 6:NBSB, Start of Green  
Natural Cycle: 65  
Control Type: Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis  
1: Herald Street & Washington Street

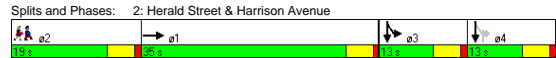
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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕											
Lane Configurations	↕↕↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0											
Lane Util. Factor	0.91			0.95			1.00			1.00		
Frpb, ped/bikes	1.00											
Flpb, ped/bikes	1.00											
Frt	1.00											
Flt Protected	1.00											
Satd. Flow (prot)	4506						3124		1230		855	
Flt Permitted	1.00											
Satd. Flow (perm)	4506						3124		1230		855	
Volume (vph)	45	830	0	0	0	0	0	470	130	0	15	0
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.93	0.93	0.93	0.94	0.94	0.94
Adj. Flow (vph)	48	883	0	0	0	0	0	505	140	0	16	0
RTOR Reduction (vph)	0											
Lane Group Flow (vph)	0	931	0	0	0	0	0	505	109	0	16	0
Confl. Peds. (#/hr)	11		21					89	89			
Confl. Bikes (#/hr)	1											
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	100%	100%	100%
Bus Blockages (#/hr)	0	2	2	0	0	0	0	0	0	0	0	0
Turn Type	Perm						Perm					
Protected Phases	1						6					
Permitted Phases	1						6					
Actuated Green, G (s)	33.0						37.0		37.0		37.0	
Effective Green, g (s)	34.0						38.0		38.0		38.0	
Actuated g/C Ratio	0.42						0.48		0.48		0.48	
Clearance Time (s)	5.0						5.0		5.0		5.0	
Vehicle Extension (s)	3.0						3.0		3.0		3.0	
Lane Grp Cap (vph)	1915						1484		584		406	
v/s Ratio Prot							c0.16		0.02		0.02	
v/s Ratio Perm	0.21						0.09		0.09		0.04	
v/c Ratio	0.49						0.34		0.19		0.04	
Uniform Delay, d1	16.7						13.2		12.1		11.2	
Progression Factor	1.00											
Incremental Delay, d2	0.9						0.6		0.7		0.2	
Delay (s)	17.6						13.8		12.8		11.4	
Level of Service	B						B		B		B	
Approach Delay (s)	17.6						0.0		13.6		11.4	
Approach LOS	B						A		B		B	

**Intersection Summary**  
HCM Average Control Delay: 15.9 HCM Level of Service: B  
HCM Volume to Capacity ratio: 0.41  
Actuated Cycle Length (s): 80.0 Sum of lost time (s): 8.0  
Intersection Capacity Utilization: 42.2% ICU Level of Service: A  
Analysis Period (min): 15  
Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations	↑↑↑												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50									50	50	50	
Trailing Detector (ft)	0									0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red	Yes												
Link Speed (mph)	30			30			30			30		30	
Link Distance (ft)	407			540			356			340		340	
Travel Time (s)	9.3			12.3			8.1			7.7		7.7	
Volume (vph)	0	735	225	0	0	0	0	0	70	90	240	0	
Confl. Bikes (#/hr)									1				
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.82	0.82	0.82	0.98	0.98	0.98	
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	2%	2%	2%	
Parking (#/hr)									2				
Lane Group Flow (vph)	0	1021	0	0	0	0	0	0	85	92	245	0	
Turn Type	custom custom												
Protected Phases	1								3	3	4	2	
Permitted Phases									4	4			
Detector Phases	1								4	3	3	4	
Minimum Initial (s)	1.0								8.0	8.0		4.0	
Minimum Split (s)	19.0								13.0	13.0		19.0	
Total Split (s)	0.0	35.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	13.0	26.0	0.0	19.0
Total Split (%)	0.0%	43.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.3%	16.3%	32.5%	0.0%	24%
Yellow Time (s)	4.0								4.0	4.0		4.0	
All-Red Time (s)	1.0								1.0	1.0		1.0	
Lead/Lag	Lag								Lag	Lead		Lead	
Lead-Lag Optimize?	Yes								Yes	Yes		Yes	
Recall Mode	Max								Max	Max		Max	
v/c Ratio	0.58								0.09	0.21	0.28		
Control Delay	18.6								0.2	23.9	23.8		
Queue Delay	0.0								0.0	0.0	0.0		
Total Delay	18.6								0.2	23.9	23.8		
Queue Length 50th (ft)	127								0	35	50		
Queue Length 95th (ft)	169								0	72	81		
Internal Link Dist (ft)	327			460			276				260		
Turn Bay Length (ft)													
Base Capacity (vph)	1764								965	438	876		
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	0.58								0.09	0.21	0.28		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Natural Cycle: 65  
 Control Type: Semi Act-Uncoord



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0								4.0	4.0	4.0	
Lane Util. Factor	0.91								0.88	1.00	0.95	
Frpb, ped/bikes	1.00								0.99	1.00	1.00	
Flpb, ped/bikes	1.00								1.00	1.00	1.00	
Frt	0.96								0.85	1.00	1.00	
Flt Protected	1.00								1.00	0.95	1.00	
Satd. Flow (prot)	4373								2384	1593	3185	
Flt Permitted	1.00								1.00	0.95	1.00	
Satd. Flow (perm)	4373								2384	1593	3185	
Volume (vph)	0	735	225	0	0	0	0	0	70	90	240	0
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.82	0.82	0.82	0.98	0.98	0.98
Adj. Flow (vph)	0	782	239	0	0	0	0	0	75	92	245	0
RTOR Reduction (vph)	0	69	0	0	0	0	0	0	0	75	0	0
Lane Group Flow (vph)	0	952	0	0	0	0	0	0	10	92	245	0
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	0%	0%	0%	2%	2%	2%
Parking (#/hr)									2			
Turn Type	custom custom											
Protected Phases	1								3	3	4	
Permitted Phases									4	4		
Actuated Green, G (s)	30.0								8.0	16.0	21.0	
Effective Green, g (s)	31.0								9.0	18.0	22.0	
Actuated g/C Ratio	0.39								0.11	0.22	0.28	
Clearance Time (s)	5.0								5.0	5.0		
Vehicle Extension (s)	3.0								2.0	2.0		
Lane Grp Cap (vph)	1695								268	438	876	
v/s Ratio Prot	c0.22								0.02	0.02	c0.08	
v/s Ratio Perm									0.00	0.03		
v/c Ratio	0.56								0.04	0.21	0.28	
Uniform Delay, d1	19.2								31.6	25.5	22.8	
Progression Factor	1.00								1.00	1.00	1.00	
Incremental Delay, d2	1.4								0.2	1.1	0.8	
Delay (s)	20.5								31.9	26.6	23.6	
Level of Service	C								C	C	C	
Approach Delay (s)	20.5			0.0				31.9			24.4	
Approach LOS	C			A				C			C	

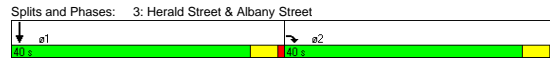
**Intersection Summary**  
 HCM Average Control Delay: 22.1 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.44  
 Actuated Cycle Length (s): 80.0 Sum of lost time (s): 27.0  
 Intersection Capacity Utilization: 44.7% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lanes, Volumes, Timings  
3: Herald Street & Albany Street

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50			50	
Trailing Detector (ft)		0			0	
Turning Speed (mph)	15	9	15			9
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	540			158	348	
Travel Time (s)	12.3			3.6	7.9	
Volume (vph)	0	895	0	0	1050	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.96	0.96
Heavy Vehicles (%)	3%	3%	2%	2%	6%	6%
Lane Group Flow (vph)	0	973	0	0	1094	0
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Detector Phases	2		1			
Minimum Initial (s)	8.0		8.0			
Minimum Split (s)	23.0		23.0			
Total Split (s)	0.0	40.0	0.0	0.0	40.0	0.0
Total Split (%)	0.0%	50.0%	0.0%	0.0%	50.0%	0.0%
Yellow Time (s)	4.0		4.0			
All-Red Time (s)	1.0		1.0			
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	Max		C-Max			
v/c Ratio	0.67		0.55			
Control Delay	20.2		17.4			
Queue Delay	0.0		0.0			
Total Delay	20.2		17.4			
Queue Length 50th (ft)	161		141			
Queue Length 95th (ft)	217		180			
Internal Link Dist (ft)	460		78 268			
Turn Bay Length (ft)						
Base Capacity (vph)	1448		1982			
Starvation Cap Reductn	0		0			
Spillback Cap Reductn	0		0			
Storage Cap Reductn	0		0			
Reduced v/c Ratio	0.67		0.55			

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 10 (13%), Referenced to phase 1:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis  
3: Herald Street & Albany Street

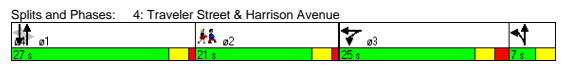
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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			
Lane Util. Factor	0.76		0.91			
Frt	0.85		1.00			
Fit Protected	1.00		1.00			
Satd. Flow (prot)	3217		4404			
Fit Permitted	1.00		1.00			
Satd. Flow (perm)	3217		4404			
Volume (vph)	0	895	0	0	1050	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.96	0.96
Adj. Flow (vph)	0	973	0	0	1094	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	973	0	0	1094	0
Heavy Vehicles (%)	3%	3%	2%	2%	6%	6%
Turn Type	custom					
Protected Phases	2		1			
Permitted Phases						
Actuated Green, G (s)	35.0		35.0			
Effective Green, g (s)	36.0		36.0			
Actuated g/C Ratio	0.45		0.45			
Clearance Time (s)	5.0		5.0			
Vehicle Extension (s)	2.0		2.0			
Lane Grp Cap (vph)	1448		1982			
v/s Ratio Prot	c0.30		c0.25			
v/s Ratio Perm						
v/c Ratio	0.67		0.55			
Uniform Delay, d1	17.3		16.1			
Progression Factor	1.00		1.00			
Incremental Delay, d2	2.5		1.1			
Delay (s)	19.8		17.2			
Level of Service	B		B			
Approach Delay (s)	19.8		0.0	17.2		
Approach LOS	B		A	B		
<b>Intersection Summary</b>						
HCM Average Control Delay	18.5		HCM Level of Service		B	
HCM Volume to Capacity ratio	0.61					
Actuated Cycle Length (s)	80.0		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	52.4%		ICU Level of Service		A	
Analysis Period (min)	15					

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations					↔			↔			↔		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50			50	50				
Trailing Detector (ft)				0	0			0	0				
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			Yes		No
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		417			343			372			197		
Travel Time (s)		9.5			7.8			8.5			4.5		
Volume (vph)	0	0	0	85	60	40	80	195	135	160	235	150	
Confl. Bikes (#/hr)					1			4			4		
Peak Hour Factor	0.92	0.92	0.92	0.77	0.77	0.77	0.90	0.90	0.90	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%	
Lane Group Flow (vph)	0	0	0	0	240	0	0	456	0	0	592	0	
Turn Type				Split			D.P+P			Perm			
Protected Phases				3	3		4	14			1		2
Permitted Phases							1			1			
Detector Phases				3	3		4	14		1	1		
Minimum Initial (s)				7.0	7.0		4.0			7.0	7.0		2.0
Minimum Split (s)				21.0	21.0		7.0			20.0	20.0		21.0
Total Split (s)	0.0	0.0	0.0	25.0	25.0	0.0	7.0	34.0	0.0	27.0	27.0	0.0	21.0
Total Split (%)	0.0%	0.0%	0.0%	31.3%	31.3%	0.0%	8.8%	42.5%	0.0%	33.8%	33.8%	0.0%	26%
Yellow Time (s)				3.0	3.0		3.0			3.0	3.0		3.0
All-Red Time (s)				2.0	2.0		0.0			1.0	1.0		1.0
Lead/Lag				Lead	Lead		Lag			Lead	Lead		Lag
Lead-Lag Optimize?				Yes	Yes		Yes			Yes	Yes		Yes
Recall Mode				Max	Max		Max			C-Max	C-Max		None
v/c Ratio				0.19			0.59			1.04			
Control Delay				15.3			18.9			78.6			
Queue Delay				0.0			0.0			0.0			
Total Delay				15.3			18.9			78.6			
Queue Length 50th (ft)				24			62			-170			
Queue Length 95th (ft)				58			101			#271			
Internal Link Dist (ft)		337			263			292			117		
Turn Bay Length (ft)													
Base Capacity (vph)				1264			775			570			
Starvation Cap Reductn				0			0			0			
Spillback Cap Reductn				0			0			0			
Storage Cap Reductn				0			0			0			
Reduced v/c Ratio				0.19			0.59			1.04			

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 20 (25%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔			↔			↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0			4.0			4.0	
Lane Util. Factor					0.95			0.95			0.95	
Frbp, ped/bikes					1.00			0.99			0.99	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.97			0.95			0.96	
Flt Protected					0.98			0.99			0.99	
Satd. Flow (prot)					2947			2974			2988	
Flt Permitted					0.98			0.65			0.64	
Satd. Flow (perm)					2947			1965			1954	
Volume (vph)	0	0	0	85	60	40	80	195	135	160	235	150
Peak-hour factor, PHF	0.92	0.92	0.92	0.77	0.77	0.77	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	110	78	52	89	217	150	174	255	163
RTOR Reduction (vph)	0	0	0	0	25	0	0	78	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	215	0	0	378	0	0	592	0
Confl. Bikes (#/hr)					1			1965		4	1954	
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type				Split			D.P+P			Perm		
Protected Phases				3	3		4	14			1	
Permitted Phases							1			1		
Actuated Green, G (s)					32.6			24.6			20.6	
Effective Green, g (s)					33.6			23.6			20.6	
Actuated g/C Ratio					0.42			0.30			0.26	
Clearance Time (s)					5.0			4.0			4.0	
Vehicle Extension (s)					2.0			2.0			2.0	
Lane Grp Cap (vph)					1238			618			503	
v/s Ratio Prot					c0.07			c0.02				
v/s Ratio Perm								0.16			c0.30	
v/c Ratio					0.17			0.61			1.18	
Uniform Delay, d1					14.5			24.3			29.7	
Progression Factor					1.00			1.00			1.00	
Incremental Delay, d2					0.3			4.5			98.8	
Delay (s)					14.8			28.7			128.5	
Level of Service					B			C			F	
Approach Delay (s)		0.0			14.8			28.7			128.5	
Approach LOS		A			B			C			F	

**Intersection Summary**  
 HCM Average Control Delay: 72.0 HCM Level of Service: E  
 HCM Volume to Capacity ratio: 0.56  
 Actuated Cycle Length (s): 80.0 Sum of lost time (s): 22.8  
 Intersection Capacity Utilization: 47.1% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lanes, Volumes, Timings  
5: Traveler Street & Albany Street

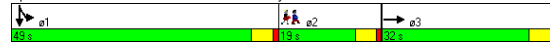
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50									50	50		
Trailing Detector (ft)	0									0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes	Yes		Yes		No
Link Speed (mph)	30			30			30			30			
Link Distance (ft)	170			322			416			557			
Travel Time (s)	3.9			7.3			9.5			12.7			
Volume (vph)	0	270	135	0	0	0	0	0	0	535	495	260	
Confl. Bikes (#/hr)		5											
Peak Hour Factor	0.82	0.82	0.82	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	5%	5%	5%	
Lane Group Flow (vph)	0	494	0	0	0	0	0	0	0	575	812	0	
Turn Type										Split			
Protected Phases	3									1	1		2
Permitted Phases													
Detector Phases	3									1	1		
Minimum Initial (s)	8.0									10.0	10.0		4.0
Minimum Split (s)	24.0									24.0	24.0		19.0
Total Split (s)	0.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.0	49.0	0.0	19.0
Total Split (%)	0.0%	32.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	49.0%	49.0%	0.0%	19%
Yellow Time (s)	4.0									4.0	4.0		4.0
All-Red Time (s)	1.0									1.0	1.0		1.0
Lead/Lag										Lead	Lead		Lag
Lead-Lag Optimize?										Yes	Yes		Yes
Recall Mode	None									C-Max	C-Max		None
v/c Ratio	0.79									0.50	0.42		
Control Delay	41.0									3.3	9.4		
Queue Delay	0.0									0.0	0.0		
Total Delay	41.0									3.3	9.4		
Queue Length 50th (ft)	132									7	90		
Queue Length 95th (ft)	155									95	262		
Internal Link Dist (ft)	90			242			336			477			
Turn Bay Length (ft)													
Base Capacity (vph)	897									1140	1955		
Starvation Cap Reductn	0									0	0		
Spillback Cap Reductn	0									4	0		
Storage Cap Reductn	0									0	0		
Reduced v/c Ratio	0.55									0.51	0.42		

Intersection Summary

Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 39 (39%), Referenced to phase 1:SBTL, Start of Green  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated

Splits and Phases: 5: Traveler Street & Albany Street



HCM Signalized Intersection Capacity Analysis  
5: Traveler Street & Albany Street

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0									4.0	4.0	
Lane Util. Factor	0.95									0.91	0.91	
Frpb, ped/bikes	0.99									1.00	1.00	
Flpb, ped/bikes	1.00									1.00	1.00	
Frt	0.95									1.00	0.95	
Flt Protected	1.00									0.95	1.00	
Satd. Flow (prot)	2978									1408	2811	
Flt Permitted	1.00									0.95	1.00	
Satd. Flow (perm)	2978									1408	2811	
Volume (vph)	0	270	135	0	0	0	0	0	0	535	495	260
Peak-hour factor, PHF	0.82	0.82	0.82	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	329	165	0	0	0	0	0	0	575	532	280
RTOR Reduction (vph)	0	71	0	0	0	0	0	0	0	182	0	0
Lane Group Flow (vph)	0	423	0	0	0	0	0	0	0	393	812	0
Confl. Bikes (#/hr)		5										
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Turn Type										Split		
Protected Phases	3									1	1	
Permitted Phases												
Actuated Green, G (s)	17.6									64.6	64.6	
Effective Green, g (s)	18.6									65.6	65.6	
Actuated g/C Ratio	0.19									0.66	0.66	
Clearance Time (s)	5.0									5.0	5.0	
Vehicle Extension (s)	2.0									2.0	2.0	
Lane Grp Cap (vph)	554									924	1844	
v/s Ratio Prot	c0.14									0.28	c0.29	
v/s Ratio Perm												
v/c Ratio	0.76									0.43	0.44	
Uniform Delay, d1	38.6									8.2	8.3	
Progression Factor	1.00									1.00	1.00	
Incremental Delay, d2	5.6									1.4	0.8	
Delay (s)	44.2									9.6	9.1	
Level of Service	D									A	A	
Approach Delay (s)	44.2			0.0			0.0			A	9.3	
Approach LOS	D			A			A			A	A	

Intersection Summary

HCM Average Control Delay: 18.5, HCM Level of Service: B  
 HCM Volume to Capacity ratio: 0.51  
 Actuated Cycle Length (s): 100.0, Sum of lost time (s): 15.8  
 Intersection Capacity Utilization: 47.6%, ICU Level of Service: A  
 Analysis Period (min): 15  
 Critical Lane Group



Lanes, Volumes, Timings  
6: Traveler Street & Frontage Road

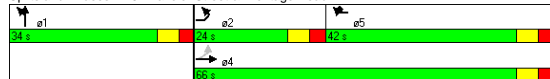
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	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0
Turning Speed (mph)	15	15		9	9	15		9
Right Turn on Red	No			Yes				No
Link Speed (mph)			30				30	
Link Distance (ft)			322				432	
Travel Time (s)			7.3				9.8	
Volume (vph)	80	280	445	105	405	195	385	25
Confl. Peds. (#/hr)				10	10			4
Peak Hour Factor	0.99	0.99	0.99	0.80	0.80	0.94	0.94	0.94
Heavy Vehicles (%)	4%	4%	4%	3%	3%	9%	9%	9%
Lane Group Flow (vph)	0	364	449	131	506	207	437	0
Turn Type	Prot	Perm		custom	custom	Split		
Protected Phases	2	4	5	5	1	1		
Permitted Phases		4						
Detector Phases	2	4	4	5	5	1	1	
Minimum Initial (s)	10.0	10.0	10.0	8.0	8.0	10.0	10.0	
Minimum Split (s)	24.0	34.0	34.0	34.0	34.0	34.0	34.0	
Total Split (s)	24.0	66.0	66.0	42.0	42.0	34.0	34.0	0.0
Total Split (%)	24.0%	66.0%	66.0%	42.0%	42.0%	34.0%	34.0%	0.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead			Lag	Lag			
Lead-Lag Optimize?	Yes			Yes	Yes			
Recall Mode	Max	Max	Max	Max	Max	Max	Max	
v/c Ratio	0.38	0.23	0.28	0.28	0.68	0.24	0.34	
Control Delay	10.8	8.8	23.5	13.1	27.3	28.3		
Queue Delay	2.6	0.6	0.0	0.0	0.0	0.0		
Total Delay	13.5	9.4	23.5	13.1	27.3	28.3		
Queue Length 50th (ft)	106	61	64	77	51	79		
Queue Length 95th (ft)	162	85	102	135	80	109		
Internal Link Dist (ft)			242				352	
Turn Bay Length (ft)								
Base Capacity (vph)	968	1937	472	748	867	1272		
Starvation Cap Reductn	474	1082	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0		
Reduced v/c Ratio	0.74	0.53	0.28	0.68	0.24	0.34		

Intersection Summary

Area Type: CBD  
Cycle Length: 100  
Actuated Cycle Length: 100  
Natural Cycle: 95  
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Traveler Street & Frontage Road



HCM Signalized Intersection Capacity Analysis  
6: Traveler Street & Frontage Road

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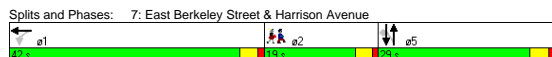
	EBL2	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.97	0.91		
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	1.00	0.85	0.85	1.00	0.99		
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1562	3124	1242	1411	2891	4239		
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1562	3124	1242	1411	2891	4239		
Volume (vph)	80	280	445	105	405	195	385	25
Peak-hour factor, PHF	0.99	0.99	0.99	0.80	0.80	0.94	0.94	0.94
Adj. Flow (vph)	81	283	448	131	506	207	410	27
RTOR Reduction (vph)	0	0	0	0	212	0	0	0
Lane Group Flow (vph)	0	364	449	131	294	207	437	0
Confl. Peds. (#/hr)				10	10			4
Heavy Vehicles (%)	4%	4%	4%	3%	3%	9%	9%	9%
Turn Type	Prot	Perm		custom	custom	Split		
Protected Phases	2	4	5	5	1	1		
Permitted Phases		4						
Actuated Green, G (s)	59.0	59.0	35.0	35.0	27.0	27.0		
Effective Green, g (s)	62.0	62.0	38.0	38.0	30.0	30.0		
Actuated g/C Ratio	0.62	0.62	0.38	0.38	0.30	0.30		
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0		
Lane Grp Cap (vph)	968	1937	472	536	867	1272		
v/s Ratio Prot			0.14	0.11	c0.21	0.07	c0.10	
v/s Ratio Perm		c0.23						
v/c Ratio	0.38	0.23	0.28	0.55	0.24	0.34		
Uniform Delay, d1	9.4	8.4	21.5	24.3	26.4	27.3		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	1.1	0.3	1.5	4.0	0.6	0.7		
Delay (s)	10.5	8.7	22.9	28.3	27.0	28.1		
Level of Service	B	A	C	C	C	C		
Approach Delay (s)		9.5				27.7		
Approach LOS		A				C		

Intersection Summary

HCM Average Control Delay: 20.5, HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.45  
 Actuated Cycle Length (s): 100.0, Sum of lost time (s): 12.0  
 Intersection Capacity Utilization: 75.1%, ICU Level of Service: D  
 Analysis Period (min): 15  
 c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations				↔↔↔	↔↔↔	↔↔↔		↔		↔	↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50			50	50			50	
Trailing Detector (ft)				0	0			0	0			0	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		496			501			284			372		
Travel Time (s)		11.3			11.4			6.5			8.5		
Volume (vph)	0	0	0	130	585	205	65	190	0	0	175	150	
Confl. Bikes (#/hr)					1							1	
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.86	0.86	0.86	0.83	0.83	0.83	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	5	5	0	0	0	0	0	0	
Parking (#/hr)							1	1					
Lane Group Flow (vph)	0	0	0	0	1033	0	0	297	0	0	211	181	
Turn Type				Perm		Perm					Perm		
Protected Phases				1		5					5		2
Permitted Phases				1		5					5		
Detector Phases				1	1		5	5			5	5	
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	5.0	4.0
Minimum Split (s)				22.0	22.0		20.0	20.0			20.0	20.0	19.0
Total Split (s)	0.0	0.0	0.0	42.0	42.0	0.0	29.0	29.0	0.0	0.0	29.0	29.0	19.0
Total Split (%)	0.0%	0.0%	0.0%	46.7%	46.7%	0.0%	32.2%	32.2%	0.0%	0.0%	32.2%	32.2%	21%
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0	3.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0	1.0
Lead/Lag				Lead	Lead						Lag	Lag	
Lead-Lag Optimize?				Yes	Yes						Yes	Yes	
Recall Mode				C-Max	C-Max		Max	Max		Max	Max	None	
v/c Ratio				0.54			0.61			0.31	0.27		
Control Delay				18.7			32.0			23.0	5.3		
Queue Delay				0.0			0.0			0.0	0.0		
Total Delay				18.7			32.0			23.0	5.3		
Queue Length 50th (ft)				141			110			67	0		
Queue Length 95th (ft)				179			#289			150	37		
Internal Link Dist (ft)		416			421			204			292		
Turn Bay Length (ft)													
Base Capacity (vph)					1896			488			672	672	
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			0.61			0.31	0.27	

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 56 (62%), Referenced to phase 1:WBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔↔	↔↔↔	↔↔↔		↔		↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0			4.0			4.0	4.0
Lane Util. Factor				0.91				1.00			1.00	1.00
Frpb, ped/bikes				1.00				1.00			1.00	1.00
Flpb, ped/bikes				1.00				1.00			1.00	1.00
Frt				0.97				1.00			1.00	0.85
Flt Protected				0.99				0.99			1.00	1.00
Satd. Flow (prot)				4351				1481			1660	1393
Flt Permitted				0.99				0.87			1.00	1.00
Satd. Flow (perm)				4351				1306			1660	1393
Volume (vph)	0	0	0	130	585	205	65	190	0	0	175	150
Peak-hour factor, PHF	0.92	0.92	0.92	0.89	0.89	0.89	0.86	0.86	0.86	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	146	657	230	76	221	0	0	211	181
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	108
Lane Group Flow (vph)	0	0	0	0	973	0	0	297	0	0	211	73
Confl. Bikes (#/hr)					1						1	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	5	5	0	0	0	0	0	0
Parking (#/hr)							1	1				
Turn Type				Perm		Perm					Perm	
Protected Phases				1		5					5	
Permitted Phases				1		5					5	
Actuated Green, G (s)				35.6		36.4					36.4	36.4
Effective Green, g (s)				35.6		36.4					36.4	36.4
Actuated g/C Ratio				0.40		0.40					0.40	0.40
Clearance Time (s)				4.0		4.0					4.0	4.0
Vehicle Extension (s)				2.0		2.0					2.0	2.0
Lane Grp Cap (vph)				1721		528					671	563
v/s Ratio Prot											0.13	
v/s Ratio Perm				0.22		0.23					0.05	
v/c Ratio				0.57		0.56					0.31	0.13
Uniform Delay, d1				21.2		20.7					18.3	16.8
Progression Factor				1.00		1.00					1.00	1.00
Incremental Delay, d2				1.3		4.3					1.2	0.5
Delay (s)				22.5		25.0					19.5	17.3
Level of Service				C		C					B	B
Approach Delay (s)	0.0			22.5		25.0					18.5	
Approach LOS	A			C		C					B	

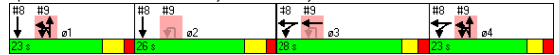
**Intersection Summary**  
 HCM Average Control Delay: 22.0 HCM Level of Service: C  
 HCM Volume to Capacity ratio: 0.56  
 Actuated Cycle Length (s): 90.0 Sum of lost time (s): 18.0  
 Intersection Capacity Utilization: 56.0% ICU Level of Service: B  
 Analysis Period (min): 15  
 Critical Lane Group

Lanes, Volumes, Timings  
8: East Berkeley Street & Albany Street

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø3	ø4
Lane Configurations					↑↑						↑↑↑					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Leading Detector (ft)				50	50						50					
Trailing Detector (ft)				0	0						0					
Turning Speed (mph)	15		9	15		9	15		9	15		9				
Right Turn on Red			Yes	Yes		Yes			Yes		No					
Link Speed (mph)		30			30			30			30					
Link Distance (ft)		501			316			383			416					
Travel Time (s)		11.4			7.2			8.7			9.5					
Volume (vph)	0	0	0	140	665	0	0	0	0	0	345	285				
Confl. Peds. (#/hr)																6
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.83	0.83	0.83				
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	7%	7%	7%				
Lane Group Flow (vph)	0	0	0	0	866	0	0	0	0	0	759	0				
Turn Type				Split												
Protected Phases		3.4	3.4								1.2		1	2	3	4
Permitted Phases																
Detector Phases				3.4	3.4						1.2					
Minimum Initial (s)													11.0	18.0	8.0	8.0
Minimum Split (s)													22.0	26.0	25.0	23.0
Total Split (s)	0.0	0.0	0.0	51.0	51.0	0.0	0.0	0.0	0.0	0.0	49.0	0.0	23.0	26.0	28.0	23.0
Total Split (%)	0.0%	0.0%	0.0%	51.0%	51.0%	0.0%	0.0%	0.0%	0.0%	0.0%	49.0%	0.0%	23%	26%	28%	23%
Yellow Time (s)													4.0	4.0	3.0	3.0
All-Red Time (s)													2.0	2.0	2.0	2.0
Lead/Lag													Lead	Lag	Lead	Lag
Lead-Lag Optimize?													Yes	Yes	Yes	Yes
Recall Mode													Max	C-Max	None	None
v/c Ratio					0.59						0.42					
Control Delay					9.5						24.0					
Queue Delay					1.1						0.0					
Total Delay					10.6						24.0					
Queue Length 50th (ft)					71						127					
Queue Length 95th (ft)					84						193					
Internal Link Dist (ft)		421			236			303			336					
Turn Bay Length (ft)																
Base Capacity (vph)					1449						1818					
Starvation Cap Reductn					329						0					
Spillback Cap Reductn					0						0					
Storage Cap Reductn					0						0					
Reduced v/c Ratio					0.77						0.42					

Splits and Phases: 8: East Berkeley Street & Albany Street



HCM Signalized Intersection Capacity Analysis  
8: East Berkeley Street & Albany Street

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑						↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)					4.0						4.0	
Lane Util. Factor					0.95						0.91	
Frpb, ped/bikes					1.00						0.99	
Flpb, ped/bikes					1.00						1.00	
FrT					1.00						0.93	
FlT Protected					0.99						1.00	
Satd. Flow (prot)					3097						4025	
FlT Permitted					0.99						1.00	
Satd. Flow (perm)					3097						4025	
Volume (vph)	0	0	0	140	665	0	0	0	0	0	345	285
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	151	715	0	0	0	0	0	416	343
RTOR Reduction (vph)	0	0	0	18	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	848	0	0	0	0	0	759	0
Confl. Peds. (#/hr)											6	
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	7%	7%	7%
Turn Type				Split								
Protected Phases					3.4	3.4					1.2	
Permitted Phases												
Actuated Green, G (s)					45.8						43.2	
Effective Green, g (s)					46.8						45.2	
Actuated g/C Ratio					0.47						0.45	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1449						1819	
v/s Ratio Prot					c0.27						c0.19	
v/s Ratio Perm												
v/c Ratio					0.59						0.42	
Uniform Delay, d1					19.5						18.5	
Progression Factor					0.43						1.24	
Incremental Delay, d2					0.3						0.6	
Delay (s)					8.6						23.7	
Level of Service					A						C	
Approach Delay (s)	0.0				8.6			0.0			23.7	
Approach LOS	A				A			A			C	

Intersection Summary

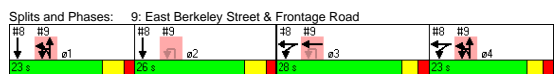
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings  
 9: East Berkeley Street & Frontage Road

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø1	ø2	ø4	
Lane Configurations																
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Storage Length (ft)	0	0	0	0	200	0	0	0	0	0	0	0				
Storage Lanes	0	0	0	0	2	1	0	0	0	0	0	0				
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Leading Detector (ft)					50		50		50							
Trailing Detector (ft)					0		0		0							
Turning Speed (mph)	15		9	15		9	9	15		9	15		9			
Right Turn on Red	Yes No Yes No Yes No Yes No Yes No Yes No Yes No Yes No															
Link Speed (mph)		30			30			30			30					
Link Distance (ft)		316			383			366			432					
Travel Time (s)		7.2			8.7			8.3			9.8					
Volume (vph)	0	0	0	0	415	80	30	390	525	140	0	0	0	0	0	
Confl. Peds. (#/hr)					8			4								
Confl. Bikes (#/hr)					4											
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.93	0.93	0.93	0.92	0.92	0.92			
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	7%	7%	2%	2%	2%				
Lane Group Flow (vph)	0	0	0	0	550	0	0	452	716	0	0	0	0			
Turn Type	custom Split															
Protected Phases	3 1.4 1.4 1.4 1 2 4															
Permitted Phases	2 3															
Detector Phases	3 1.4 1.4 1.4															
Minimum Initial (s)	8.0															
Minimum Split (s)	25.0															
Total Split (s)	0.0	0.0	0.0	0.0	28.0	0.0	46.0	46.0	46.0	0.0	0.0	0.0	0.0	22.0	26.0	23.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	28.0%	0.0%	46.0%	46.0%	46.0%	0.0%	0.0%	0.0%	0.0%	23%	26%	23%
Yellow Time (s)	3.0															
All-Red Time (s)	2.0															
Lead/Lag	Lead Lag Lag															
Lead-Lag Optimize?	Yes Yes Yes															
Recall Mode	None Max C-Max None															
w/c Ratio	0.54 0.55 0.60															
Control Delay	35.6 5.5 25.1															
Queue Delay	0.1 0.0 0.0															
Total Delay	35.7 5.5 25.1															
Queue Length 50th (ft)	112 13 190															
Queue Length 95th (ft)	149 89 254															
Internal Link Dist (ft)	236	303 286 352														
Turn Bay Length (ft)																
Base Capacity (vph)	1027 827 1189															
Starvation Cap Reductn	0 0 0															
Spillback Cap Reductn	48 4 0															
Storage Cap Reductn	0 0 0															
Reduced w/c Ratio	0.56 0.55 0.60															

Intersection Summary	
Area Type:	CBD
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:SBT and 6:, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis  
 9: East Berkeley Street & Frontage Road

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 2016 Full Build Conditions :: Saturday Middy Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0 4.0 4.0												
Lane Util. Factor	0.91 0.91 0.91												
Frpb, ped/bikes	1.00 1.00 1.00												
Flpb, ped/bikes	1.00 1.00 1.00												
Fit	0.98 1.00 0.97												
Fit Protected	1.00 0.95 1.00												
Satd. Flow (prot)	4277 1386 2817												
Fit Permitted	1.00 0.95 1.00												
Satd. Flow (perm)	4277 1386 2817												
Volume (vph)	0	0	0	0	415	80	30	390	525	140	0	0	
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.93	0.93	0.93	0.92	0.92	
Adj. Flow (vph)	0	0	0	0	461	89	33	419	565	151	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	242	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	550	0	0	210	716	0	0	0	
Confl. Peds. (#/hr)	8												
Confl. Bikes (#/hr)	4												
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	7%	7%	2%	2%	2%	
Turn Type	custom Split												
Protected Phases	3 1.4 1.4												
Permitted Phases	2 3												
Actuated Green, G (s)	22.8 40.2 40.2												
Effective Green, g (s)	23.8 42.2 42.2												
Actuated g/C Ratio	0.24 0.42 0.42												
Clearance Time (s)	5.0												
Vehicle Extension (s)	2.0												
Lane Grp Cap (vph)	1018 585 1189												
v/s Ratio Prot	c0.13 0.15 c0.25												
v/s Ratio Perm													
w/c Ratio	0.54 0.36 0.60												
Uniform Delay, d1	33.3 19.7 22.4												
Progression Factor	1.00 1.00 1.00												
Incremental Delay, d2	0.3 0.1 0.6												
Delay (s)	33.6 19.8 23.0												
Level of Service	C C C												
Approach Delay (s)	0.0	33.6										21.8	0.0
Approach LOS	A	C										C	A

Intersection Summary	
HCM Average Control Delay	25.6 HCM Level of Service C
HCM Volume to Capacity ratio	0.58
Actuated Cycle Length (s)	100.0 Sum of lost time (s) 34.0
Intersection Capacity Utilization	41.5% ICU Level of Service A
Analysis Period (min)	15
c	Critical Lane Group

Lanes, Volumes, Timings

12: Traveler Street & Washington Street

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50	
Trailing Detector (ft)	0	0			0	
Turning Speed (mph)	15	9		9	15	
Right Turn on Red	Yes		Yes			
Link Speed (mph)	25		25			30
Link Distance (ft)	417		397			312
Travel Time (s)	11.4		10.8			7.1
Volume (vph)	0	310	385	0	0	15
Peak Hour Factor	1.00	1.00	0.92	0.92	0.70	0.70
Heavy Vehicles (%)	2%	2%	6%	6%	100%	100%
Lane Group Flow (vph)	0	310	418	0	0	21
Turn Type	custom					
Protected Phases	5		1			1
Permitted Phases	1					
Detector Phases	5		1			1
Minimum Initial (s)	8.0		10.0			10.0
Minimum Split (s)	28.0		28.0			28.0
Total Split (s)	0.0	36.0	44.0	0.0	0.0	44.0
Total Split (%)	0.0%	45.0%	55.0%	0.0%	0.0%	55.0%
Yellow Time (s)	3.0		3.0			3.0
All-Red Time (s)	1.0		1.0			1.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	C-Max			C-Max	
v/c Ratio	0.21	0.12			0.03	
Control Delay	0.2	2.0			2.1	
Queue Delay	0.0	0.0			0.0	
Total Delay	0.2	2.0			2.1	
Queue Length 50th (ft)	0	11			2	
Queue Length 95th (ft)	m0	20			4	
Internal Link Dist (ft)	337		317			232
Turn Bay Length (ft)						
Base Capacity (vph)	1450	3492			678	
Starvation Cap Reductn	0	0			0	
Spillback Cap Reductn	0	0			0	
Storage Cap Reductn	0	0			0	
Reduced v/c Ratio	0.21	0.12			0.03	

Intersection Summary

Area Type: CBD

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 6 (8%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Traveler Street & Washington Street



HCM Signalized Intersection Capacity Analysis

12: Traveler Street & Washington Street

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2016 Full Build Conditions :: Saturday Midday Peak

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor	1.00	0.91				1.00
Fr	0.86	1.00				1.00
Flt Protected	1.00	1.00				1.00
Satd. Flow (prot)	1450	4404				855
Flt Permitted	1.00	1.00				1.00
Satd. Flow (perm)	1450	4404				855
Volume (vph)	0	310	385	0	0	15
Peak-hour factor, PHF	1.00	1.00	0.92	0.92	0.70	0.70
Adj. Flow (vph)	0	310	418	0	0	21
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	310	418	0	0	21
Heavy Vehicles (%)	2%	2%	6%	6%	100%	100%
Turn Type	custom					
Protected Phases	5		1			1
Permitted Phases	1					
Actuated Green, G (s)	72.0		63.4			63.4
Effective Green, g (s)	72.0		63.4			63.4
Actuated g/C Ratio	0.90		0.79			0.79
Clearance Time (s)	4.0		4.0			4.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1450		3490			678
v/s Ratio Prot	c0.02		0.09			0.02
v/s Ratio Perm	0.19					
v/c Ratio	0.21	0.12				0.03
Uniform Delay, d1	0.5	1.9				1.8
Progression Factor	1.00	1.00				1.00
Incremental Delay, d2	0.0	0.1				0.1
Delay (s)	0.5	2.0				1.9
Level of Service	A	A				A
Approach Delay (s)	0.5		2.0			1.9
Approach LOS	A		A			A

Intersection Summary

HCM Average Control Delay 1.4 HCM Level of Service A

HCM Volume to Capacity ratio 0.21

Actuated Cycle Length (s) 80.0 Sum of lost time (s) 0.0

Intersection Capacity Utilization 36.3% ICU Level of Service A

Analysis Period (min) 15

c Critical Lane Group

Lanes, Volumes, Timings  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0	0	0	0	0	80	0	0	0	0	0	
Storage Lanes	0	0	0	0	0	1	0	0	0	0	0	0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50		50	50		50			
Trailing Detector (ft)				9	0		9	0		9	15		9
Turning Speed (mph)	15			15			15			15			
Right Turn on Red		Yes			Yes			Yes			Yes		
Link Speed (mph)		25			30			25			30		
Link Distance (ft)		332			496			464			397		
Travel Time (s)		9.1			11.3			12.7			9.0		
Volume (vph)	0	0	0	100	605	115	95	270	0	0	15	0	
Confl. Peds. (#/hr)				106		94	81						
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.94	0.94	0.94	0.88	0.88	0.88	
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	6%	6%	6%	100%	100%	100%	
Lane Group Flow (vph)	0	0	0	854	0	854	0	101	287	0	0	17	0
Turn Type				Split		Perm							
Protected Phases				5	5			1			1		2
Permitted Phases							1						
Detector Phases				5	5			1			1		
Minimum Initial (s)				8.0	8.0		20.0	20.0			20.0		2.0
Minimum Split (s)				25.0	25.0		24.0	24.0			24.0		24.0
Total Split (s)	0.0	0.0	0.0	48.0	48.0	0.0	28.0	28.0	0.0	0.0	28.0	0.0	24.0
Total Split (%)	0.0%	0.0%	0.0%	48.0%	48.0%	0.0%	28.0%	28.0%	0.0%	0.0%	28.0%	0.0%	24%
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0		2.0
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0		0.0
Lead/Lag							Lead	Lead			Lead		Lag
Lead-Lag Optimize?													
Recall Mode				None	None		C-Min	C-Min			C-Min		None
v/c Ratio				0.81	0.81		0.17	0.33			0.04		
Control Delay				40.5	40.5		17.8	18.4			18.1		
Queue Delay				0.0	0.0		0.0	0.0			0.0		
Total Delay				40.5	40.5		17.8	18.4			18.1		
Queue Length 50th (ft)				180	38		120			6			
Queue Length 95th (ft)				210	83		212			21			
Internal Link Dist (ft)	252			416			384			317			
Turn Bay Length (ft)							80						
Base Capacity (vph)				1943			586	872			462		
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			0.17	0.33			0.04		

**Intersection Summary**

Area Type: CBD

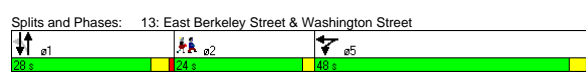
Cycle Length: 100

Actuated Cycle Length: 100

Offset: 98 (98%), Referenced to phase 1:NBSB, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis  
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 2016 Full Build Conditions :: Saturday Midday Peak

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)												
Lane Util. Factor				0.91	1.00	1.00	1.00					
Frbp, ped/bikes				0.98	1.00	1.00	1.00					
Flpb, ped/bikes				1.00	0.96	1.00	1.00					
Frt				0.98	1.00	1.00	1.00					
Fit Protected				0.99	0.95	1.00	1.00					
Satd. Flow (prot)				4330	1464	1613	1613					
Fit Permitted				0.99	0.75	1.00	1.00					
Satd. Flow (perm)				4330	1150	1613	1613					
Volume (vph)	0	0	0	100	605	115	95	270	0	0	15	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.94	0.94	0.94	0.88	0.88	0.88
Adj. Flow (vph)	0	0	0	104	630	120	101	287	0	0	17	0
RTOR Reduction (vph)	0	0	0	0	31	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	823	0	101	287	0	0	17	0
Confl. Peds. (#/hr)				106		94	81					
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	6%	6%	6%	100%	100%	100%
Turn Type				Split		Perm						
Protected Phases				5	5			1			1	
Permitted Phases							1					
Actuated Green, G (s)				23.5	53.3	53.3					53.3	
Effective Green, g (s)				23.5	53.3	53.3					53.3	
Actuated g/C Ratio				0.24	0.53	0.53					0.53	
Clearance Time (s)				4.0	4.0	4.0					4.0	
Vehicle Extension (s)				3.0	3.0	3.0					3.0	
Lane Grp Cap (vph)				1018	613	860					456	
v/s Ratio Prot				c0.19				c0.18			0.02	
v/s Ratio Perm						0.09						
v/c Ratio				0.81	0.16	0.33					0.04	
Uniform Delay, d1				36.1	12.0	13.3					11.1	
Progression Factor				1.00	1.00	1.00					1.00	
Incremental Delay, d2				4.8	0.6	1.0					0.2	
Delay (s)				40.9	12.5	14.3					11.3	
Level of Service				D		B					B	
Approach Delay (s)		0.0			40.9			13.8			11.3	
Approach LOS		A			D			B			B	

**Intersection Summary**

HCM Average Control Delay: 32.2 HCM Level of Service: C

HCM Volume to Capacity ratio: 0.48

Actuated Cycle Length (s): 100.0 Sum of lost time (s): 23.2

Intersection Capacity Utilization: 42.2% ICU Level of Service: A

Analysis Period (min): 15

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
10: William E Mullins Way & Harrison Avenue

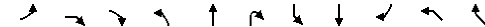
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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	15	110	120	65	430	70
Peak Hour Factor	0.87	0.87	0.88	0.88	0.94	0.94
Hourly flow rate (vph)	17	126	136	74	457	74
Pedestrians	42		2		6	
Lane Width (ft)	12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0	
Percent Blockage	4		0		0	
Right turn flare (veh)	Raised					
Median type	Raised					
Median storage (veh)	1					
Upstream signal (ft)			364		356	
pX, platoon unblocked	0.96	0.96	0.96			
vC, conflicting volume	852	310	574			
vC1, stage 1 conf vol	537					
vC2, stage 2 conf vol	316					
vCu, unblocked vol	809	246	520			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	82	86			
cM capacity (veh/h)	382	706	969			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	144	161	49	305	227	
Volume Left	17	136	0	0	0	
Volume Right	126	0	0	0	74	
cSH	641	969	1700	1700	1700	
Volume to Capacity	0.22	0.14	0.03	0.18	0.13	
Queue Length 95th (ft)	21	12	0	0	0	
Control Delay (s)	12.2	8.1	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	12.2	6.2		0.0		
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay	3.5					
Intersection Capacity Utilization	42.5%		ICU Level of Service		A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
11: Boston Herald Back & Albany Street

10995.00 :: Boston Herald Redevelopment  
2016 Full Build Conditions :: Saturday MIDDAY Peak



Movement	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations	T		T		T		T		T		
Sign Control	Stop		Free		Free		Free		Stop		
Grade	0%		0%		0%		0%		0%		
Volume (veh/h)	0	0	10	0	0	0	665	1280	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.92	0.92	
Hourly flow rate (vph)	0	0	11	0	0	0	693	1333	0	0	0
Pedestrians	4										
Lane Width (ft)	12.0										
Walking Speed (ft/s)	4.0										
Percent Blockage	0										
Right turn flare (veh)	None										
Median type	None										
Median storage (veh)	None										
Upstream signal (ft)						557		158			
pX, platoon unblocked	0.83	0.83	0.83	0.83				0.83			
vC, conflicting volume	2723	2723	448	1337				0		2723	
vC1, stage 1 conf vol	537										
vC2, stage 2 conf vol	316										
vCu, unblocked vol	2667	2667	0	1002				0		2667	
tC, single (s)	7.5	6.5	6.9	4.1				4.2		6.5	
tC, 2 stage (s)	5.8										
tF (s)	3.5	4.0	3.3	2.2				2.3		4.0	
p0 queue free %	100	100	99	100				57		100	
cM capacity (veh/h)	6	10	899	570				1593		10	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>EB 3</b>	<b>SB 1</b>	<b>SB 2</b>	<b>SB 3</b>					
Volume Total	11	959	533	533							
Volume Left	0	693	0	0							
Volume Right	11	0	0	0							
cSH	899	1593	1700	1700							
Volume to Capacity	0.01	0.43	0.31	0.31							
Queue Length 95th (ft)	1	57	0	0							
Control Delay (s)	9.1	7.8	0.0	0.0							
Lane LOS	A	A									
Approach Delay (s)	9.1	3.7									
Approach LOS	A										
<b>Intersection Summary</b>											
Average Delay	3.7										
Intersection Capacity Utilization	52.5%		ICU Level of Service		A						
Analysis Period (min)	15										

HCM Unsignalized Intersection Capacity Analysis  
17: Traveler Street & Site Driveway

10995.00 :: Boston Herald Redevelopment  
2016 Full Build Conditions :: Saturday Midday Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕						↕		
Sign Control	Free			Free				Stop		Stop		
Grade	0%			0%				0%		0%		
Volume (veh/h)	70	235	10	15	100	145	0	0	0	175	0	75
Peak Hour Factor	0.82	0.82	0.82	0.77	0.77	0.77	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	85	287	12	19	130	188	0	0	0	190	0	82
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (ft)	343			170								
pX, platoon unblocked												
vC, conflicting volume	318			299			808	821	293	726	732	224
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	318			299			808	821	293	726	732	224
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 %	93			98			100	100	100	40	100	90
cM capacity (veh/h)	1236			1251			252	284	747	318	319	815
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>SB 1</b>									
Volume Total	384	338	272									
Volume Left	85	19	190									
Volume Right	12	188	82									
cSH	1236	1251	389									
Volume to Capacity	0.07	0.02	0.70									
Queue Length 95th (ft)	6	1	128									
Control Delay (s)	2.3	0.6	33.0									
Lane LOS	A	A	D									
Approach Delay (s)	2.3	0.6	33.0									
Approach LOS	D											
<b>Intersection Summary</b>												
Average Delay	10.1											
Intersection Capacity Utilization	61.2%			ICU Level of Service			B					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis  
36: Site Driveway & Harrison Avenue

10995.00 :: Boston Herald Redevelopment  
2016 Full Build Conditions :: Saturday Midday Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↕	↕		↕	↕
Sign Control	Stop	Free	Free		Free	Free
Grade	0%	0%	0%		0%	0%
Volume (veh/h)	0	25	160	80	0	545
Peak Hour Factor	0.92	0.92	0.88	0.88	0.92	0.92
Hourly flow rate (vph)	0	27	182	91	0	592
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	Raised					
Median storage (veh)	1					
Upstream signal (ft)	197		523			
pX, platoon unblocked						
vC, conflicting volume	523	136			273	
vC1, stage 1 conf vol	227					
vC2, stage 2 conf vol	296					
vCu, unblocked vol	523	136			273	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			100	
cM capacity (veh/h)	565	887			1288	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	27	121	152	296	296	
Volume Left	0	0	0	0	0	
Volume Right	27	0	91	0	0	
cSH	887	1700	1700	1700	1700	
Volume to Capacity	0.03	0.07	0.09	0.17	0.17	
Queue Length 95th (ft)	2	0	0	0	0	
Control Delay (s)	9.2	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	9.2	0.0		0.0		
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.3					
Intersection Capacity Utilization	20.1%		ICU Level of Service			A
Analysis Period (min)	15					



**2016 Build Conditions**  
**BRA Two-Way Short Range Improvements**

**Table A.1: BRA Improvements Analysis Level of Service (LOS) Summary**

Intersection	2016 Build Conditions w. Existing Traffic Patterns				2016 Build Conditions w. Proposed Traffic Patterns			
	LOS	Delay	V/C	95 <sup>th</sup> % Queue	LOS	Delay	V/C	95 <sup>th</sup> % Queue
<b><u>Herald Street / Washington Street</u></b>								
<b>Weekday AM</b>								
Herald EB LT(R)	B	17.0	0.53	168	B	17.1	0.54	169
Washington NB T	B	17.8	0.53	171	B	17.5	0.55	182
Washington NB R	B	12.6	0.03	m13	N/A	N/A	N/A	N/A
Washington SB T*	B	13.1	0.09	17	B	13.1	0.09	17
<b>Overall</b>	<b>B</b>	<b>17.2</b>	<b>0.53</b>		<b>B</b>	<b>17.2</b>	<b>0.54</b>	
<b>Weekday PM</b>								
Herald EB LT(R)	E	58.1	1.02	#491	E	62.8	1.04	#500
Washington NB T	B	13.9	0.38	155	B	14.4	0.41	166
Washington NB R	B	11.9	0.14	53	N/A	N/A	N/A	N/A
Washington SB T*	B	11.1	0.05	18	B	11.1	0.05	18
<b>Overall</b>	<b>D</b>	<b>44.9</b>	<b>0.64</b>		<b>D</b>	<b>49.2</b>	<b>0.67</b>	
<b><u>Herald Street / Harrison Avenue</u></b>								
<b>Weekday AM</b>								
Herald EB (L)TR	C	20.6	0.56	168	B	18.3	0.60	132
Harrison NB T	N/A	N/A	N/A	N/A	B	19.4	0.06	22
Harrison NB R	C	31.8	0.03	0	B	19.3	0.04	23
Harrison SB L	C	29.2	0.35	78	B	10.9	0.23	38
Harrison SB T	C	23.9	0.30	59	A	9.2	0.30	60
<b>Overall</b>	<b>C</b>	<b>22.5</b>	<b>0.48</b>		<b>B</b>	<b>16.1</b>	<b>0.42</b>	
<b>Weekday PM</b>								
Herald EB (L)TR	D	37.8	0.96	#387	B	18.2	0.80	223
Harrison NB T	N/A	N/A	N/A	N/A	C	20.9	0.20	39
Harrison NB R	C	32.7	0.11	0	C	24.8	0.39	47
Harrison SB L	C	31.9	0.50	137	B	17.4	0.45	83
Harrison SB T	C	24.4	0.35	86	B	14.0	0.42	112
<b>Overall</b>	<b>D</b>	<b>35.2</b>	<b>0.77</b>		<b>B</b>	<b>18.2</b>	<b>0.61</b>	
<b><u>Traveler Street/ Harrison Avenue</u></b>								
<b>Weekday AM</b>								
Traveler EB LTR	N/A	N/A	N/A	N/A	B	15.3	0.13	74
Traveler WB LTR	B	14.8	0.16	54	B	16.1	0.17	54
Harrison NB LTR	C	34.6	0.77	129	C	26.7	0.60	111
Harrison SB LTR	D	49.6	0.88	135	C	32.4	0.66	106
<b>Overall</b>	<b>D</b>	<b>35.1</b>	<b>0.45</b>		<b>C</b>	<b>25.1</b>	<b>0.39</b>	
<b>Weekday PM</b>								

**Table A.1: BRA Improvements Analysis Level of Service (LOS) Summary**

Intersection	2016 Build Conditions w. Existing Traffic Patterns				2016 Build Conditions w. Proposed Traffic Patterns			
	LOS	Delay	V/C	95 <sup>th</sup> % Queue	LOS	Delay	V/C	95 <sup>th</sup> % Queue
Traveler EB LTR	N/A	N/A	N/A	N/A	C	22.7	0.21	108
Traveler WB LTR	B	17.7	0.15	62	C	21.9	0.17	59
Harrison NB LTR	D	45.5	0.86	m201	C	28.2	0.56	m153
Harrison SB L	F	>120	>1.20	#328	E	78.9	0.97	#258
Harrison SB TR	D	35.6	0.72	283	C	23.7	0.49	199
<b>Overall</b>	<b>F</b>	<b>96.4</b>	<b>0.87</b>		<b>C</b>	<b>34.5</b>	<b>0.62</b>	
<b>Washington Street at Traveler Street</b>								
<b>Weekday AM</b>								
Traveler WB L	N/A	N/A	N/A	N/A	D	43.2	0.17	m27
Traveler WB R	A	0.5	0.19	0	A	0.5	0.18	0
Washington NB TR	A	1.9	0.14	19	A	2.2	0.23	33
Washington SB* T(L)	A	1.6	0.05	1	A	1.3	0.07	3
<b>Overall</b>	<b>A</b>	<b>1.4</b>	<b>0.19</b>		<b>A</b>	<b>3.0</b>	<b>0.23</b>	
<b>Weekday PM</b>								
Traveler WB L	N/A	N/A	N/A	N/A	C	33.7	0.32	48
Traveler WB R	A	0.5	0.18	0	A	0.5	0.16	0
Washington NB TR	A	1.9	0.13	17	A	2.2	0.22	35
Washington SB* T(L)	A	1.7	0.04	5	A	1.8	0.07	6
<b>Overall</b>	<b>A</b>	<b>1.4</b>	<b>0.18</b>		<b>A</b>	<b>3.6</b>	<b>0.23</b>	
<b>Washington Street at East Berkeley Street</b>								
<b>Weekday AM</b>								
E. Berkeley WB LTR	C	31.0	0.80	281	D	40.3	0.89	#345
Washington NB L	C	25.2	0.27	97	B	16.7	0.16	75
Washington NB T	C	33.5	0.67	#466	C	24.8	0.63	#431
Washington SB* T(R)	C	22.0	0.07	33	B	15.5	0.06	25
<b>Overall</b>	<b>C</b>	<b>31.2</b>	<b>0.74</b>		<b>C</b>	<b>34.5</b>	<b>0.74</b>	
<b>Weekday PM</b>								
E. Berkeley WB LTR	C	32.0	0.81	283	D	40.3	0.88	322
Washington NB L	C	20.7	0.25	129	B	17.2	0.24	107
Washington NB T	C	25.3	0.53	#395	C	23.2	0.60	382
Washington SB* T(R)	B	18.3	0.06	32	B	15.3	0.11	36
<b>Overall</b>	<b>C</b>	<b>29.7</b>	<b>0.66</b>		<b>C</b>	<b>33.1</b>	<b>0.71</b>	

\* Silver Line only under existing traffic patterns

- Volume exceeds capacity, queue is theoretically infinite.

# 95<sup>th</sup> percentile volume exceeds capacity, queue may be longer.

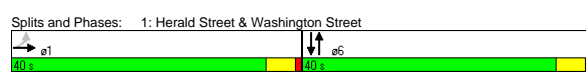
m Volume for 95<sup>th</sup> percentile queue is metered by upstream signal.

N/A Not applicable – movement not applicable under analyzed condition

Lanes, Volumes, Timings 10995.00 :: Boston Herald Redevelopment  
 1: Herald Street & Washington Street 2016 Build Conditions - BRA Improvements Analysis:: Weekday Morning Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↔ ↑ ↗ ↖ ↗ ↖ ↗ ↖											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50					50			50		
Trailing Detector (ft)	0	0					0			0		
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red		No			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		376			407			347			464	
Travel Time (s)		8.5			9.3			7.9			10.5	
Volume (vph)	65	840	55	0	0	0	620	35	0	20	0	
Conf. Peds. (#/hr)	9		16					102		102		
Conf. Bikes (#/hr)		1						8				
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.89	0.89	0.89	0.59	0.59	0.59
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	8%	8%	8%	100%	100%	100%
Bus Blockages (#/hr)	0	9	9	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1022	0	0	0	0	736	0	0	34	0	
Turn Type	Perm											
Protected Phases		1					6			6		
Permitted Phases	1											
Detector Phases	1	1					6			6		
Minimum Initial (s)	12.0	12.0					12.0			12.0		
Minimum Split (s)	31.0	31.0					31.0			31.0		
Total Split (s)	40.0	40.0	0.0	0.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	
Total Split (%)	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	50.0%	0.0%	
Yellow Time (s)	4.0	4.0					4.0			4.0		
All-Red Time (s)	1.0	1.0					1.0			1.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max					C-Max			C-Max		
v/c Ratio		0.54					0.55			0.09		
Control Delay		17.3					17.6			13.5		
Queue Delay		0.0					0.0			0.0		
Total Delay		17.3					17.6			13.5		
Queue Length 50th (ft)		130					125			9		
Queue Length 95th (ft)		169					182			17		
Internal Link Dist (ft)		296			327		267			384		
Turn Bay Length (ft)												
Base Capacity (vph)		1894					1338			385		
Starvation Cap Reductn		0					0			0		
Spillback Cap Reductn		0					0			0		
Storage Cap Reductn		0					0			0		
Reduced v/c Ratio		0.54					0.55			0.09		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 45 (56%), Referenced to phase 6:NBSB, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated



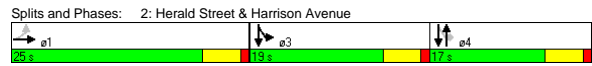
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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔ ↔ ↑ ↗ ↖ ↗ ↖ ↗ ↖												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0												
Lane Util. Factor	0.91						0.95						
Frpb, ped/bikes	1.00						0.99						
Flpb, ped/bikes	1.00						1.00						
Frt	0.99						1.00						
Fit Protected	1.00						1.00						
Satd. Flow (prot)	4209						2963						
Fit Permitted	1.00						1.00						
Satd. Flow (perm)	4209						2963						
Volume (vph)	65	840	55	0	0	0	620	35	0	20	0		
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.89	0.89	0.89	0.59	0.59	0.59	
Adj. Flow (vph)	69	894	59	0	0	0	697	39	0	34	0		
RTOR Reduction (vph)	0	0	0	0	0	0	0	5	0	0	0		
Lane Group Flow (vph)	0	1022	0	0	0	0	731	0	0	34	0		
Conf. Peds. (#/hr)	9		16					102		102			
Conf. Bikes (#/hr)		1						8					
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	8%	8%	8%	100%	100%	100%	
Bus Blockages (#/hr)	0	9	9	0	0	0	0	0	0	0	0		
Turn Type	Perm												
Protected Phases		1					6			6			
Permitted Phases	1												
Actuated Green, G (s)	35.0						35.0						
Effective Green, g (s)	36.0						36.0						
Actuated g/C Ratio	0.45						0.45						
Clearance Time (s)	5.0						5.0						
Vehicle Extension (s)	3.0						3.0						
Lane Grp Cap (vph)	1894						1333						
v/s Ratio Prot							0.25						
v/s Ratio Perm	0.24												
v/c Ratio	0.54						0.55						
Uniform Delay, d1	16.0						16.1						
Progression Factor	1.00						0.99						
Incremental Delay, d2	1.1						1.6						
Delay (s)	17.1						17.5						
Level of Service	B						B						
Approach Delay (s)	17.1			0.0			17.5			13.1			
Approach LOS	B			A			B			B			
<b>Intersection Summary</b>													
HCM Average Control Delay	17.2						HCM Level of Service						B
HCM Volume to Capacity ratio	0.54												
Actuated Cycle Length (s)	80.0						Sum of lost time (s)						8.0
Intersection Capacity Utilization	48.2%						ICU Level of Service						A
Analysis Period (min)	15												
c Critical Lane Group													

Lanes, Volumes, Timings  
 2: Herald Street & Harrison Avenue  
 2016 Build Conditions - BRA Improvements Analysis:: Weekday Morning Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations	↔↔↔↔↔↔↔↔↔↔↔↔↔														
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Leading Detector (ft)	50	50						50	50	50	50				
Trailing Detector (ft)	0	0						0	0	0	0				
Turning Speed (mph)	15		9	15		9	15		9	15		9			
Right Turn on Red	Yes			Yes			Yes			Yes					
Link Speed (mph)	30			30			30			30					
Link Distance (ft)	407			540			356			340					
Travel Time (s)	9.3			12.3			8.1			7.7					
Volume (vph)	1	775	100	0	0	0	0	20	45	95	160	0			
Conf. Bikes (#/hr)	1														
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96	0.73	0.73	0.73			
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	3%	3%	3%	21%	21%	21%			
Parking (#/hr)	2														
Lane Group Flow (vph)	0	912	0	0	0	0	0	21	47	130	219	0			
Turn Type	Perm			Perm			D,P+P			Perm					
Protected Phases	1						4			3 3 4					
Permitted Phases	1						4			4 4					
Detector Phases	1 1						4 4			3 3 4					
Minimum Initial (s)	1.0 1.0						8.0 8.0			8.0					
Minimum Split (s)	19.0 19.0						13.0 13.0			13.0					
Total Split (s)	25.0 25.0			0.0 0.0			0.0 0.0			17.0 17.0			19.0 36.0 0.0		
Total Split (%)	41.0% 41.0%			0.0% 0.0%			0.0% 0.0%			27.9% 27.9%			31.1% 59.0% 0.0%		
Yellow Time (s)	4.0 4.0						4.0 4.0			4.0					
All-Red Time (s)	1.0 1.0						1.0 1.0			1.0					
Lead/Lag							Lag Lag Lead								
Lead-Lag Optimize?							Yes Yes Yes								
Recall Mode	Max Max						Max Max Max								
v/c Ratio	0.61						0.06 0.16			0.23 0.30					
Control Delay	17.9						19.8 8.5 9.1			9.5					
Queue Delay	0.0						0.0 0.0 0.0			0.0					
Total Delay	17.9						19.8 8.5 9.1			9.5					
Queue Length 50th (ft)	94						6 0 23			41					
Queue Length 95th (ft)	132						22 23 38			60					
Internal Link Dist (ft)	327			460			276			260					
Turn Bay Length (ft)															
Base Capacity (vph)	1503						354 301			554 741					
Starvation Cap Reductn	0														
Spillback Cap Reductn	0														
Storage Cap Reductn	0														
Reduced v/c Ratio	0.61						0.06 0.16			0.23 0.30					

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 61  
 Actuated Cycle Length: 61  
 Natural Cycle: 45  
 Control Type: Semi Act-Uncoord



HCM Signalized Intersection Capacity Analysis  
 2: Herald Street & Harrison Avenue  
 2016 Build Conditions - BRA Improvements Analysis:: Weekday Morning Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations	↔↔↔↔↔↔↔↔↔↔↔↔↔														
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Total Lost time (s)	4.0														
Lane Util. Factor	0.91														
Frpb, ped/bikes	1.00														
Flpb, ped/bikes	1.00														
Fit	0.98														
Fit Protected	1.00														
Satd. Flow (prot)	4288			1660			1240			1343			1413		
Fit Permitted	1.00														
Satd. Flow (perm)	4288			1660			1240			1051			1413		
Volume (vph)	1	775	100	0	0	0	0	20	45	95	160	0			
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96	0.73	0.73	0.73			
Adj. Flow (vph)	1	807	104	0	0	0	0	21	47	130	219	0			
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	37	0	0	0			
Lane Group Flow (vph)	0	885	0	0	0	0	0	21	10	130	219	0			
Conf. Bikes (#/hr)	1														
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	3%	3%	3%	21%	21%	21%			
Parking (#/hr)	2														
Turn Type	Perm			Perm			D,P+P			Perm					
Protected Phases	1						4			3 3 4					
Permitted Phases	1						4			4 4					
Actuated Green, G (s)	20.0						12.0			12.0 26.0 31.0					
Effective Green, g (s)	21.0						13.0			13.0 28.0 32.0					
Actuated g/C Ratio	0.34						0.21			0.21 0.46 0.52					
Clearance Time (s)	5.0						5.0			5.0					
Vehicle Extension (s)	3.0						2.0			2.0 2.0					
Lane Grp Cap (vph)	1476						354			264 554 741					
v/s Ratio Prot	0.01						0.06			c0.15					
v/s Ratio Perm	0.21						0.01			0.05					
v/c Ratio	0.60						0.06			0.04 0.23 0.30					
Uniform Delay, d1	16.5						19.1			19.0 9.9 8.2					
Progression Factor	1.00						1.00			1.00 1.00 1.00					
Incremental Delay, d2	1.8						0.3			0.3 1.0 1.0					
Delay (s)	18.3						19.4			19.3 10.9 9.2					
Level of Service	B						B			B A					
Approach Delay (s)	18.3			0.0			19.4			9.8					
Approach LOS	B			A			B			A					

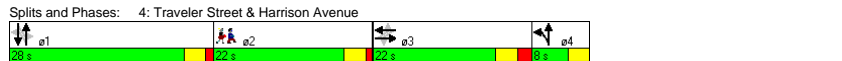
**Intersection Summary**  
 HCM Average Control Delay: 16.1 HCM Level of Service: B  
 HCM Volume to Capacity ratio: 0.42  
 Actuated Cycle Length (s): 61.0 Sum of lost time (s): 8.0  
 Intersection Capacity Utilization: 42.5% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lanes, Volumes, Timings  
 4: Traveler Street & Harrison Avenue

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations		↔		↔	↔			↔		↔	↔		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50	50		50	50		50	50		50	50		
Trailing Detector (ft)	0	0		0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red		Yes			Yes			Yes			Yes		No
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		436			343			372			197		
Travel Time (s)		9.9			7.8			8.5			4.5		
Volume (vph)	1	80	1	30	80	105	145	190	80	90	175	15	
Confl. Bikes (#/hr)					1			4			4		
Peak Hour Factor	0.92	0.92	0.92	0.86	0.86	0.86	0.86	0.92	0.92	0.84	0.84	0.84	
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	5%	5%	5%	11%	11%	11%	
Lane Group Flow (vph)	0	89	0	0	250	0	0	452	0	0	333	0	
Turn Type	Perm		Perm		D,P+P			Perm					
Protected Phases		3			3		4	1 4			1		2
Permitted Phases	3			3			1			1			
Detector Phases	3	3		3	3		4	1 4		1	1		
Minimum Initial (s)	7.0	7.0		7.0	7.0		4.0			7.0	7.0		2.0
Minimum Split (s)	21.0	21.0		21.0	21.0		7.0			20.0	20.0		21.0
Total Split (s)	22.0	22.0	0.0	22.0	22.0	0.0	8.0	36.0	0.0	28.0	28.0	0.0	22.0
Total Split (%)	27.5%	27.5%	0.0%	27.5%	27.5%	0.0%	10.0%	45.0%	0.0%	35.0%	35.0%	0.0%	28%
Yellow Time (s)	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		0.0			1.0	1.0		1.0
Lead/Lag	Lead	Lead		Lead	Lead		Lag			Lead	Lead		Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes		Yes
Recall Mode	Max	Max		Max	Max		Max		C-Max	C-Max			None
v/c Ratio		0.13			0.23			0.57			0.57		
Control Delay		19.8			11.4			20.5			28.3		
Queue Delay		0.0			0.0			0.0			0.0		
Total Delay		19.8			11.4			20.5			28.4		
Queue Length 50th (ft)		24			16			73			73		
Queue Length 95th (ft)		74			54			111			106		
Internal Link Dist (ft)		356			263			292			117		
Turn Bay Length (ft)													
Base Capacity (vph)		660			1084			799			581		
Starvation Cap Reductn		0			0			0			0		
Spillback Cap Reductn		0			0			0			7		
Storage Cap Reductn		0			0			0			0		
Reduced v/c Ratio		0.13			0.23			0.57			0.58		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 48 (60%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis  
 4: Traveler Street & Harrison Avenue

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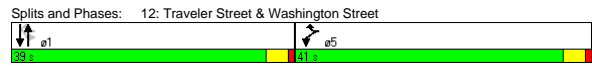
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔		↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			0.95			0.95			0.95	
Frpb, ped/bikes		1.00			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Fr		1.00			0.93			0.97			0.99	
Fl		1.00			0.99			0.98			0.98	
Satd. Flow (prot)		1673			2804			2939			2855	
Flt Permitted		1.00			0.91			0.69			0.65	
Satd. Flow (perm)		1670			2574			2075			1883	
Volume (vph)	1	80	1	30	80	105	145	190	80	90	175	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.86	0.86	0.86	0.92	0.92	0.84	0.84	0.84	0.84
Adj. Flow (vph)	1	87	1	35	93	122	158	207	87	107	208	18
RTOR Reduction (vph)	0	1	0	0	74	0	0	27	0	0	0	0
Lane Group Flow (vph)	0	88	0	0	176	0	0	425	0	0	333	0
Confl. Bikes (#/hr)					1			4			4	
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	5%	5%	5%	11%	11%	11%
Turn Type	Perm		Perm		D,P+P			Perm				
Protected Phases		3			3		4	1 4			1	
Permitted Phases	3			3			1			1		
Actuated Green, G (s)		30.6			30.6			26.6			21.6	
Effective Green, g (s)		31.6			31.6			25.6			21.6	
Actuated g/C Ratio		0.40			0.40			0.32			0.27	
Clearance Time (s)		5.0			5.0			4.0			4.0	
Vehicle Extension (s)		2.0			2.0			2.0			2.0	
Lane Grp Cap (vph)		660			1017			707			508	
v/s Ratio Prot								c0.03				
v/s Ratio Perm		0.05			c0.07			0.16			c0.18	
w/c Ratio		0.13			0.17			0.60			0.66	
Uniform Delay, d1		15.5			15.7			22.9			25.9	
Progression Factor		0.96			1.00			1.00			1.00	
Incremental Delay, d2		0.4			0.4			3.8			6.5	
Delay (s)		15.3			16.1			26.7			32.4	
Level of Service		B			B			C			C	
Approach Delay (s)		15.3			16.1			26.7			32.4	
Approach LOS		B			B			C			C	

**Intersection Summary**  
 HCM Average Control Delay: 25.1  
 HCM Volume to Capacity ratio: 0.39  
 Actuated Cycle Length (s): 80.0  
 Intersection Capacity Utilization: 42.7%  
 Analysis Period (min): 15  
 HCM Level of Service: C  
 Sum of lost time (s): 22.8  
 ICU Level of Service: A  
 Critical Lane Group

Lanes, Volumes, Timings  
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 12: Traveler Street & Washington Street 2016 Build Conditions - BRA Improvements Analysis:: Weekday Morning Peak

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕	↕	↗	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Turning Speed (mph)	15	9		9	15	
Right Turn on Red	Yes		Yes			
Link Speed (mph)	25		25			30
Link Distance (ft)	436		403			311
Travel Time (s)	11.9		11.0			7.1
Volume (vph)	20	165	450	75	15	40
Peak Hour Factor	0.71	0.71	0.97	0.97	0.59	0.59
Heavy Vehicles (%)	0%	12%	13%	0%	0%	100%
Lane Group Flow (vph)	28	232	541	0	0	93
Turn Type	custom			Perm		
Protected Phases	5	5	1			1
Permitted Phases	1			1		
Detector Phases	5	5	1		1	1
Minimum Initial (s)	8.0	8.0	10.0		10.0	10.0
Minimum Split (s)	28.0	28.0	28.0		28.0	28.0
Total Split (s)	41.0	41.0	39.0	0.0	39.0	39.0
Total Split (%)	51.3%	51.3%	48.8%	0.0%	48.8%	48.8%
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lead/Lag	Lead-Lag Optimize?					
Recall Mode	None	None	C-Max		C-Max	C-Max
v/c Ratio	0.17	0.18	0.24			0.08
Control Delay	45.8	0.3	2.1			1.4
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	45.8	0.3	2.1			1.4
Queue Length 50th (ft)	14	0	23			2
Queue Length 95th (ft)	m27	0	33			3
Internal Link Dist (ft)	356		323			231
Turn Bay Length (ft)						
Base Capacity (vph)	751	1298	2296			1238
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	0.04	0.18	0.24			0.08

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 6 (8%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 m Volume for 95th percentile queue is metered by upstream signal.



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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕	↕	↗	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	1.00	0.95			0.95
Flt	1.00	0.85	0.98			1.00
Flt Protected	0.95	1.00	1.00			0.99
Satd. Flow (prot)	1624	1298	2861			1852
Flt Permitted	0.95	1.00	1.00			0.84
Satd. Flow (perm)	1624	1298	2861			1569
Volume (vph)	20	165	450	75	15	40
Peak-hour factor, PHF	0.71	0.71	0.97	0.97	0.59	0.59
Adj. Flow (vph)	28	232	464	77	25	68
RTOR Reduction (vph)	0	0	6	0	0	0
Lane Group Flow (vph)	28	232	535	0	0	93
Heavy Vehicles (%)	0%	12%	13%	0%	0%	100%
Turn Type	custom			Perm		
Protected Phases	5	5	1			1
Permitted Phases	1			1		
Actuated Green, G (s)	8.0	72.0	64.0			64.0
Effective Green, g (s)	8.0	72.0	64.0			64.0
Actuated g/C Ratio	0.10	0.90	0.80			0.80
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	2.0	2.0	2.0			2.0
Lane Grp Cap (vph)	162	1298	2289			1255
v/s Ratio Prot	0.02	c0.02	c0.19			
v/s Ratio Perm		0.16				0.06
v/c Ratio	0.17	0.18	0.23			0.07
Uniform Delay, d1	33.0	0.5	2.0			1.7
Progression Factor	1.31	1.00	1.00			0.73
Incremental Delay, d2	0.2	0.0	0.2			0.1
Delay (s)	43.2	0.5	2.2			1.3
Level of Service	D	A	A			A
Approach Delay (s)	5.1	2.2				1.3
Approach LOS	A	A				A

**Intersection Summary**  
 HCM Average Control Delay: 3.0 HCM Level of Service: A  
 HCM Volume to Capacity ratio: 0.23  
 Actuated Cycle Length (s): 80.0 Sum of lost time (s): 4.0  
 Intersection Capacity Utilization: 34.5% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lanes, Volumes, Timings  
 10995.00 :: Boston Herald Redevelopment  
 13: East Berkeley Street & Washington Street 2016 Build Conditions - BRA Improvements Analysis:: Weekday Morning Peak

Lane Group	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0	0	0	0	0	80	0	0	0	0	
Storage Lanes	0	0	0	0	0	1	0	0	0	0	0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50		50	50		50		
Trailing Detector (ft)				0	0		0	0		0		
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red		Yes			Yes			Yes			Yes	
Link Speed (mph)	30				25			25			30	
Link Distance (ft)	266				512			285			403	
Travel Time (s)	6.0				14.0			7.8			9.2	
Volume (vph)	0	0	0	65	1025	85	80	440	0	0	40	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	100%	2%	
Lane Group Flow (vph)	0	0	0	0	1277	0	87	478	0	0	65	0
Turn Type				Split		Perm						
Protected Phases				5	5		1	1		1		2
Permitted Phases							1					
Detector Phases				5	5		1	1		1		
Minimum Initial (s)				8.0	8.0		20.0	20.0		20.0		2.0
Minimum Split (s)				25.0	25.0		24.0	24.0		24.0		24.0
Total Split (s)	0.0	0.0	0.0	36.0	36.0	0.0	40.0	40.0	0.0	0.0	40.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	36.0%	36.0%	0.0%	40.0%	40.0%	0.0%	0.0%	40.0%	0.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Lead/Lag						Lead	Lead		Lead	Lead		Lag
Lead-Lag Optimize?												
Recall Mode			None	None		C-Min	C-Min		C-Min		None	
v/c Ratio				0.90	0.90		0.16	0.62		0.08		
Control Delay				41.8	41.8		21.1	28.4		14.8		
Queue Delay				0.0	0.0		0.0	0.0		0.0		
Total Delay				41.8	41.8		21.1	28.4		14.8		
Queue Length 50th (ft)				278	278		38	269		9		
Queue Length 95th (ft)				#345	#345		75	#431		24		
Internal Link Dist (ft)		186		432	432		205	205		323		
Turn Bay Length (ft)							80					
Base Capacity (vph)				1453	1453		552	774		865		
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				0.88	0.88		0.16	0.62		0.08		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 95 (95%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



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Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)												
Lane Util. Factor												
Fit Protected												
Satd. Flow (prot)												
Fit Permitted												
Satd. Flow (perm)												
Volume (vph)	0	0	0	65	1025	85	80	440	0	0	40	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	71	1114	92	87	478	0	0	43	22
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	0	0	0	1268	0	87	478	0	0	53	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	100%	2%	
Turn Type				Split		Perm						
Protected Phases				5	5		1	1		1		
Permitted Phases							1					
Actuated Green, G (s)				31.4	31.4		45.4	45.4		45.4		
Effective Green, g (s)				31.4	31.4		45.4	45.4		45.4		
Actuated g/C Ratio				0.31	0.31		0.45	0.45		0.45		
Clearance Time (s)				4.0	4.0		4.0	4.0		4.0		
Vehicle Extension (s)				3.0	3.0		3.0	3.0		3.0		
Lane Grp Cap (vph)				1418	1418		542	761		839		
v/s Ratio Prot				c0.28	c0.28		c0.29	c0.29		c0.30		
v/s Ratio Perm							0.07	0.07		0.06		
v/c Ratio				0.89	0.89		0.16	0.63		0.06		
Uniform Delay, d1				32.7	32.7		16.1	20.9		15.3		
Progression Factor				1.00	1.00		1.00	1.00		1.00		
Incremental Delay, d2				7.6	7.6		0.6	3.9		0.1		
Delay (s)				40.3	40.3		16.7	24.8		15.5		
Level of Service				D	D		B	C		B		
Approach Delay (s)		0.0		40.3	40.3		23.5	23.5		15.5		
Approach LOS		A		D	D		C	C		B		

**Intersection Summary**

HCM Average Control Delay	34.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

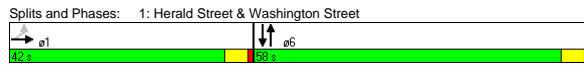
c Critical Lane Group



Lanes, Volumes, Timings  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔							↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50					50			50		
Trailing Detector (ft)	0	0					0			0		
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red	No		Yes		Yes		Yes		Yes		Yes	
Link Speed (mph)	30		30		30		30		30		30	
Link Distance (ft)	376		407		347		464		376		464	
Travel Time (s)	8.5		9.3		7.9		10.5		8.5		10.5	
Volume (vph)	85	1365	70	0	0	0	525	85	0	20	0	0
Confl. Peds. (#/hr)	2	23					78		78			
Confl. Bikes (#/hr)	1						8					
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	100%	100%	100%	100%
Bus Blockages (#/hr)	0	6	6	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1767	0	0	0	0	663	0	0	24	0	0
Turn Type	Perm											
Protected Phases	1						6				6	
Permitted Phases	1										6	
Detector Phases	1						6				6	
Minimum Initial (s)	12.0	12.0					12.0			12.0		
Minimum Split (s)	31.0	31.0					31.0			31.0		
Total Split (s)	42.0	42.0	0.0	0.0	0.0	0.0	58.0	0.0	0.0	58.0	0.0	0.0
Total Split (%)	42.0%	42.0%	0.0%	0.0%	0.0%	0.0%	58.0%	0.0%	0.0%	58.0%	0.0%	0.0%
Yellow Time (s)	4.0	4.0					4.0			4.0		
All-Red Time (s)	1.0	1.0					1.0			1.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max					C-Max			C-Max		
v/c Ratio	1.04	1.04					0.41			0.05		
Control Delay	63.4	63.4					14.5			11.4		
Queue Delay	0.0	0.0					0.0			0.0		
Total Delay	63.4	63.4					14.5			11.4		
Queue Length 50th (ft)	-446	-446					124			7		
Queue Length 95th (ft)	#500	#500					166			18		
Internal Link Dist (ft)	296			327			267			384		
Turn Bay Length (ft)												
Base Capacity (vph)	1704						1608			462		
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	1.04						0.41			0.05		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 60 (60%), Referenced to phase 6:NBSB, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 - 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.



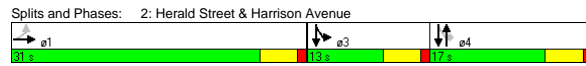
HCM Signalized Intersection Capacity Analysis  
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔							↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0										4.0	
Lane Util. Factor	0.91										1.00	
Frpb, ped/bikes	1.00										1.00	
Flpb, ped/bikes	1.00										1.00	
Fit Protected	0.99										1.00	
Satd. Flow (prot)	4487										2976	
Fit Permitted	1.00										1.00	
Satd. Flow (perm)	4487										2976	
Volume (vph)	85	1365	70	0	0	0	525	85	0	20	0	0
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	99	1587	81	0	0	0	571	92	0	24	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	1767	0	0	0	0	662	0	0	24	0	0
Confl. Peds. (#/hr)	2	23					78		78			
Confl. Bikes (#/hr)	1						8					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	100%	100%	100%	100%
Bus Blockages (#/hr)	0	6	6	0	0	0	0	0	0	0	0	0
Turn Type	Perm											
Protected Phases	1						6				6	
Permitted Phases	1										6	
Actuated Green, G (s)	37.0						53.0				53.0	
Effective Green, g (s)	38.0						54.0				54.0	
Actuated g/C Ratio	0.38						0.54				0.54	
Clearance Time (s)	5.0						5.0				5.0	
Vehicle Extension (s)	3.0						3.0				3.0	
Lane Grp Cap (vph)	1705						1607				462	
v/s Ratio Prot							c0.22				0.03	
v/s Ratio Perm	0.39											
v/c Ratio	1.04						0.41				0.05	
Uniform Delay, d1	31.0						13.6				10.9	
Progression Factor	1.00						1.00				1.00	
Incremental Delay, d2	31.8						0.8				0.2	
Delay (s)	62.8						14.4				11.1	
Level of Service	E						B				B	
Approach Delay (s)	62.8				0.0		14.4				11.1	
Approach LOS	E				A		B				B	
<b>Intersection Summary</b>												
HCM Average Control Delay	49.2						HCM Level of Service				D	
HCM Volume to Capacity ratio	0.67											
Actuated Cycle Length (s)	100.0						Sum of lost time (s)				8.0	
Intersection Capacity Utilization	59.6%						ICU Level of Service				B	
Analysis Period (min)	15											
c Critical Lane Group												

Lanes, Volumes, Timings  
 2: Herald Street & Harrison Avenue  
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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔↔↔↔↔↔↔↔↔↔↔											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50						50	50	50	50	
Trailing Detector (ft)	0	0						0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red	Yes			Yes			Yes			Yes		
Link Speed (mph)	30			30			30			30		
Link Distance (ft)	407			540			356			340		
Travel Time (s)	9.3			12.3			8.1			7.7		
Volume (vph)	1	1250	195	0	0	0	0	50	135	175	240	0
Conf. Bikes (#/hr)	1											
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.69	0.69	0.69	0.81	0.81	0.81
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	3%	3%	3%
Parking (#/hr)	2											
Lane Group Flow (vph)	0	1643	0	0	0	0	0	72	196	216	296	0
Turn Type	Perm			Perm D,P+P								
Protected Phases	1			4								
Permitted Phases	1			4								
Detector Phases	1			4								
Minimum Initial (s)	1.0			8.0								
Minimum Split (s)	19.0			13.0								
Total Split (s)	31.0			0.0			17.0			30.0		
Total Split (%)	50.8%			0.0%			27.9%			49.2%		
Yellow Time (s)	4.0			4.0								
All-Red Time (s)	1.0			1.0								
Lead/Lag				Lag			Lag			Lead		
Lead-Lag Optimize?				Yes			Yes			Yes		
Recall Mode	Max			Max								
v/c Ratio	0.81			0.20								
Control Delay	18.0			21.4								
Queue Delay	0.0			0.0								
Total Delay	18.0			21.4								
Queue Length 50th (ft)	175			22								
Queue Length 95th (ft)	223			39								
Internal Link Dist (ft)	327			460			276			260		
Turn Bay Length (ft)												
Base Capacity (vph)	2040			364			362			484		
Starvation Cap Reductn	0											
Spillback Cap Reductn	0											
Storage Cap Reductn	0											
Reduced v/c Ratio	0.81			0.20								

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 61  
 Actuated Cycle Length: 61  
 Natural Cycle: 55  
 Control Type: Semi Act-Uncoord



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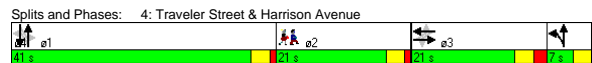
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔↔↔↔↔↔↔↔↔↔↔											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0											
Lane Util. Factor	0.91											
Frpb, ped/bikes	1.00											
Flpb, ped/bikes	1.00											
Frt	0.98											
Fit Protected	1.00											
Satd. Flow (prot)	4528			1710			1277			1577		
Fit Permitted	1.00			1.00			1.00			0.95		
Satd. Flow (perm)	4528			1710			1277			1179		
Volume (vph)	1	1250	195	0	0	0	0	50	135	175	240	0
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.69	0.69	0.69	0.81	0.81	0.81
Adj. Flow (vph)	1	1420	222	0	0	0	0	72	196	216	296	0
RTOR Reduction (vph)	0	35	0	0	0	0	0	0	90	0	0	0
Lane Group Flow (vph)	0	1608	0	0	0	0	0	72	106	216	296	0
Conf. Bikes (#/hr)	1											
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	3%	3%	3%	3%
Parking (#/hr)	2											
Turn Type	Perm			Perm D,P+P								
Protected Phases	1			4								
Permitted Phases	1			4								
Actuated Green, G (s)	26.0			12.0								
Effective Green, g (s)	27.0			13.0								
Actuated g/C Ratio	0.44			0.21								
Clearance Time (s)	5.0			5.0								
Vehicle Extension (s)	3.0			2.0								
Lane Grp Cap (vph)	2004			364			272			484		
v/s Ratio Prot	0.04			0.07								
v/s Ratio Perm	0.36			0.08								
v/c Ratio	0.80			0.20								
Uniform Delay, d1	14.7			19.7								
Progression Factor	1.00			1.00								
Incremental Delay, d2	3.5			1.2								
Delay (s)	18.2			20.9								
Level of Service	B			C								
Approach Delay (s)	18.2			0.0			23.7			15.5		
Approach LOS	B			A			C			B		
<b>Intersection Summary</b>												
HCM Average Control Delay	18.2			HCM Level of Service						B		
HCM Volume to Capacity ratio	0.61											
Actuated Cycle Length (s)	61.0			Sum of lost time (s)								
Intersection Capacity Utilization	61.7%			ICU Level of Service								
Analysis Period (min)	15											

c Critical Lane Group

Lanes, Volumes, Timings  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations	↔		↔		↔		↔		↔		↔		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50	50		50	50		50	50		50	50		
Trailing Detector (ft)	0	0		0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Right Turn on Red	Yes			Yes			Yes			No			
Link Speed (mph)	30		30		30		30		30		30		
Link Distance (ft)	414		343		372		197		197		197		
Travel Time (s)	9.4		7.8		8.5		4.5		4.5		4.5		
Volume (vph)	5	100	1	50	60	15	105	235	105	215	285	10	
Conf. Bikes (#/hr)			1		4		4		4		4		
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.80	0.80	0.80	0.95	0.95	0.95	
Heavy Vehicles (%)	2%	2%	2%	9%	9%	9%	2%	2%	2%	3%	3%	3%	
Lane Group Flow (vph)	0	115	0	0	142	0	0	556	0	226	311	0	
Turn Type	Perm		Perm		D.P+P		Perm		Perm		Perm		
Protected Phases	3		3		4		1 4		1		2		
Permitted Phases	3		3		1		1		1		1		
Detector Phases	3		3		4		1 4		1		1		
Minimum Initial (s)	7.0		7.0		4.0		7.0		7.0		2.0		
Minimum Split (s)	21.0		21.0		7.0		20.0		20.0		21.0		
Total Split (s)	21.0		21.0		0.0		7.0		48.0		0.0		21.0
Total Split (%)	23.3%	23.3%	0.0%	23.3%	23.3%	0.0%	7.8%	53.3%	0.0%	45.6%	45.6%	0.0%	23%
Yellow Time (s)	3.0		3.0		3.0		3.0		3.0		3.0		
All-Red Time (s)	2.0		2.0		2.0		0.0		1.0		1.0		
Lead/Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max	C-Max	C-Max	None	None	None	None	
v/c Ratio	0.21		0.19		0.53		0.88		0.46		0.19		
Control Delay	27.4		23.9		21.7		60.6		22.0		21.0		
Queue Delay	0.0		0.0		0.0		0.0		0.0		0.0		
Total Delay	27.4		23.9		21.7		60.6		22.0		21.0		
Queue Length 50th (ft)	39		22		132		116		125		117		
Queue Length 95th (ft)	108		59		m153		#258		199		117		
Internal Link Dist (ft)	334		263		1045		256		679		117		
Turn Bay Length (ft)													
Base Capacity (vph)	544		766		1045		256		679		117		
Starvation Cap Reductn	0		0		0		0		0		0		
Spillback Cap Reductn	0		0		0		0		14		0		
Storage Cap Reductn	0		0		0		0		0		0		
Reduced v/c Ratio	0.21		0.19		0.53		0.88		0.47		0.19		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 18 (20%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.



HCM Signalized Intersection Capacity Analysis  
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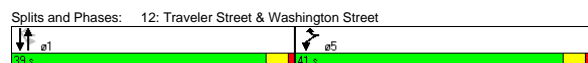
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations	↔		↔		↔		↔		↔		↔		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost Time (s)	4.0		4.0		4.0		4.0		4.0		4.0		
Lane Util. Factor	1.00		0.95		0.95		1.00		1.00		1.00		
Frpb, ped/bikes	1.00		1.00		1.00		1.00		1.00		1.00		
Flpb, ped/bikes	1.00		1.00		1.00		1.00		1.00		1.00		
Frt	1.00		0.98		0.96		1.00		0.99		1.00		
Fit Protected	1.00		0.98		0.99		0.95		1.00		1.00		
Satd. Flow (prot)	1671		2865		3020		1577		1651		1651		
Fit Permitted	0.99		0.82		0.71		0.36		1.00		1.00		
Satd. Flow (perm)	1658		2398		2179		605		1651		1651		
Volume (vph)	5	100	1	50	60	15	105	235	105	215	285	10	
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.88	0.88	0.80	0.80	0.80	0.95	0.95	0.95	
Adj. Flow (vph)	5	109	1	57	68	17	131	294	131	226	300	11	
RTOR Reduction (vph)	0	0	0	0	9	0	0	34	0	0	0	0	
Lane Group Flow (vph)	0	115	0	0	133	0	0	522	0	226	311	0	
Conf. Bikes (#/hr)			1		4		4		4		4		
Heavy Vehicles (%)	2%	2%	2%	9%	9%	9%	2%	2%	2%	3%	3%	3%	
Turn Type	Perm		Perm		D.P+P		Perm		Perm		Perm		
Protected Phases	3		3		4		1 4		1		1		
Permitted Phases	3		3		1		1		1		1		
Detector Phases	3		3		4		1 4		1		1		
Actuated Green, G (s)	28.6		28.6		38.6		34.6		34.6		34.6		
Effective Green, g (s)	29.6		29.6		37.6		34.6		34.6		34.6		
Actuated g/C Ratio	0.33		0.33		0.42		0.38		0.38		0.38		
Clearance Time (s)	5.0		5.0		4.0		4.0		4.0		4.0		
Vehicle Extension (s)	2.0		2.0		2.0		2.0		2.0		2.0		
Lane Grp Cap (vph)	545		789		938		233		635		117		
v/s Ratio Prot					c0.07		0.21		c0.37		0.19		
v/s Ratio Perm	c0.07		0.06		0.21		0.56		0.97		0.49		
Uniform Delay, d1	21.8		21.5		19.9		27.2		21.0		21.0		
Progression Factor	1.00		1.00		1.34		1.00		1.00		1.00		
Incremental Delay, d2	0.9		0.5		1.6		51.7		2.7		2.7		
Delay (s)	22.7		21.9		28.2		78.9		23.7		23.7		
Level of Service	C		C		C		E		C		C		
Approach Delay (s)	22.7		21.9		28.2		46.9		23.7		23.7		
Approach LOS	C		C		C		D		C		C		

**Intersection Summary**  
 HCM Average Control Delay: 34.5  
 HCM Volume to Capacity ratio: 0.62  
 Actuated Cycle Length (s): 90.0  
 Intersection Capacity Utilization: 52.1%  
 Analysis Period (min): 15  
 HCM Level of Service: C  
 Sum of lost time (s): 22.8  
 ICU Level of Service: A  
 Critical Lane Group

Lanes, Volumes, Timings  
 10995.00 :: Boston Herald Redevelopment  
 12: Traveler Street & Washington Street 2016 Build Conditions - BRA Improvements Analysis :: Weekday Evening Peak

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕	↕	↗	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Turning Speed (mph)	15	9		9	15	
Right Turn on Red	Yes		Yes			
Link Speed (mph)	25		25			30
Link Distance (ft)	414		395			304
Travel Time (s)	11.3		10.8			6.9
Volume (vph)	40	155	410	95	10	60
Peak Hour Factor	0.75	0.75	0.92	0.92	0.85	0.85
Heavy Vehicles (%)	0%	9%	5%	0%	0%	100%
Lane Group Flow (vph)	53	207	549	0	0	83
Turn Type	custom			Perm		
Protected Phases	5	5	1			1
Permitted Phases	1		1			
Detector Phases	5	5	1		1	1
Minimum Initial (s)	8.0	8.0	10.0		10.0	10.0
Minimum Split (s)	28.0	28.0	28.0		28.0	28.0
Total Split (s)	41.0	41.0	39.0	0.0	39.0	39.0
Total Split (%)	51.3%	51.3%	48.8%	0.0%	48.8%	48.8%
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max		C-Max	C-Max
v/c Ratio	0.32	0.16	0.23			0.07
Control Delay	38.7	0.2	2.1			1.9
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	38.7	0.2	2.1			1.9
Queue Length 50th (ft)	25	0	22			3
Queue Length 95th (ft)	48	0	35			6
Internal Link Dist (ft)	334		315			224
Turn Bay Length (ft)						
Base Capacity (vph)	751	1333	2429			1246
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	0.07	0.16	0.23			0.07

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 6 (8%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis  
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 12: Traveler Street & Washington Street 2016 Build Conditions - BRA Improvements Analysis :: Weekday Evening Peak

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕	↕	↗	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	1.00	0.95			0.95
Fr	1.00	0.85	0.97			1.00
Flt Protected	0.95	1.00	1.00			0.99
Satd. Flow (prot)	1624	1333	3034			1739
Flt Permitted	0.95	1.00	1.00			0.90
Satd. Flow (perm)	1624	1333	3034			1574
Volume (vph)	40	155	410	95	10	60
Peak-hour factor, PHF	0.75	0.75	0.92	0.92	0.85	0.85
Adj. Flow (vph)	53	207	446	103	12	71
RTOR Reduction (vph)	0	0	9	0	0	0
Lane Group Flow (vph)	53	207	540	0	0	83
Heavy Vehicles (%)	0%	9%	5%	0%	0%	100%
Turn Type	custom			Perm		
Protected Phases	5	5	1			1
Permitted Phases	1		1			
Actuated Green, G (s)	8.2	72.0	63.8			63.8
Effective Green, g (s)	8.2	72.0	63.8			63.8
Actuated g/C Ratio	0.10	0.90	0.80			0.80
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	2.0	2.0	2.0			2.0
Lane Grp Cap (vph)	166	1333	2420			1255
v/s Ratio Prot	c0.03	0.02	c0.18			
v/s Ratio Perm		0.14				0.05
v/c Ratio	0.32	0.16	0.22			0.07
Uniform Delay, d1	33.3	0.5	2.0			1.7
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.4	0.0	0.2			0.1
Delay (s)	33.7	0.5	2.2			1.8
Level of Service	C	A	A			A
Approach Delay (s)	7.3	2.2				1.8
Approach LOS	A	A				A

**Intersection Summary**  
 HCM Average Control Delay: 3.6 HCM Level of Service: A  
 HCM Volume to Capacity ratio: 0.23  
 Actuated Cycle Length (s): 80.0 Sum of lost time (s): 8.0  
 Intersection Capacity Utilization: 33.3% ICU Level of Service: A  
 Analysis Period (min): 15  
 c Critical Lane Group

Lanes, Volumes, Timings  
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 13: East Berkeley Street & Washington Street 2016 Build Conditions - BRA Improvements Analysis :: Weekday Evening Peak

Lane Group	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0	0	0	0	0	80	0	0	0	0	
Storage Lanes	0	0	0	0	0	1	0	0	0	0	0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)				50	50		50	50		50		
Trailing Detector (ft)				0	0		0	0		0		
Turning Speed (mph)	15		9	15		9	15		9	15		9
Right Turn on Red		Yes			Yes			Yes			Yes	
Link Speed (mph)		30			25			25			30	
Link Distance (ft)		325			505			468			395	
Travel Time (s)		7.4			13.8			12.8			9.0	
Volume (vph)	0	0	0	165	875	75	120	430	0	0	70	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	100%	2%	
Lane Group Flow (vph)	0	0	0	0	1212	0	130	467	0	0	109	0
Turn Type				Split		Perm						
Protected Phases				5	5		1		1		2	
Permitted Phases						1						
Detector Phases				5	5		1	1			1	
Minimum Initial (s)				8.0	8.0		20.0	20.0			20.0	2.0
Minimum Split (s)				25.0	25.0		24.0	24.0			24.0	24.0
Total Split (s)	0.0	0.0	0.0	35.0	35.0	0.0	41.0	41.0	0.0	0.0	41.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	35.0%	35.0%	0.0%	41.0%	41.0%	0.0%	0.0%	41.0%	0.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Lead/Lag				Lead	Lead		Lead	Lead		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode				None	None		C-Min	C-Min		C-Min	None	
v/c Ratio				0.88	0.88		0.24	0.59		0.12		
Control Delay				41.8	41.8		21.3	26.7		14.2		
Queue Delay				0.0	0.0		0.0	0.0		0.0		
Total Delay				41.8	41.8		21.3	26.7		14.2		
Queue Length 50th (ft)				263	263		58	256		16		
Queue Length 95th (ft)				322	322		107	382		36		
Internal Link Dist (ft)		245		425	425		388	388		315		
Turn Bay Length (ft)							80					
Base Capacity (vph)				1403	1403		542	793		880		
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				0.86	0.86		0.24	0.59		0.12		

**Intersection Summary**  
 Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 98 (98%), Referenced to phase 1:NBSB, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis  
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Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)												
Lane Util. Factor												
Fit Protected												
Satd. Flow (prot)												
Fit Permitted												
Satd. Flow (perm)												
Volume (vph)	0	0	0	165	875	75	120	430	0	0	70	30
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	179	951	82	130	467	0	0	76	33
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	0	0	0	1204	0	130	467	0	0	91	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	100%	2%	
Turn Type				Split		Perm						
Protected Phases				5	5		1				1	
Permitted Phases						1						
Actuated Green, G (s)				30.3	30.3		46.5	46.5			46.5	
Effective Green, g (s)				30.3	30.3		46.5	46.5			46.5	
Actuated g/C Ratio				0.30	0.30		0.46	0.46			0.46	
Clearance Time (s)				4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)				1363	1363		532	779			847	
v/s Ratio Prot				c0.27	c0.27		c0.28	c0.28			0.05	
v/s Ratio Perm							0.11	0.11				
v/c Ratio				0.88	0.88		0.24	0.60			0.11	
Uniform Delay, d1				33.2	33.2		16.1	19.8			15.1	
Progression Factor				1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2				7.1	7.1		1.1	3.4			0.3	
Delay (s)				40.3	40.3		17.2	23.2			15.3	
Level of Service				D	D		B	C			B	
Approach Delay (s)		0.0			40.3			21.9			15.3	
Approach LOS		A			D			C			B	

**Intersection Summary**

HCM Average Control Delay	33.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

# Appendix E

## Air Quality Supporting Documentation

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### MOBILE 6.2 Input Files

### MOBILE 6.2 Output Files

### Microscale Input Files

- 2011 Existing Condition
- 2016 No-Build Condition
- 2016 Build Condition

### Microscale Output Files

- 2011 Existing Condition
- 2016 No-Build Condition
- 2016 Build Condition

### Microscale Results

- Carbon Monoxide (CO)

### Mesoscale Results

- Oxides Of Nitrogen (NOX)
- Volatile Organic Compound (VOC)
- Particulate Matter 2.5 (PM2.5)
- Particulate Matter 10 (PM10)

# MOBILE 6.2 Input Files

MA11\_WI.inp

\* Calendar Year 2011 Generic MOBILE6 input file for Mesoscale Build/No-Build Analyses  
 \* Filename MA11\_ALL.INP created by Craig Woleader, MADEP 617-348-4046, craig.woleader@state.ma.us and Marc Bennett, MADEP 617-292-5597, marc.bennett@state.ma.us  
 \* revised 12/2/05 to include actual diesel rebuild effects  
 \* revised 12/17/08 to include new IM program program for 2011  
 \*

\*\*\*\*\* Header Section \*\*\*\*\*

MOBILE6 INPUT FILE

\*  
 POLLUTANTS : HC CO NOX CO2  
 DATABASE OUTPUT :  
 WITH FIELDNAMES :  
 AGGREGATED OUTPUT :  
 EMISSIONS TABLE : MA11\_WI.N.tb1 REPLACE  
 REPORT FILE : MA11\_WI.N.txt REPLACE  
 \*

RUN DATA  
 \*\*\*\*\* Run Section #1 \*\*\*\*\*  
 > \*\*\* Winter 2011 \*\*\*

\* Pollutant output format  
 EXPRESS HC AS VOC :

\* Mass. specific user inputs -- require external data file  
 REG DIST : 2005\_REG.D  
 I/M DESC FILE : 09NEWIM.D

\* Set Diesel Rebuild effects to 10% as per EPA  
 REBUILD EFFECTS : 0.10

STAGE II REFUELING :  
 91 3 84. 84.

\* Inputs for LEV II  
 94+ LDG IMP : MA\_LEV2.D  
 T2 EXH PHASE-IN : LEV2EXH.D  
 T2 EVAP PHASE-IN : LEV2EVAP.D  
 T2 CERT : LEV2CERT.D

\* Meteorological inputs  
 MIN/MAX TEMP : 22.8 38.3

\* Fuel inputs  
 FUEL RVP : 13.5  
 FUEL PROGRAM : 2 N

DIESEL FRACTIONS :  
 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.003 0.003  
 0.002 0.002 0.002 0.002 0.001 0.001 0.001 0.000 0.001 0.001  
 0.003 0.001 0.002 0.000 0.015  
 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001  
 0.001 0.001 0.001 0.000 0.001 0.001 0.001 0.001 0.001 0.001  
 0.002 0.002 0.003 0.003 0.006  
 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001  
 0.001 0.001 0.001 0.000 0.001 0.001 0.001 0.001 0.001 0.001  
 0.002 0.002 0.003 0.003 0.006  
 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005  
 0.005 0.005 0.006 0.005 0.012 0.012 0.017 0.015 0.014 0.016  
 0.017 0.014 0.018 0.016 0.021  
 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005  
 0.005 0.005 0.006 0.005 0.012 0.012 0.017 0.015 0.014 0.016

MA11\_WI.inp

0.017	0.014	0.018	0.016	0.021					
0.176	0.176	0.176	0.176	0.176	0.176	0.176	0.176	0.170	0.207
0.202	0.206	0.243	0.176	0.285	0.267	0.212	0.255	0.295	0.249
0.251	0.188	0.175	0.182	0.186					
0.385	0.385	0.385	0.385	0.385	0.385	0.385	0.385	0.407	0.433
0.467	0.464	0.480	0.375	0.472	0.480	0.366	0.400	0.344	0.285
0.333	0.314	0.253	0.208	0.197					
0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.634	0.664
0.719	0.717	0.744	0.715	0.565	0.810	0.803	0.644	0.654	0.605
0.525	0.389	0.356	0.376	0.108					
0.830	0.830	0.830	0.830	0.830	0.830	0.830	0.830	0.845	0.860
0.840	0.819	0.813	0.610	0.686	0.570	0.733	0.607	0.729	0.685
0.725	0.631	0.350	0.305	0.186					
0.884	0.884	0.884	0.884	0.884	0.884	0.884	0.884	0.840	0.887
0.931	0.917	0.914	0.923	0.901	0.908	0.898	0.903	0.876	0.804
0.844	0.782	0.702	0.679	0.554					
0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.972	0.953
0.993	0.992	0.992	0.990	0.981	0.976	0.975	0.959	0.982	0.965
0.963	0.945	0.902	0.875	0.857					
0.972	0.972	0.972	0.972	0.972	0.972	0.972	0.972	0.955	0.984
0.995	0.992	0.991	0.995	0.993	0.993	0.995	0.992	0.986	0.995
0.981	0.993	0.971	0.982	0.977					
1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1.000	1.000	1.000	1.000	1.000					
0.786	0.786	0.786	0.786	0.786	0.786	0.786	0.786	0.917	0.884
0.925	0.968	0.961	0.972	0.985	0.971	0.941	0.905	0.965	0.940
0.907	0.964	0.609	0.880	1.000					

\*\*\*\*\* Scenario Section \*\*\*\*\*

\*\*\*\*\* Freeway Scenarios \*\*\*\*\*

SCENARIO RECORD : MA Freeway 2.71 mph (= minimum allowed freeway speed)  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 2.71 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 3 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 3 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 4 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 4 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 5 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 5 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 6 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 6 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 7 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 7 Freeway 92.0 0.0 0.0 8.0







MA11\_WI.N.inp  
EVALUATION MONTH : 1  
AVERAGE SPEED : 58 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 59 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 59 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 60 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 60 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 61 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 60.7 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 62 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 60.7 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 63 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 60.7 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 64 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 60.7 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 65 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 60.7 Freeway 92.0 0.0 0.0 8.0

\*\*\*\*\* Arterial Scenarios \*\*\*\*\*

SCENARIO RECORD : MA Arterial 2.5 mph (= minimum allowed arterial speed)  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 2.5 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 3 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 3 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 4 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 4 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 5 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 5 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 6 mph  
CALENDAR YEAR : 2011

MA11\_WI.N.inp  
EVALUATION MONTH : 1  
AVERAGE SPEED : 6 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 7 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 7 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 8 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 8 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 9 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 9 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 10 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 10 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 11 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 11 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 12 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 12 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 13 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 13 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 14 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 14 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 15 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 15 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 16 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 16 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 17 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 17 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 18 mph  
CALENDAR YEAR : 2011  
EVALUATION MONTH : 1  
AVERAGE SPEED : 18 Arterial 0.0 100.0 0.0 0.0



MA11\_WI.N.inp

CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 44 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 45 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 45 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 46 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 46 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 47 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 47 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 48 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 48 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 49 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 49 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 50 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 50 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 51 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 51 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 52 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 52 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 53 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 53 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 54 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 54 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 55 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 55 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 56 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 56 Arterial 0.0 100.0 0.0 0.0

MA11\_WI.N.inp

SCENARIO RECORD : MA Arterial speed 57 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 57 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 58 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 58 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 59 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 59 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 60 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 60 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 61 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 61 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 62 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 62 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 63 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 63 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 64 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 64 Arterial 0.0 100.0 0.0 0.0  
  
 SCENARIO RECORD : MA Arterial speed 65 mph  
 CALENDAR YEAR : 2011  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 65 Arterial 0.0 100.0 0.0 0.0

\*\*\*\*\* End of This Run \*\*\*\*\*  
 END OF RUN

MA16\_WIN.inp  
 \* Calendar Year 2016 Generic MOBILE6 input file for Mesoscale Build/No-Build Analyses  
 \* Filename MA16\_ALL.INP created by Craig Woleader, MADEP 617-348-4046, craig.woleader@state.ma.us and Marc Bennett, MADEP 617-292-5597, marc.bennett@state.ma.us  
 \* revised 12/2/05 to include actual diesel rebuild effects  
 \* revised 12/17/08 to include new IM program program for 2016  
 \* revised 11/1/09 to update diesel fractions  
 \*

\*\*\*\*\* Header Section \*\*\*\*\*

MOBILE6 INPUT FILE

POLLUTANTS : HC CO NOX CO2  
 DATABASE OUTPUT :  
 WITH FIELDNAMES :  
 AGGREGATED OUTPUT :  
 EMISSIONS TABLE : MA16\_WIN.tb1 REPLACE  
 REPORT FILE : MA16\_WIN.txt REPLACE

\*\*\*\*\* Run Section #1 \*\*\*\*\*

> \*\*\* Winter 2016 \*\*\*

\* Pollutant output format  
 EXPRESS HC AS VOC :

\* Mass. specific user inputs -- require external data file  
 REG DIST : 2005\_REG.D  
 I/M DESC FILE : 09NEWIM.D

\* Set Diesel Rebuild effects to 10% as per EPA  
 REBUILD EFFECTS : 0.10

STAGE II REFUELING :  
 91 3 84. 84.

\* Inputs for LEV II  
 94+ LDG IMP : MA\_LEV2.D  
 T2 EXH PHASE-IN : LEV2EXH.D  
 T2 EVAP PHASE-IN : LEV2EVAP.D  
 T2 CERT : LEV2CERT.D

\* Meteorological inputs  
 MIN/MAX TEMP : 22.8 38.3

\* Fuel inputs  
 FUEL RVP : 13.5  
 FUEL PROGRAM : 2 N

DIESEL FRACTIONS :  
 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000  
 0.000 0.000 0.000 0.003 0.003 0.002 0.002 0.002 0.002 0.001  
 0.001 0.001 0.000 0.001 0.001  
 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001  
 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.000 0.001  
 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001  
 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.000 0.001  
 0.001 0.001 0.001 0.001 0.001  
 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005  
 0.005 0.005 0.005 0.005 0.005 0.005 0.006 0.005 0.005 0.012  
 0.012 0.017 0.015 0.014 0.016  
 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005

MA16\_WIN.inp  
 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.006 0.005 0.012  
 0.012 0.017 0.015 0.014 0.016  
 0.176 0.176 0.176 0.176 0.176 0.176 0.176 0.176 0.176 0.176  
 0.176 0.176 0.176 0.176 0.207 0.207 0.206 0.243 0.176 0.285  
 0.267 0.212 0.255 0.295 0.249  
 0.385 0.385 0.385 0.385 0.385 0.385 0.385 0.385 0.385 0.385  
 0.385 0.385 0.385 0.407 0.433 0.467 0.464 0.480 0.375 0.472  
 0.480 0.366 0.400 0.344 0.285  
 0.674 0.674 0.674 0.674 0.674 0.674 0.674 0.674 0.674 0.674  
 0.674 0.674 0.674 0.634 0.664 0.719 0.717 0.744 0.715 0.565  
 0.810 0.803 0.644 0.654 0.605  
 0.830 0.830 0.830 0.830 0.830 0.830 0.830 0.830 0.830 0.830  
 0.830 0.830 0.830 0.845 0.860 0.860 0.840 0.819 0.813 0.610 0.686  
 0.570 0.733 0.607 0.729 0.685  
 0.884 0.884 0.884 0.884 0.884 0.884 0.884 0.884 0.884 0.884  
 0.884 0.884 0.884 0.840 0.887 0.931 0.917 0.914 0.923 0.901  
 0.908 0.898 0.903 0.876 0.804  
 0.977 0.977 0.977 0.977 0.977 0.977 0.977 0.977 0.977 0.977  
 0.977 0.977 0.977 0.972 0.953 0.993 0.992 0.992 0.990 0.981  
 0.976 0.975 0.959 0.982 0.965  
 0.972 0.972 0.972 0.972 0.972 0.972 0.972 0.972 0.972 0.972  
 0.972 0.972 0.972 0.955 0.984 0.995 0.992 0.991 0.995 0.993  
 0.993 0.995 0.992 0.986 0.995  
 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000  
 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000  
 1.000 1.000 1.000 1.000 1.000  
 0.786 0.786 0.786 0.786 0.786 0.786 0.786 0.786 0.786 0.786  
 0.786 0.786 0.786 0.917 0.884 0.925 0.968 0.961 0.972 0.985  
 0.971 0.941 0.905 0.965 0.940

\*\*\*\*\* Scenario Section \*\*\*\*\*

\*\*\*\*\* Freeway Scenarios \*\*\*\*\*

SCENARIO RECORD : MA Freeway 2.71 mph (= minimum allowed freeway speed)  
 CALENDAR YEAR : 2016  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 2.71 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 3 mph  
 CALENDAR YEAR : 2016  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 3 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 4 mph  
 CALENDAR YEAR : 2016  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 4 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 5 mph  
 CALENDAR YEAR : 2016  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 5 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 6 mph  
 CALENDAR YEAR : 2016  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 6 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 7 mph  
 CALENDAR YEAR : 2016  
 EVALUATION MONTH : 1  
 AVERAGE SPEED : 7 Freeway 92.0 0.0 0.0 8.0







MA16\_WI.N.inp  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 58 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 59 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 59 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 60 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 60 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 61 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 60.7 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 62 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 60.7 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 63 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 60.7 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 64 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 60.7 Freeway 92.0 0.0 0.0 8.0

SCENARIO RECORD : MA Freeway speed 65 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 60.7 Freeway 92.0 0.0 0.0 8.0

\*\*\*\*\* Arterial Scenarios \*\*\*\*\*

SCENARIO RECORD : MA Arterial 2.5 mph (= minimum allowed arterial speed)  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 2.5 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 3 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 3 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 4 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 4 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 5 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 5 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 6 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 6 Arterial 0.0 100.0 0.0 0.0

MA16\_WI.N.inp  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 6 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 7 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 7 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 8 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 8 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 9 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 9 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 10 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 10 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 11 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 11 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 12 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 12 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 13 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 13 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 14 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 14 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 15 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 15 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 16 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 16 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 17 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 17 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 18 mph  
CALENDAR YEAR : 2016  
EVALUATION MONTH : 1  
AVERAGE SPEED : 18 Arterial 0.0 100.0 0.0 0.0



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                                MA16_WI.N.inp
SCENARIO RECORD : MA Arterial speed 44 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 44 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 45 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 45 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 46 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 46 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 47 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 47 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 48 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 48 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 49 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 49 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 50 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 50 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 51 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 51 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 52 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 52 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 53 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 53 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 54 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 54 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 55 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 55 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 56 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1

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                                MA16_WI.N.inp
AVERAGE SPEED  : 56 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 57 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 57 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 58 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 58 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 59 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 59 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 60 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 60 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 61 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 61 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 62 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 62 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 63 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 63 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 64 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 64 Arterial 0.0 100.0 0.0 0.0

SCENARIO RECORD : MA Arterial speed 65 mph
CALENDAR YEAR   : 2016
EVALUATION MONTH : 1
AVERAGE SPEED  : 65 Arterial 0.0 100.0 0.0 0.0

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***** End of This Run *****
END OF RUN

```

# MOBILE 6.2 Output Files

Converting Date: 6/3/2011

Mobile Output File: \\kirk\dept\T\TS\TPO\AirQuality\Models\MOBILE\Mobile 6\_2\Massachusetts\2011\MA11\_WIN.TXT  
Excel File: \\kirk\dept\T\TS\TPO\AirQuality\Models\MOBILE\Mobile 6\_2\Massachusetts\2011\MA11\_WIN.TXT

Mobile Emission Rate

Speed	Type	CO	Speed	Type	CO
2.7	Freeway	23.1500	2.5	Arterial	24.0000
3	Freeway	21.8700	3	Arterial	21.6100
4	Freeway	18.8800	4	Arterial	18.6200
5	Freeway	17.0800	5	Arterial	16.8200
6	Freeway	15.7700	6	Arterial	15.5800
7	Freeway	14.7800	7	Arterial	14.6900
8	Freeway	14.0300	8	Arterial	14.0200
9	Freeway	13.4500	9	Arterial	13.5100
10	Freeway	12.9900	10	Arterial	13.0900
11	Freeway	12.6100	11	Arterial	12.7400
12	Freeway	12.3100	12	Arterial	12.4500
13	Freeway	12.0500	13	Arterial	12.2100
14	Freeway	11.8300	14	Arterial	12.0000
15	Freeway	11.6300	15	Arterial	11.8200
16	Freeway	11.4900	16	Arterial	11.6500
17	Freeway	11.4100	17	Arterial	11.5000
18	Freeway	11.3400	18	Arterial	11.3700
19	Freeway	11.2800	19	Arterial	11.2500
20	Freeway	11.2200	20	Arterial	11.1400
21	Freeway	11.1700	21	Arterial	11.0500
22	Freeway	11.1200	22	Arterial	10.9700
23	Freeway	11.0800	23	Arterial	10.8900
24	Freeway	11.0400	24	Arterial	10.8200
25	Freeway	11.0000	25	Arterial	10.7600
26	Freeway	10.9700	26	Arterial	10.7200
27	Freeway	10.9400	27	Arterial	10.6800
28	Freeway	10.9100	28	Arterial	10.6500
29	Freeway	10.8900	29	Arterial	10.6200
30	Freeway	10.8600	30	Arterial	10.5900
31	Freeway	10.8500	31	Arterial	10.5900
32	Freeway	10.8600	32	Arterial	10.5900
33	Freeway	10.8600	33	Arterial	10.6000
34	Freeway	10.8600	34	Arterial	10.6000
35	Freeway	10.8700	35	Arterial	10.6000
36	Freeway	10.9300	36	Arterial	10.6600
37	Freeway	10.9900	37	Arterial	10.7200
38	Freeway	11.0400	38	Arterial	10.7800
39	Freeway	11.1000	39	Arterial	10.8300
40	Freeway	11.1600	40	Arterial	10.8800
41	Freeway	11.2200	41	Arterial	10.9500
42	Freeway	11.2900	42	Arterial	11.0100
43	Freeway	11.3500	43	Arterial	11.0700
44	Freeway	11.4100	44	Arterial	11.1300
45	Freeway	11.4800	45	Arterial	11.1800
46	Freeway	11.5500	46	Arterial	11.2500
47	Freeway	11.6100	47	Arterial	11.3200
48	Freeway	11.6800	48	Arterial	11.3800
49	Freeway	11.7500	49	Arterial	11.4400
50	Freeway	11.8300	50	Arterial	11.5000
51	Freeway	11.9000	51	Arterial	11.5800
52	Freeway	11.9700	52	Arterial	11.6500
53	Freeway	12.0500	53	Arterial	11.7100
54	Freeway	12.1400	54	Arterial	11.7800
55	Freeway	12.2200	55	Arterial	11.8400
56	Freeway	12.3000	56	Arterial	11.9200
57	Freeway	12.3900	57	Arterial	12.0000
58	Freeway	12.4800	58	Arterial	12.0800
59	Freeway	12.5800	59	Arterial	12.1500
60	Freeway	12.6700	60	Arterial	12.2200
60.7	Freeway	12.7300	61	Arterial	12.3100
60.7	Freeway	12.7300	62	Arterial	12.3900
60.7	Freeway	12.7300	63	Arterial	12.4700
60.7	Freeway	12.7300	64	Arterial	12.5500
60.7	Freeway	12.7300	65	Arterial	12.6300

Converting Date: 6/3/2011

Mobile Output File: \\kirk\dept\T\TS\TPO\AirQuality\Models\MOBILE\Mobile 6\_2\Massachusetts\2016\MA16\_WIN.TXT  
Excel File: \\kirk\dept\T\TS\TPO\AirQuality\Models\MOBILE\Mobile 6\_2\Massachusetts\2016\MA16\_WIN.TXT

le Emission Rate

Speed	Type	CO	Speed	Type	CO
2.7	Freeway	19.1800	2.5	Arterial	19.8900
3	Freeway	18.1400	3	Arterial	17.9600
4	Freeway	15.7300	4	Arterial	15.5500
5	Freeway	14.2800	5	Arterial	14.1000
6	Freeway	13.2200	6	Arterial	13.0900
7	Freeway	12.4100	7	Arterial	12.3700
8	Freeway	11.8000	8	Arterial	11.8400
9	Freeway	11.3300	9	Arterial	11.4200
10	Freeway	10.9500	10	Arterial	11.0800
11	Freeway	10.6500	11	Arterial	10.8000
12	Freeway	10.4000	12	Arterial	10.5600
13	Freeway	10.1900	13	Arterial	10.3700
14	Freeway	10.0100	14	Arterial	10.2000
15	Freeway	9.8500	15	Arterial	10.0500
16	Freeway	9.7300	16	Arterial	9.9100
17	Freeway	9.6800	17	Arterial	9.7900
18	Freeway	9.6200	18	Arterial	9.6900
19	Freeway	9.5800	19	Arterial	9.5900
20	Freeway	9.5300	20	Arterial	9.5100
21	Freeway	9.5000	21	Arterial	9.4300
22	Freeway	9.4600	22	Arterial	9.3600
23	Freeway	9.4300	23	Arterial	9.3000
24	Freeway	9.4000	24	Arterial	9.2500
25	Freeway	9.3700	25	Arterial	9.1900
26	Freeway	9.3400	26	Arterial	9.1600
27	Freeway	9.3200	27	Arterial	9.1400
28	Freeway	9.3000	28	Arterial	9.1100
29	Freeway	9.2800	29	Arterial	9.0900
30	Freeway	9.2600	30	Arterial	9.0700
31	Freeway	9.2600	31	Arterial	9.0700
32	Freeway	9.2600	32	Arterial	9.0700
33	Freeway	9.2600	33	Arterial	9.0700
34	Freeway	9.2600	34	Arterial	9.0700
35	Freeway	9.2700	35	Arterial	9.0800
36	Freeway	9.3200	36	Arterial	9.1300
37	Freeway	9.3700	37	Arterial	9.1800
38	Freeway	9.4200	38	Arterial	9.2300
39	Freeway	9.4700	39	Arterial	9.2800
40	Freeway	9.5200	40	Arterial	9.3200
41	Freeway	9.5800	41	Arterial	9.3800
42	Freeway	9.6300	42	Arterial	9.4300
43	Freeway	9.6900	43	Arterial	9.4900
44	Freeway	9.7400	44	Arterial	9.5400
45	Freeway	9.8000	45	Arterial	9.5800
46	Freeway	9.8600	46	Arterial	9.6400
47	Freeway	9.9100	47	Arterial	9.7000
48	Freeway	9.9700	48	Arterial	9.7500
49	Freeway	10.0300	49	Arterial	9.8100
50	Freeway	10.1000	50	Arterial	9.8600
51	Freeway	10.1600	51	Arterial	9.9200
52	Freeway	10.2200	52	Arterial	9.9800
53	Freeway	10.2800	53	Arterial	10.0300
54	Freeway	10.3600	54	Arterial	10.0900
55	Freeway	10.4300	55	Arterial	10.1400
56	Freeway	10.5000	56	Arterial	10.2100
57	Freeway	10.5800	57	Arterial	10.2800
58	Freeway	10.6600	58	Arterial	10.3400
59	Freeway	10.7400	59	Arterial	10.4100
60	Freeway	10.8100	60	Arterial	10.4700
60.7	Freeway	10.8700	61	Arterial	10.5400
60.7	Freeway	10.8700	62	Arterial	10.6100
60.7	Freeway	10.8700	63	Arterial	10.6800
60.7	Freeway	10.8700	64	Arterial	10.7500
60.7	Freeway	10.8700	65	Arterial	10.8200

# Microscale Input Files

# 2011 Existing Condition



2011EX\_1

' HERALD SQUARE'	60	175	0	0	45	0.3048	1	0											
' Heral d/Al bany E1'		4648.77		2383.54		6													
' Heral d/Al bany E2'		4626.33		2311.98		6													
' Heral d/Al bany E3'		4603.88		2240.41		6													
' Heral d/Al bany E4'		4589.33		2166.84		6													
' Heral d/Al bany E5'		4572.74		2093.68		6													
' Heral d/Al bany SW1'		4473.79		2072.01		6													
' Heral d/Al bany SW2'		4493.84		2144.29		6													
' Heral d/Al bany SW3'		4513.88		2216.56		6													
' Heral d/Al bany SW4'		4441.59		2236.54		6													
' Heral d/Al bany SW5'		4369.3		2256.53		6													
' Heral d/Al bany NW1'		4396.03		2325.91		6													
' Heral d/Al bany NW2'		4468.32		2305.93		6													
' Heral d/Al bany NW3'		4540.61		2285.95		6													
' Heral d/Al bany NW4'		4563.05		2357.51		6													
' Heral d/Al bany NW5'		4585.5		2429.07		6													
' Heral dDr/Al bany E1'		4597.53		2196.38		6													
' Heral dDr/Al bany E2'		4581.7		2122.49		6													
' Heral dDr/Al bany E3'		4557.42		2051.77		6													
' Heral dDr/Al bany E4'		4537.44		1979.71		6													
' Heral dDr/Al bany E5'		4509.66		1909.53		6													
' Heral dDr/Al bany SW1'		4435.07		1918.7		6													
' Heral dDr/Al bany SW2'		4457.11		1990.6		6													
' Heral dDr/Al bany SW3'		4479.07		2062.26		6													
' Heral dDr/Al bany SW4'		4399.01		2082.94		6													
' Heral dDr/Al bany SW5'		4326.39		2101.69		6													
' Heral dDr/Al bany NW1'		4339.75		2149.88		6													
' Heral dDr/Al bany NW2'		4412.37		2131.13		6													
' Heral dDr/Al bany NW3'		4484.99		2112.37		6													
' Heral dDr/Al bany NW4'		4505.03		2184.65		6													
' Heral dDr/Al bany NW5'		4525.07		2256.92		6													
' Travel er/Front NE1'		4757.61		1640.36		6													
' Travel er/Front NE2'		4736.09		1568.52		6													
' Travel er/Front NE3'		4714.57		1496.67		6													
' Travel er/Front NE4'		4786.91		1476.86		6													
' Travel er/Front NE5'		4859.24		1457.05		6													
' Travel er/Front SE1'		4845.61		1371.61		6													
' Travel er/Front SE2'		4773.27		1391.43		6													
' Travel er/Front SE3'		4700.94		1411.24		6													
' Travel er/Front SE4'		4678.48		1339.68		6													
' Travel er/Front SE5'		4656.03		1268.12		6													
' Travel er/Front SW1'		4573.42		1292.1		6													
' Travel er/Front SW2'		4595.79		1363.41		6													
' Travel er/Front SW3'		4618.25		1434.97		6													
' Travel er/Front SW4'		4546.4		1456.49		6													
' Travel er/Front SW5'		4474.56		1478.01		6													
' 2011EX'	30	1	0	' C'															
2																			
' Travel er/Front EB LL'	' AG'	4650.22		1476.36		4569.81		1494.79		1	20	2							
100	76	3	330	60.02	1600	1	3												
2																			
' Travel er/Front EB TT'	' AG'	4643.58		1454.98		4565.39		1474.15		1	20	2							
100	34	3	980	60.02	1600	1	3												
2																			
' Travel er/Front WB'	' AG'	4688.76		1474.43		4768.98		1451.67		1	20	2							
100	58	3	710	60.02	1600	1	3												
2																			
' Travel er/Front NB'	' AG'	4659.78		1420.64		4635.97		1355.98		1	20	2							
100	66	3	1010	60.02	1600	1	3												
2																			
' EastBerk/Al bany SB'	' AG'	4245.37		1211.3		4285.16		1321.02		1	30	3							
110	59	3	975	60.02	1600	1	3												
2																			

2011EX_1										
' EastBerk/Al bany WB'	' AG'	4263. 21	1180. 67	4347. 37	1150. 96	1	30	3		
110 51 3 935	60.02	1600 1 3								
2										
' EastBerk/Front NB LL'	' AG'	4434. 76	1106. 38	4412. 8	1051. 06	1	20	2		
110 59 3 390	60.02	1600 1 3								
2										
' EastBerk/Front NB TT'	' AG'	4456. 26	1097. 23	4434. 76	1038. 72	1	20	2		
110 59 3 1285	60.02	1600 1 3								
2										
' EastBerk/Front WB'	' AG'	4492. 85	1109. 58	4619. 56	1065. 23	1	30	3		
110 51 3 690	60.02	1600 1 3								
2										
' Heral d/Al bany SB'	' AG'	4576. 31	2268. 9	4603. 8	2369. 51	1	30	3		
100 50 3 1470	60.02	1600 1 3								
2										
' Heral d/Al bany EB '	' AG'	4524. 96	2254. 36	4436. 02	2276. 99	1	30	3		
100 50 3 1490	60.02	1600 1 3								
2										
' Heral dDr/Al bany EB'	' AG'	4483. 3	2089. 67	4402. 03	2109. 47	1	10	1		
120 70 3 10	60.02	1600 1 3								
1										
' Heral d/Al bany West'	' AG'	4565. 21	2240. 76	4160. 33	2352. 68	1490	10. 597			
1 54										
1										
' Heral d/Al bany North'	' AG'	4565. 21	2240. 76	4645. 33	2496. 19	1470	10. 597			
1 54										
1										
' Heral d/Al bany South'	' AG'	4565. 21	2240. 76	4493. 6	1982. 52	2960	10. 597			
1 66										
1										
' Travel er/Front West'	' AG'	4672. 32	1463. 66	4536. 89	1504. 23	1310	10. 597			
1 66										
1										
' Travel er/Front North'	' AG'	4672. 32	1463. 66	4707. 09	1579. 73	1785				
10. 597 1 42										
1										
' Travel er/Front East'	' AG'	4672. 32	1463. 66	4779. 59	1434. 28	1745	10. 597			
1 66										
1										
' Travel er/Front South'	' AG'	4672. 32	1463. 66	4625. 52	1314. 52	1065				
10. 597 1 66										
1										
' EastBerk/Al bany West'	' AG'	4237. 4	1189. 12	4008. 47	1261. 15	1065	10. 597			
1 54										
1										
' EastBerk/Al bany North'	' AG'	4237. 4	1189. 12	4312. 65	1388. 25	975	10. 597			
1 54										
1										
' EastBerk/Al bany East'	' AG'	4237. 4	1189. 12	4363. 52	1140. 4	935	10. 597			
1 54										
1										
' EastBerk/Al bany Sout'	' AG'	4237. 4	1189. 12	4177. 37	998. 34	845	10. 597			
1 54										
1										
' EastBerk/Front West'	' AG'	4451. 49	1114. 97	4363. 52	1140. 4	935	10. 597			
1 54										
1										
' EastBerk/Front North'	' AG'	4451. 49	1114. 97	4491. 41	1253. 11	1070				
10. 597 1 54										
1										
' EastBerk/Front East'	' AG'	4451. 49	1114. 97	4657. 1	1037. 65	985	10. 597			
1 66										
1										

		2011EX_1						
' EastBerk/Front South'	' AG'	4451.48	1114.94	4392.14	968.8	1385	10.597	
1 54								
1								
' Heral dDr/Al bany West'	' AG'	4521.42	2077.14	4389.06	2111.33	10	10.597	
1 30								
1								
' Heral dDr/Al bany Nort'	' AG'	4521.42	2073.43	4551.91	2171.52	2960		
10.597 1 66								
1								
' Heral dDr/Al bany Sout'	' AG'	4521.42	2074.17	4484.98	1955.27	2075		
10.597 1 54								
1 0 4 1000 0	' Y'	10	0	36				

2011EX\_2

' HERALD SQUARE'	60	175	0	0	40	0.3048	1	0		
' EastBerk/Front NE1'		4539.85		1287.45		6				
' EastBerk/Front NE2'		4519.03		1215.4		6				
' EastBerk/Front NE3'		4498.2	1143.34			6				
' EastBerk/Front NE4'		4568.4	1116.95			6				
' EastBerk/Front NE5'		4638.61	1090.55			6				
' EastBerk/Front SE1'		4610.35	1009.29			6				
' EastBerk/Front SE2'		4540.15	1035.69			6				
' EastBerk/Front SE3'		4469.95	1062.09			6				
' EastBerk/Front SE4'		4441.73	992.6		6					
' EastBerk/Front SE5'		4413.52	923.11			6				
' EastBerk/Front SW1'		4345.84	953.13			6				
' EastBerk/Front SE2'		4374.18	1022.93			6				
' EastBerk/Front SE3'		4401.76	1090.83			6				
' EastBerk/Front SE4'		4339.68	1109.94			6				
' EastBerk/Front SE5'		4269.63	1137		6					
' EastBerk/Front NW1'		4284.7	1210.51			6				
' EastBerk/Front NW2'		4354.73	1183.46			6				
' EastBerk/Front NW3'		4426.22	1160.79			6				
' EastBerk/Front NW4'		4447.04	1232.84			6				
' EastBerk/Front NW5'		4467.86	1304.9			6				
' EastBerk/Al bany NE1'		4338.02	1350.71			6				
' EastBerk/Al bany NE2'		4311.51	1280.56			6				
' EastBerk/Al bany NE3'		4284.99	1210.4			6				
' EastBerk/Al bany NE4'		4354.96	1183.37			6				
' EastBerk/Al bany NE5'		4426.52	1160.7			6				
' EastBerk/Al bany SE1'		4402.37	1090.66			6				
' EastBerk/Al bany SE2'		4330.82	1113.37			6				
' EastBerk/Al bany SE3'		4260.86	1140.39			6				
' EastBerk/Al bany SE4'		4238.35	1068.85			6				
' EastBerk/Al bany SE5'		4215.84	997.31			6				
' EastBerk/Al bany SW1'		4145.98	1021.85			6				
' EastBerk/Al bany SW2'		4168.49	1093.39			6				
' EastBerk/Al bany SW3'		4191	1164.93			6				
' EastBerk/Al bany SW4'		4119.46	1187.44			6				
' EastBerk/Al bany SW5'		4047.92	1209.95			6				
' EastBerk/Al bany NW1'		4072.06	1279.93			6				
' EastBerk/Al bany NW2'		4143.61	1257.42			6				
' EastBerk/Al bany NW3'		4215.15	1234.91			6				
' EastBerk/Al bany NW4'		4241.66	1305.07			6				
' EastBerk/Al bany NW5'		4268.17	1375.22			6				
' 2011EX'	30	1	0	' C'						
' Traveler/Front EB LL'	' AG'	4650.22	1476.36	4569.81	1494.79	1	20	2		
100	76	3	330	60.02	1600	1	3			
' Traveler/Front EB TT'	' AG'	4643.58	1454.98	4565.39	1474.15	1	20	2		
100	34	3	980	60.02	1600	1	3			
' Traveler/Front WB'	' AG'	4688.76	1474.43	4768.98	1451.67	1	20	2		
100	58	3	710	60.02	1600	1	3			
' Traveler/Front NB'	' AG'	4659.78	1420.64	4635.97	1355.98	1	20	2		
100	66	3	1010	60.02	1600	1	3			
' EastBerk/Al bany SB'	' AG'	4245.37	1211.3	4285.16	1321.02	1	30	3		
110	59	3	975	60.02	1600	1	3			
' EastBerk/Al bany WB'	' AG'	4263.21	1180.67	4347.37	1150.96	1	30	3		
110	51	3	935	60.02	1600	1	3			
' EastBerk/Front NB LL'	' AG'	4434.76	1106.38	4412.8	1051.06	1	20	2		
110	59	3	390	60.02	1600	1	3			

2011EX\_2

2	' EastBerk/Front NB TT'	' AG'	4456.26	1097.23	4434.76	1038.72	1	20	2
110	59 3 1285	60.02	1600 1 3						
2	' EastBerk/Front WB'	' AG'	4492.85	1109.58	4619.56	1065.23	1	30	3
110	51 3 690	60.02	1600 1 3						
2	' Heral d/Al bany SB'	' AG'	4576.31	2268.9	4603.8	2369.51	1	30	3
100	50 3 1470	60.02	1600 1 3						
2	' Heral d/Al bany EB '	' AG'	4524.96	2254.36	4436.02	2276.99	1	30	3
100	50 3 1490	60.02	1600 1 3						
2	' Heral dDr/Al bany EB'	' AG'	4483.3	2089.67	4402.03	2109.47	1	10	1
120	70 3 10	60.02	1600 1 3						
1	' Heral d/Al bany West'	' AG'	4565.21	2240.76	4160.33	2352.68	1490	10.597	
1	1 54								
1	' Heral d/Al bany North'	' AG'	4565.21	2240.76	4645.33	2496.19	1470	10.597	
1	1 54								
1	' Heral d/Al bany South'	' AG'	4565.21	2240.76	4493.6	1982.52	2960	10.597	
1	1 66								
1	' Travel er/Front West'	' AG'	4672.32	1463.66	4536.89	1504.23	1310	10.597	
1	1 66								
1	' Travel er/Front North'	' AG'	4672.32	1463.66	4707.09	1579.73	1785		
10.597	1 42								
1	' Travel er/Front East'	' AG'	4672.32	1463.66	4779.59	1434.28	1745	10.597	
1	1 66								
1	' Travel er/Front South'	' AG'	4672.32	1463.66	4625.52	1314.52	1065		
10.597	1 66								
1	' EastBerk/Al bany West'	' AG'	4237.4	1189.12	4008.47	1261.15	1065	10.597	
1	1 54								
1	' EastBerk/Al bany North'	' AG'	4237.4	1189.12	4312.65	1388.25	975	10.597	
1	1 54								
1	' EastBerk/Al bany East'	' AG'	4237.4	1189.12	4363.52	1140.4	935	10.597	
1	1 54								
1	' EastBerk/Al bany Sout'	' AG'	4237.4	1189.12	4177.37	998.34	845	10.597	
1	1 54								
1	' EastBerk/Front West'	' AG'	4451.49	1114.97	4363.52	1140.4	935	10.597	
1	1 54								
1	' EastBerk/Front North'	' AG'	4451.49	1114.97	4491.41	1253.11	1070		
10.597	1 54								
1	' EastBerk/Front East'	' AG'	4451.49	1114.97	4657.1	1037.65	985	10.597	
1	1 66								
1	' EastBerk/Front South'	' AG'	4451.48	1114.94	4392.14	968.8	1385	10.597	
1	1 54								
1	' Heral dDr/Al bany West'	' AG'	4521.42	2077.14	4389.06	2111.33	10	10.597	
1	1 30								

2011EX\_2

1											
'	Heral	dDr/AI	bany	Nort'	'	AG'	4521.42	2073.43	4551.91	2171.52	2960
10.597	1	66									
1											
'	Heral	dDr/AI	bany	Sout'	'	AG'	4521.42	2074.17	4484.98	1955.27	2075
10.597	1	54									
1	0	4	1000	0	'	Y'	10	0	36		

## 2016 No Build Condition

2016NB\_1

' HERALD SQUARE'	60	175	0	0	45	0.3048	1	0						
' Heral d/Al bany E1'		4648.77		2383.54		6								
' Heral d/Al bany E2'		4626.33		2311.98		6								
' Heral d/Al bany E3'		4603.88		2240.41		6								
' Heral d/Al bany E4'		4589.33		2166.84		6								
' Heral d/Al bany E5'		4572.74		2093.68		6								
' Heral d/Al bany SW1'		4473.79		2072.01		6								
' Heral d/Al bany SW2'		4493.84		2144.29		6								
' Heral d/Al bany SW3'		4513.88		2216.56		6								
' Heral d/Al bany SW4'		4441.59		2236.54		6								
' Heral d/Al bany SW5'		4369.3		2256.53		6								
' Heral d/Al bany NW1'		4396.03		2325.91		6								
' Heral d/Al bany NW2'		4468.32		2305.93		6								
' Heral d/Al bany NW3'		4540.61		2285.95		6								
' Heral d/Al bany NW4'		4563.05		2357.51		6								
' Heral d/Al bany NW5'		4585.5		2429.07		6								
' Heral dDr/Al bany E1'		4597.53		2196.38		6								
' Heral dDr/Al bany E2'		4581.7		2122.49		6								
' Heral dDr/Al bany E3'		4557.42		2051.77		6								
' Heral dDr/Al bany E4'		4537.44		1979.71		6								
' Heral dDr/Al bany E5'		4509.66		1909.53		6								
' Heral dDr/Al bany SW1'		4435.07		1918.7		6								
' Heral dDr/Al bany SW2'		4457.11		1990.6		6								
' Heral dDr/Al bany SW3'		4479.07		2062.26		6								
' Heral dDr/Al bany SW4'		4399.01		2082.94		6								
' Heral dDr/Al bany SW5'		4326.39		2101.69		6								
' Heral dDr/Al bany NW1'		4339.75		2149.88		6								
' Heral dDr/Al bany NW2'		4412.37		2131.13		6								
' Heral dDr/Al bany NW3'		4484.99		2112.37		6								
' Heral dDr/Al bany NW4'		4505.03		2184.65		6								
' Heral dDr/Al bany NW5'		4525.07		2256.92		6								
' Travel er/Front NE1'		4757.61		1640.36		6								
' Travel er/Front NE2'		4736.09		1568.52		6								
' Travel er/Front NE3'		4714.57		1496.67		6								
' Travel er/Front NE4'		4786.91		1476.86		6								
' Travel er/Front NE5'		4859.24		1457.05		6								
' Travel er/Front SE1'		4845.61		1371.61		6								
' Travel er/Front SE2'		4773.27		1391.43		6								
' Travel er/Front SE3'		4700.94		1411.24		6								
' Travel er/Front SE4'		4678.48		1339.68		6								
' Travel er/Front SE5'		4656.03		1268.12		6								
' Travel er/Front SW1'		4573.42		1292.1		6								
' Travel er/Front SW2'		4595.79		1363.41		6								
' Travel er/Front SW3'		4618.25		1434.97		6								
' Travel er/Front SW4'		4546.4		1456.49		6								
' Travel er/Front SW5'		4474.56		1478.01		6								
' 2016NB'	30	1	0	' C'										
2														
' Travel er/Front EB LL'	' AG'	4650.22		1476.36		4569.81		1494.79		1	20		2	
100	76	3	365	49.735	1600	1	3							
2														
' Travel er/Front EB TT'	' AG'	4643.58		1454.98		4565.39		1474.15		1	20		2	
100	34	3	1045	49.735	1600	1	3							
2														
' Travel er/Front WB'	' AG'	4688.76		1474.43		4768.98		1451.67		1	20		2	
100	58	3	650	49.735	1600	1	3							
2														
' Travel er/Front NB'	' AG'	4659.78		1420.64		4635.97		1355.98		1	20		2	
100	66	3	1165	49.735	1600	1	3							
2														
' EastBerk/Al bany SB'	' AG'	4245.37		1211.3		4285.16		1321.02		1	30		3	
110	59	3	1110	49.735	1600	1	3							
2														



2016NB_1										
' EastBerk/Al bany WB'	' AG'	4263. 21	1180. 67	4347. 37	1150. 96	1	30	3		
110 51 3 1005	49. 735	1600	1 3							
2										
' EastBerk/Front NB LL'	' AG'	4434. 76	1106. 38	4412. 8	1051. 06	1	20	2		
110 59 3 425	49. 735	1600	1 3							
2										
' EastBerk/Front NB TT'	' AG'	4456. 26	1097. 23	4434. 76	1038. 72	1	20	2		
110 59 3 1405	49. 735	1600	1 3							
2										
' EastBerk/Front WB'	' AG'	4492. 85	1109. 58	4619. 56	1065. 23	1	30	3		
110 51 3 735	49. 735	1600	1 3							
2										
' Heral d/Al bany SB'	' AG'	4576. 31	2268. 9	4603. 8	2369. 51	1	30	3		
100 50 3 1605	49. 735	1600	1 3							
2										
' Heral d/Al bany EB '	' AG'	4524. 96	2254. 36	4436. 02	2276. 99	1	30	3		
100 50 3 1600	49. 735	1600	1 3							
2										
' Heral dDr/Al bany EB'	' AG'	4483. 3	2089. 67	4402. 03	2109. 47	1	10	1		
120 70 3 10	49. 735	1600	1 3							
1										
' Heral d/Al bany West'	' AG'	4565. 21	2240. 76	4160. 33	2352. 68	1600	9. 073			
1 54										
1										
' Heral d/Al bany North'	' AG'	4565. 21	2240. 76	4645. 33	2496. 19	1605	9. 073			
1 54										
1										
' Heral d/Al bany South'	' AG'	4565. 21	2240. 76	4493. 6	1982. 52	3145	9. 073			
1 66										
1										
' Travel er/Front West'	' AG'	4672. 32	1463. 66	4536. 89	1504. 23	1310	9. 073			
1 66										
1										
' Travel er/Front North'	' AG'	4672. 32	1463. 66	4707. 09	1579. 73	1925	9. 073			
1 42										
1										
' Travel er/Front East'	' AG'	4672. 32	1463. 66	4779. 59	1434. 28	1855	9. 073			
1 66										
1										
' Travel er/Front South'	' AG'	4672. 32	1463. 66	4625. 52	1314. 52	1165	9. 073			
1 66										
1										
' EastBerk/Al bany West'	' AG'	4237. 4	1189. 12	4008. 47	1261. 15	1180	9. 073			
1 54										
1										
' EastBerk/Al bany North'	' AG'	4237. 4	1189. 12	4312. 65	1388. 25	1100	9. 073			
1 54										
1										
' EastBerk/Al bany East'	' AG'	4237. 4	1189. 12	4363. 52	1140. 4	1005	9. 073			
1 54										
1										
' EastBerk/Al bany Sout'	' AG'	4237. 4	1189. 12	4177. 37	998. 34	925	9. 073			
1 54										
1										
' EastBerk/Front West'	' AG'	4451. 49	1114. 97	4363. 52	1140. 4	1005	9. 073			
1 54										
1										
' EastBerk/Front North'	' AG'	4451. 49	1114. 97	4491. 41	1253. 11	1170	9. 073			
1 54										
1										
' EastBerk/Front East'	' AG'	4451. 49	1114. 97	4657. 1	1037. 65	1055	9. 073			
1 66										
1										

		2016NB_1						
' EastBerk/Front South'	' AG'	4451.48	1114.94	4392.14	968.8	1830	9.073	
1 54								
' Heral dDr/Al bany West'	' AG'	4521.42	2077.14	4389.06	2111.33	10	9.073	
1 30								
' Heral dDr/Al bany Nort'	' AG'	4521.42	2073.43	4551.91	2171.52	3205	9.073	
1 66								
' Heral dDr/Al bany Sout'	' AG'	4521.42	2074.17	4484.98	1955.27	2255	9.073	
1 54								
1 0 4 1000 0	' Y'	10	0	36				

2016NB\_2

' HERALD SQUARE'	60	175	0	0	40	0.3048	1	0		
' EastBerk/Front NE1'		4539.85		1287.45		6				
' EastBerk/Front NE2'		4519.03		1215.4		6				
' EastBerk/Front NE3'		4498.2	1143.34			6				
' EastBerk/Front NE4'		4568.4	1116.95			6				
' EastBerk/Front NE5'		4638.61	1090.55			6				
' EastBerk/Front SE1'		4610.35	1009.29			6				
' EastBerk/Front SE2'		4540.15	1035.69			6				
' EastBerk/Front SE3'		4469.95	1062.09			6				
' EastBerk/Front SE4'		4441.73	992.6		6					
' EastBerk/Front SE5'		4413.52	923.11			6				
' EastBerk/Front SW1'		4345.84	953.13			6				
' EastBerk/Front SE2'		4374.18	1022.93			6				
' EastBerk/Front SE3'		4401.76	1090.83			6				
' EastBerk/Front SE4'		4339.68	1109.94			6				
' EastBerk/Front SE5'		4269.63	1137		6					
' EastBerk/Front NW1'		4284.7	1210.51			6				
' EastBerk/Front NW2'		4354.73	1183.46			6				
' EastBerk/Front NW3'		4426.22	1160.79			6				
' EastBerk/Front NW4'		4447.04	1232.84			6				
' EastBerk/Front NW5'		4467.86	1304.9			6				
' EastBerk/Al bany NE1'		4338.02	1350.71			6				
' EastBerk/Al bany NE2'		4311.51	1280.56			6				
' EastBerk/Al bany NE3'		4284.99	1210.4			6				
' EastBerk/Al bany NE4'		4354.96	1183.37			6				
' EastBerk/Al bany NE5'		4426.52	1160.7			6				
' EastBerk/Al bany SE1'		4402.37	1090.66			6				
' EastBerk/Al bany SE2'		4330.82	1113.37			6				
' EastBerk/Al bany SE3'		4260.86	1140.39			6				
' EastBerk/Al bany SE4'		4238.35	1068.85			6				
' EastBerk/Al bany SE5'		4215.84	997.31			6				
' EastBerk/Al bany SW1'		4145.98	1021.85			6				
' EastBerk/Al bany SW2'		4168.49	1093.39			6				
' EastBerk/Al bany SW3'		4191	1164.93			6				
' EastBerk/Al bany SW4'		4119.46	1187.44			6				
' EastBerk/Al bany SW5'		4047.92	1209.95			6				
' EastBerk/Al bany NW1'		4072.06	1279.93			6				
' EastBerk/Al bany NW2'		4143.61	1257.42			6				
' EastBerk/Al bany NW3'		4215.15	1234.91			6				
' EastBerk/Al bany NW4'		4241.66	1305.07			6				
' EastBerk/Al bany NW5'		4268.17	1375.22			6				
' 2016NB'	30	1	0	' C'						
' Traveler/Front EB LL'	' AG'	4650.22	1476.36	4569.81	1494.79	1	20	2		
100	76	3	365	49.735	1600	1	3			
' Traveler/Front EB TT'	' AG'	4643.58	1454.98	4565.39	1474.15	1	20	2		
100	34	3	1045	49.735	1600	1	3			
' Traveler/Front WB'	' AG'	4688.76	1474.43	4768.98	1451.67	1	20	2		
100	58	3	650	49.735	1600	1	3			
' Traveler/Front NB'	' AG'	4659.78	1420.64	4635.97	1355.98	1	20	2		
100	66	3	1165	49.735	1600	1	3			
' EastBerk/Al bany SB'	' AG'	4245.37	1211.3	4285.16	1321.02	1	30	3		
110	59	3	1110	49.735	1600	1	3			
' EastBerk/Al bany WB'	' AG'	4263.21	1180.67	4347.37	1150.96	1	30	3		
110	51	3	1005	49.735	1600	1	3			
' EastBerk/Front NB LL'	' AG'	4434.76	1106.38	4412.8	1051.06	1	20	2		
110	59	3	425	49.735	1600	1	3			

2016NB\_2

2	' EastBerk/Front NB TT'	' AG'	4456.26	1097.23	4434.76	1038.72	1	20	2
110	59 3 1405	49.735	1600	1 3					
2	' EastBerk/Front WB'	' AG'	4492.85	1109.58	4619.56	1065.23	1	30	3
110	51 3 735	49.735	1600	1 3					
2	' Heral d/Al bany SB'	' AG'	4576.31	2268.9	4603.8	2369.51	1	30	3
100	50 3 1605	49.735	1600	1 3					
2	' Heral d/Al bany EB '	' AG'	4524.96	2254.36	4436.02	2276.99	1	30	3
100	50 3 1600	49.735	1600	1 3					
2	' Heral dDr/Al bany EB'	' AG'	4483.3	2089.67	4402.03	2109.47	1	10	1
120	70 3 10	49.735	1600	1 3					
1	' Heral d/Al bany West'	' AG'	4565.21	2240.76	4160.33	2352.68	1600	9.073	
1	54								
1	' Heral d/Al bany North'	' AG'	4565.21	2240.76	4645.33	2496.19	1605	9.073	
1	54								
1	' Heral d/Al bany South'	' AG'	4565.21	2240.76	4493.6	1982.52	3145	9.073	
1	66								
1	' Traveler/Front West'	' AG'	4672.32	1463.66	4536.89	1504.23	1310	9.073	
1	66								
1	' Traveler/Front North'	' AG'	4672.32	1463.66	4707.09	1579.73	1925	9.073	
1	42								
1	' Traveler/Front East'	' AG'	4672.32	1463.66	4779.59	1434.28	1855	9.073	
1	66								
1	' Traveler/Front South'	' AG'	4672.32	1463.66	4625.52	1314.52	1165	9.073	
1	66								
1	' EastBerk/Al bany West'	' AG'	4237.4	1189.12	4008.47	1261.15	1180	9.073	
1	54								
1	' EastBerk/Al bany North'	' AG'	4237.4	1189.12	4312.65	1388.25	1100	9.073	
1	54								
1	' EastBerk/Al bany East'	' AG'	4237.4	1189.12	4363.52	1140.4	1005	9.073	
1	54								
1	' EastBerk/Al bany Sout'	' AG'	4237.4	1189.12	4177.37	998.34	925	9.073	
1	54								
1	' EastBerk/Front West'	' AG'	4451.49	1114.97	4363.52	1140.4	1005	9.073	
1	54								
1	' EastBerk/Front North'	' AG'	4451.49	1114.97	4491.41	1253.11	1170	9.073	
1	54								
1	' EastBerk/Front East'	' AG'	4451.49	1114.97	4657.1	1037.65	1055	9.073	
1	66								
1	' EastBerk/Front South'	' AG'	4451.48	1114.94	4392.14	968.8	1830	9.073	
1	54								
1	' Heral dDr/Al bany West'	' AG'	4521.42	2077.14	4389.06	2111.33	10	9.073	
1	30								

2016NB\_2

1												
'	Heral	dDr/AI	bany	Nort'	'	AG'	4521.42	2073.43	4551.91	2171.52	3205	9.073
1	66											
1												
'	Heral	dDr/AI	bany	Sout'	'	AG'	4521.42	2074.17	4484.98	1955.27	2255	9.073
1	54											
1	0	4	1000	0	'	Y'	10	0	36			

## 2016 Build Condition

2016BD_1_new.inp											
'HERALD SQUARE'	60	175	0	0	45	0.3048	1	0			
'Heral d/Al bany E1'	4648.77	2383.54	6								
'Heral d/Al bany E2'	4626.33	2311.98	6								
'Heral d/Al bany E3'	4603.88	2240.41	6								
'Heral d/Al bany E4'	4589.33	2166.84	6								
'Heral d/Al bany E5'	4572.74	2093.68	6								
'Heral d/Al bany SW1'	4473.79	2072.01	6								
'Heral d/Al bany SW2'	4493.84	2144.29	6								
'Heral d/Al bany SW3'	4513.88	2216.56	6								
'Heral d/Al bany SW4'	4441.59	2236.54	6								
'Heral d/Al bany SW5'	4369.3	2256.53	6								
'Heral d/Al bany NW1'	4396.03	2325.91	6								
'Heral d/Al bany NW2'	4468.32	2305.93	6								
'Heral d/Al bany NW3'	4540.61	2285.95	6								
'Heral d/Al bany NW4'	4563.05	2357.51	6								
'Heral d/Al bany NW5'	4585.5	2429.07	6								
'Heral dDr/Al bany E1'	4597.53	2196.38	6								
'Heral dDr/Al bany E2'	4581.7	2122.49	6								
'Heral dDr/Al bany E3'	4557.42	2051.77	6								
'Heral dDr/Al bany E4'	4537.44	1979.71	6								
'Heral dDr/Al bany E5'	4509.66	1909.53	6								
'Heral dDr/Al bany SW1'	4435.07	1918.7	6								
'Heral dDr/Al bany SW2'	4457.11	1990.6	6								
'Heral dDr/Al bany SW3'	4479.07	2062.26	6								
'Heral dDr/Al bany SW4'	4399.01	2082.94	6								
'Heral dDr/Al bany SW5'	4326.39	2101.69	6								
'Heral dDr/Al bany NW1'	4339.75	2149.88	6								
'Heral dDr/Al bany NW2'	4412.37	2131.13	6								
'Heral dDr/Al bany NW3'	4484.99	2112.37	6								
'Heral dDr/Al bany NW4'	4505.03	2184.65	6								
'Heral dDr/Al bany NW5'	4525.07	2256.92	6								
'Traveler/Front NE1'	4757.61	1640.36	6								
'Traveler/Front NE2'	4736.09	1568.52	6								
'Traveler/Front NE3'	4714.57	1496.67	6								
'Traveler/Front NE4'	4786.91	1476.86	6								
'Traveler/Front NE5'	4859.24	1457.05	6								
'Traveler/Front SE1'	4845.61	1371.61	6								
'Traveler/Front SE2'	4773.27	1391.43	6								
'Traveler/Front SE3'	4700.94	1411.24	6								
'Traveler/Front SE4'	4678.48	1339.68	6								
'Traveler/Front SE5'	4656.03	1268.12	6								
'Traveler/Front SW1'	4573.42	1292.1	6								
'Traveler/Front SW2'	4595.79	1363.41	6								
'Traveler/Front SW3'	4618.25	1434.97	6								
'Traveler/Front SW4'	4546.4	1456.49	6								
'Traveler/Front SW5'	4474.56	1478.01	6								
'2016BD'	30	1	0	'C'							
'Traveler/Front EB LL'	'AG'	4650.22	1476.36	4569.81	1494.79	1	10	1			
100	76	3	435	49.7	1600	1	3				
'Traveler/Front EB TT'	'AG'	4643.58	1454.98	4565.39	1474.15	1	20	2			
100	34	3	1050	49.735	1600	1	3				
'Traveler/Front WB'	'AG'	4688.76	1474.43	4768.98	1451.67	1	20	2			
100	58	3	750	49.735	1600	1	3				
'Traveler/Front NB'	'AG'	4659.78	1420.64	4635.97	1355.98	1	50	5			
100	66	3	1165	49.7	1600	1	3				
'EastBerk/Al bany SB'	'AG'	4245.37	1211.3	4285.16	1321.02	1	30	3			
110	59	3	1135	49.735	1600	1	3				

2016BD_1_new.inp											
'EastBerk/Al bany WB'	'AG'	4263.21	1180.67	4347.37	1150.96	1	20	2			
110	51	3	1035	49.7	1600	1	3				
'EastBerk/Front NB LL'	'AG'	4434.76	1106.38	4412.8	1051.06	1	20	2			
110	59	3	450	49.735	1600	1	3				
'EastBerk/Front NB TT'	'AG'	4456.26	1097.23	4434.76	1038.72	1	20	2			
110	59	3	1085	49.735	1600	1	3				
'EastBerk/Front WB'	'AG'	4492.85	1109.58	4619.56	1065.23	1	30	3			
110	51	3	740	49.735	1600	1	3				
'Heral d/Al bany SB'	'AG'	4576.31	2268.9	4603.8	2369.51	1	30	3			
100	50	3	1675	49.735	1600	1	3				
'Heral d/Al bany EB'	'AG'	4524.96	2254.36	4436.02	2276.99	1	30	3			
100	50	3	1620	49.735	1600	1	3				
'Heral dDr/Al bany EB'	'AG'	4483.3	2089.67	4402.03	2109.47	1	10	1			
120	70	3	5	49.735	1600	1	3				
'Heral d/Al bany West'	'AG'	4565.21	2240.76	4160.33	2352.68	1620	9.073				
1	54										
'Heral d/Al bany North'	'AG'	4565.21	2240.76	4645.33	2496.19	1675	9.073				
1	54										
'Heral d/Al bany South'	'AG'	4565.21	2240.76	4493.6	1982.52	3295	9.073				
1	66										
'Traveler/Front West'	'AG'	4672.32	1463.66	4536.89	1504.23	1485	9.073				
1	66										
'Traveler/Front North'	'AG'	4672.32	1463.66	4707.09	1579.73	2290	9.073				
1	42										
'Traveler/Front East'	'AG'	4672.32	1463.66	4779.59	1434.28	1860	9.073				
1	66										
'Traveler/Front South'	'AG'	4672.32	1463.66	4625.52	1314.52	1165	9.073				
1	66										
'EastBerk/Al bany West'	'AG'	4237.4	1189.12	4008.47	1261.15	1220	9.073				
1	54										
'EastBerk/Al bany North'	'AG'	4237.4	1189.12	4312.65	1388.25	1135	9.073				
1	54										
'EastBerk/Al bany East'	'AG'	4237.4	1189.12	4363.52	1140.4	1035	9.073				
1	54										
'EastBerk/Al bany Sout'	'AG'	4237.4	1189.12	4177.37	998.34	950	9.073				
1	54										
'EastBerk/Front West'	'AG'	4451.49	1114.97	4363.52	1140.4	1035	9.073				
1	54										
'EastBerk/Front North'	'AG'	4451.49	1114.97	4491.41	1253.11	1170	9.073				
1	54										
'EastBerk/Front East'	'AG'	4451.49	1114.97	4657.1	1037.65	1060	9.073				
1	66										

		2016BD_1_new.inp						
' EastBerk/Front South'	' AG'	4451.48	1114.94	4392.14	968.8	1855	9.073	
1 54								
1								
' Heral dDr/Al bany West'	' AG'	4521.42	2077.14	4389.06	2111.33	5	9.073	
1 30								
1								
' Heral dDr/Al bany Nort'	' AG'	4521.42	2073.43	4551.91	2171.52	3295	9.073	
1 66								
1								
' Heral dDr/Al bany Sout'	' AG'	4521.42	2074.17	4484.98	1955.27	2345	9.073	
1 54								
1 0 4 1000 0	' Y'	10	0	36				



2016BD\_2\_new.inp

'HERALD SQUARE'	60	175	0	0	40	0.3048	1	0
'EastBerk/Front NE1'		4539.85		1287.45		6		
'EastBerk/Front NE2'		4519.03		1215.4		6		
'EastBerk/Front NE3'		4498.2		1143.34		6		
'EastBerk/Front NE4'		4568.4		1116.95		6		
'EastBerk/Front NE5'		4638.61		1090.55		6		
'EastBerk/Front SE1'		4610.35		1009.29		6		
'EastBerk/Front SE2'		4540.15		1035.69		6		
'EastBerk/Front SE3'		4469.95		1062.09		6		
'EastBerk/Front SE4'		4441.73		992.6		6		
'EastBerk/Front SE5'		4413.52		923.11		6		
'EastBerk/Front SW1'		4345.84		953.13		6		
'EastBerk/Front SE2'		4374.18		1022.93		6		
'EastBerk/Front SE3'		4401.76		1090.83		6		
'EastBerk/Front SE4'		4339.68		1109.94		6		
'EastBerk/Front SE5'		4269.63		1137		6		
'EastBerk/Front NW1'		4284.7		1210.51		6		
'EastBerk/Front NW2'		4354.73		1183.46		6		
'EastBerk/Front NW3'		4426.22		1160.79		6		
'EastBerk/Front NW4'		4447.04		1232.84		6		
'EastBerk/Front NW5'		4467.86		1304.9		6		
'EastBerk/Al bany NE1'		4338.02		1350.71		6		
'EastBerk/Al bany NE2'		4311.51		1280.56		6		
'EastBerk/Al bany NE3'		4284.99		1210.4		6		
'EastBerk/Al bany NE4'		4354.96		1183.37		6		
'EastBerk/Al bany NE5'		4426.52		1160.7		6		
'EastBerk/Al bany SE1'		4402.37		1090.66		6		
'EastBerk/Al bany SE2'		4330.82		1113.37		6		
'EastBerk/Al bany SE3'		4260.86		1140.39		6		
'EastBerk/Al bany SE4'		4238.35		1068.85		6		
'EastBerk/Al bany SE5'		4215.84		997.31		6		
'EastBerk/Al bany SW1'		4145.98		1021.85		6		
'EastBerk/Al bany SW2'		4168.49		1093.39		6		
'EastBerk/Al bany SW3'		4191		1164.93		6		
'EastBerk/Al bany SW4'		4119.46		1187.44		6		
'EastBerk/Al bany SW5'		4047.92		1209.95		6		
'EastBerk/Al bany NW1'		4072.06		1279.93		6		
'EastBerk/Al bany NW2'		4143.61		1257.42		6		
'EastBerk/Al bany NW3'		4215.15		1234.91		6		
'EastBerk/Al bany NW4'		4241.66		1305.07		6		
'EastBerk/Al bany NW5'		4268.17		1375.22		6		
'2016BD'	30	1	0	'C'				
'Traveler/Front EB LL'	'AG'	4650.22	1476.36	4569.81	1494.79	1	10	1
100	76	3	435	49.7	1600	1	3	
'Traveler/Front EB TT'	'AG'	4643.58	1454.98	4565.39	1474.15	1	20	2
100	34	3	1050	49.735	1600	1	3	
'Traveler/Front WB'	'AG'	4688.76	1474.43	4768.98	1451.67	1	20	2
100	58	3	750	49.735	1600	1	3	
'Traveler/Front NB'	'AG'	4659.78	1420.64	4635.97	1355.98	1	50	5
100	66	3	1165	49.7	1600	1	3	
'EastBerk/Al bany SB'	'AG'	4245.37	1211.3	4285.16	1321.02	1	30	3
110	59	3	1135	49.735	1600	1	3	
'EastBerk/Al bany WB'	'AG'	4263.21	1180.67	4347.37	1150.96	1	20	2
110	51	3	1035	49.7	1600	1	3	
'EastBerk/Front NB LL'	'AG'	4434.76	1106.38	4412.8	1051.06	1	20	2
110	59	3	450	49.735	1600	1	3	

2016BD\_2\_new.inp

'EastBerk/Front NB TT'	'AG'	4456.26	1097.23	4434.76	1038.72	1	20	2
110	59	3	1085	49.735	1600	1	3	
'EastBerk/Front WB'	'AG'	4492.85	1109.58	4619.56	1065.23	1	30	3
110	51	3	740	49.735	1600	1	3	
'Herald/Al bany SB'	'AG'	4576.31	2268.9	4603.8	2369.51	1	30	3
100	50	3	1675	49.735	1600	1	3	
'Herald/Al bany EB'	'AG'	4524.96	2254.36	4436.02	2276.99	1	30	3
100	50	3	1620	49.735	1600	1	3	
'HeraldDr/Al bany EB'	'AG'	4483.3	2089.67	4402.03	2109.47	1	10	1
120	70	3	5	49.735	1600	1	3	
'Herald/Al bany West'	'AG'	4565.21	2240.76	4160.33	2352.68	1620	9.073	
1	54							
'Herald/Al bany North'	'AG'	4565.21	2240.76	4645.33	2496.19	1675	9.073	
1	54							
'Herald/Al bany South'	'AG'	4565.21	2240.76	4493.6	1982.52	3295	9.073	
1	66							
'Traveler/Front West'	'AG'	4672.32	1463.66	4536.89	1504.23	1485	9.073	
1	66							
'Traveler/Front North'	'AG'	4672.32	1463.66	4707.09	1579.73	2290	9.073	
1	42							
'Traveler/Front East'	'AG'	4672.32	1463.66	4779.59	1434.28	1860	9.073	
1	66							
'Traveler/Front South'	'AG'	4672.32	1463.66	4625.52	1314.52	1165	9.073	
1	66							
'EastBerk/Al bany West'	'AG'	4237.4	1189.12	4008.47	1261.15	1220	9.073	
1	54							
'EastBerk/Al bany North'	'AG'	4237.4	1189.12	4312.65	1388.25	1135	9.073	
1	54							
'EastBerk/Al bany East'	'AG'	4237.4	1189.12	4363.52	1140.4	1035	9.073	
1	54							
'EastBerk/Al bany Sout'	'AG'	4237.4	1189.12	4177.37	998.34	950	9.073	
1	54							
'EastBerk/Front West'	'AG'	4451.49	1114.97	4363.52	1140.4	1035	9.073	
1	54							
'EastBerk/Front North'	'AG'	4451.49	1114.97	4491.41	1253.11	1170	9.073	
1	54							
'EastBerk/Front East'	'AG'	4451.49	1114.97	4657.1	1037.65	1060	9.073	
1	66							
'EastBerk/Front South'	'AG'	4451.48	1114.94	4392.14	968.8	1855	9.073	
1	54							
'HeraldDr/Al bany West'	'AG'	4521.42	2077.14	4389.06	2111.33	5	9.073	
1	30							

2016BD\_2\_new. i np

1	'Heral dDr/Al bany Nort'	'AG'	4521.42	2073.43	4551.91	2171.52	3295	9.073
1	66							
1	'Heral dDr/Al bany Sout'	'AG'	4521.42	2074.17	4484.98	1955.27	2345	9.073
1	54							
1	0 4 1000 0	'Y'	10	0	36			

# Microscale Output Files

# 2011 Existing Condition

JOB: HERALD SQUARE

RUN: 2011EX

DATE : 5/12/11  
 TIME : 11:10:53

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM  
 U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH =  
 1000. M AMB = 0.0 PPM

LINK VARIABLES

BRG TYPE	LINK DESCRIPTION	H	W	V/C	LINK COORDINATES (FT)	* LENGTH
(DEG)	(G/MI)	(FT)	(FT)	X1	Y1 X2 Y2	(FT)

283. AG	1. Traveler/Front EB LL*	245. 100.0	1.0 20.0	0.54 3.5	1476.4 4583.4 1491.7 *	69.
284. AG	2. Traveler/Front EB TT*	109. 100.0	1.0 20.0	0.50 4.6	1455.0 4555.1 1476.7 *	91.
106. AG	3. Traveler/Front WB *	187. 100.0	1.0 20.0	0.60 5.7	1474.4 4797.1 1443.7 *	113.
200. AG	4. Traveler/Front NB *	213. 100.0	1.0 20.0	1.09 35.6	1420.6 4417.9 763.7 *	700.
20. AG	5. EastBerk/Al bany SB *	259. 100.0	1.0 30.0	0.49 5.3	1211.3 4281.1 1309.9 *	105.
109. AG	6. EastBerk/Al bany WB *	224. 100.0	1.0 30.0	0.40 4.4	1180.7 4345.0 1151.8 *	87.
202. AG	7. EastBerk/Front NB LL*	173. 100.0	1.0 20.0	0.29 3.2	1106.4 4411.5 1047.9 *	63.
200. AG	8. EastBerk/Front NB TT*	173. 100.0	1.0 20.0	0.96 14.6	1097.2 4357.2 827.8 *	287.
109. AG	9. EastBerk/Front WB *	224. 100.0	1.0 30.0	0.29 3.3	1109.6 4553.4 1088.4 *	64.
15. AG	10. Heral d/Al bany SB *	241. 100.0	1.0 30.0	0.68 6.8	2268.9 4611.6 2398.1 *	134.
284. AG	11. Heral d/Al bany EB *	241. 100.0	1.0 30.0	0.69 6.9	2254.4 4393.5 2287.8 *	136.
284. AG	12. Heral dDr/Al bany EB *	94. 100.0	1.0 10.0	0.02 0.2	2089.7 4479.6 2090.6 *	4.
285. AG	13. Heral d/Al bany West *	1490. 10.6	1.0 54.0		2240.8 4160.3 2352.7 *	420.
17. AG	14. Heral d/Al bany North *	1470. 10.6	1.0 54.0		2240.8 4645.3 2496.2 *	268.
195. AG	15. Heral d/Al bany South *	2960. 10.6	1.0 66.0		2240.8 4493.6 1982.5 *	268.
287. AG	16. Traveler/Front West *	1310. 10.6	1.0 66.0		1463.7 4536.9 1504.2 *	141.
17. AG	17. Traveler/Front North*	1785. 10.6	1.0 42.0		1463.7 4707.1 1579.7 *	121.
105. AG	18. Traveler/Front East *	1745. 10.6	1.0 66.0		1463.7 4779.6 1434.3 *	111.
	19. Traveler/Front South*				1463.7 4625.5 1314.5 *	156.

197. AG	20. EastBerk/Al bany West*	1065. 10.6	1.0 66.0		4237.4 1189.1 4008.5 1261.2 *	240.
287. AG	21. EastBerk/Al bany Nort*	1065. 10.6	1.0 54.0		4237.4 1189.1 4312.7 1388.3 *	213.
21. AG	22. EastBerk/Al bany East*	975. 10.6	1.0 54.0		4237.4 1189.1 4363.5 1140.4 *	135.
111. AG	23. EastBerk/Al bany Sout*	935. 10.6	1.0 54.0		4237.4 1189.1 4177.4 998.3 *	200.
197. AG	24. EastBerk/Front West *	845. 10.6	1.0 54.0		4451.5 1115.0 4363.5 1140.4 *	92.
286. AG	25. EastBerk/Front North*	935. 10.6	1.0 54.0		4451.5 1115.0 4491.4 1253.1 *	144.
16. AG	26. EastBerk/Front East *	1070. 10.6	1.0 54.0		4451.5 1115.0 4657.1 1037.7 *	220.
111. AG	27. EastBerk/Front South*	985. 10.6	1.0 66.0		4451.5 1114.9 4392.1 968.8 *	158.
202. AG	28. Heral dDr/Al bany West*	1385. 10.6	1.0 54.0		4521.4 2077.1 4389.1 2111.3 *	137.
284. AG	29. Heral dDr/Al bany Nort*	10. 10.6	1.0 30.0		4521.4 2073.4 4551.9 2171.5 *	103.
17. AG	30. Heral dDr/Al bany Sout*	2960. 10.6	1.0 66.0		4521.4 2074.2 4485.0 1955.3 *	124.

♀

JOB: HERALD SQUARE

RUN: 2011EX

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ADDITIONAL QUEUE LINK PARAMETERS

IDLE	LINK DESCRIPTION	* CYCLE	RED	CLEARANCE	APPROACH	SATURATION
EM FAC	SIGNAL ARRIVAL	* LENGTH	TIME	LOST TIME	VOL	FLOW RATE
(gm/hr)	TYPE RATE	(SEC)	(SEC)	(SEC)	(VPH)	(VPH)
60.02	1. Traveler/Front EB LL*	100	76	3.0	330	1600
60.02	2. Traveler/Front EB TT*	100	34	3.0	980	1600
60.02	3. Traveler/Front WB *	100	58	3.0	710	1600
60.02	4. Traveler/Front NB *	100	66	3.0	1010	1600
60.02	5. EastBerk/Al bany SB *	110	59	3.0	975	1600
60.02	6. EastBerk/Al bany WB *	110	51	3.0	935	1600
60.02	7. EastBerk/Front NB LL*	110	59	3.0	390	1600
60.02	8. EastBerk/Front NB TT*	110	59	3.0	1285	1600
60.02	9. EastBerk/Front WB *	110	51	3.0	690	1600
60.02	10. Heral d/Al bany SB *	100	50	3.0	1470	1600
60.02	11. Heral d/Al bany EB *	100	50	3.0	1490	1600

2011EX\_1  
 60.02 1 3  
 12. Heral dDr/Al bany EB \* 120 70 3.0 10 1600  
 60.02 1 3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. Heral d/Al bany E1	4648.8	2383.5	6.0
2. Heral d/Al bany E2	4626.3	2312.0	6.0
3. Heral d/Al bany E3	4603.9	2240.4	6.0
4. Heral d/Al bany E4	4589.3	2166.8	6.0
5. Heral d/Al bany E5	4572.7	2093.7	6.0
6. Heral d/Al bany SW1	4473.8	2072.0	6.0
7. Heral d/Al bany SW2	4493.8	2144.3	6.0
8. Heral d/Al bany SW3	4513.9	2216.6	6.0
9. Heral d/Al bany SW4	4441.6	2236.5	6.0
10. Heral d/Al bany SW5	4369.3	2256.5	6.0
11. Heral d/Al bany NW1	4396.0	2325.9	6.0
12. Heral d/Al bany NW2	4468.3	2305.9	6.0
13. Heral d/Al bany NW3	4540.6	2286.0	6.0
14. Heral d/Al bany NW4	4563.0	2357.5	6.0
15. Heral d/Al bany NW5	4585.5	2429.1	6.0
16. Heral dDr/Al bany E1	4597.5	2196.4	6.0
17. Heral dDr/Al bany E2	4581.7	2122.5	6.0
18. Heral dDr/Al bany E3	4557.4	2051.8	6.0
19. Heral dDr/Al bany E4	4537.4	1979.7	6.0
20. Heral dDr/Al bany E5	4509.7	1909.5	6.0
21. Heral dDr/Al bany SW1	4435.1	1918.7	6.0
22. Heral dDr/Al bany SW2	4457.1	1990.6	6.0
23. Heral dDr/Al bany SW3	4479.1	2062.3	6.0
24. Heral dDr/Al bany SW4	4399.0	2082.9	6.0
25. Heral dDr/Al bany SW5	4326.4	2101.7	6.0
26. Heral dDr/Al bany NW1	4339.8	2149.9	6.0
27. Heral dDr/Al bany NW2	4412.4	2131.1	6.0
28. Heral dDr/Al bany NW3	4485.0	2112.4	6.0
29. Heral dDr/Al bany NW4	4505.0	2184.6	6.0
30. Heral dDr/Al bany NW5	4525.1	2256.9	6.0
31. Travel er/Front NE1	4757.6	1640.4	6.0
32. Travel er/Front NE2	4736.1	1568.5	6.0
33. Travel er/Front NE3	4714.6	1496.7	6.0

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JOB: HERALD SQUARE

RUN: 2011EX

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RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
34. Travel er/Front NE4	4786.9	1476.9	6.0
35. Travel er/Front NE5	4859.2	1457.1	6.0
36. Travel er/Front SE1	4845.6	1371.6	6.0
37. Travel er/Front SE2	4773.3	1391.4	6.0
38. Travel er/Front SE3	4700.9	1411.2	6.0
39. Travel er/Front SE4	4678.5	1339.7	6.0
40. Travel er/Front SE5	4656.0	1268.1	6.0

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2011EX\_1  
 41. Travel er/Front SW1 \* 4573.4 1292.1 6.0 \*  
 42. Travel er/Front SW2 \* 4595.8 1363.4 6.0 \*  
 43. Travel er/Front SW3 \* 4618.2 1435.0 6.0 \*  
 44. Travel er/Front SW4 \* 4546.4 1456.5 6.0 \*  
 45. Travel er/Front SW5 \* 4474.6 1478.0 6.0 \*

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JOB: HERALD SQUARE

RUN: 2011EX

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0. -360.

WIND \* CONCENTRATION

(DEGR) \* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12  
 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20

0.	0.0	0.0	0.4	0.7	1.1	1.1	1.7	0.4	0.5	0.8	0.9	0.4	0.0	0.0
10.	*	0.3	0.5	0.7	0.8	1.1	0.8	0.8	0.8	0.9	0.9	0.4	0.0	0.0
20.	*	0.1	0.2	0.3	0.4	0.5	1.4	1.5	1.1	1.2	0.9	0.5	0.0	0.0
30.	*	0.0	0.1	0.1	0.1	0.1	0.8	0.9	1.0	1.3	1.4	1.1	0.6	0.0
40.	*	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.4	1.4	1.4	1.3	0.7	0.0
50.	*	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.4	1.4	1.5	1.0	0.1
60.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.2	1.4	1.2	0.1
70.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.2	1.5	1.3	0.2
80.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.0	1.1	1.3	0.3
90.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.9	0.9	1.3	0.4
100.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.9	0.7	1.0	0.5
110.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.8	0.6	0.7	0.9
120.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.9	0.6	0.6	1.2
130.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.0	0.7	0.5	1.5
140.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.3	0.7	0.6	1.6
150.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	0.8	0.4	1.7
160.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.7	0.7	0.2	1.4
170.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.8	1.9	0.6	0.2
180.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.8	1.9	0.6	0.2

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2011EX\_1

180.	*	0.1	0.3	0.4	0.3	0.1	1.0	1.6	1.8	0.3	0.0	0.7	1.5
1.9	1.7	1.4	0.3	0.1	0.1	0.1	0.1						
190.	*	0.5	0.6	0.8	0.8	0.3	0.5	1.1	1.2	0.0	0.0	0.6	1.2
1.8	1.5	1.4	0.7	0.5	0.3	0.1	0.0						
200.	*	1.1	1.0	1.4	1.3	0.6	0.2	0.4	0.6	0.0	0.0	0.5	1.0
1.4	1.0	1.1	1.3	0.8	0.5	0.0	0.0						
210.	*	1.5	1.4	1.6	1.9	1.1	0.0	0.1	0.1	0.0	0.0	0.4	1.0
1.0	0.5	0.4	1.8	1.4	0.9	0.1	0.0						
220.	*	1.5	1.3	1.6	2.0	1.5	0.0	0.0	0.0	0.0	0.0	0.4	1.0
1.0	0.5	0.4	1.8	1.7	1.2	0.1	0.0						
230.	*	1.5	1.5	1.2	2.0	1.6	0.0	0.0	0.0	0.0	0.0	0.5	1.1
1.0	0.5	0.3	1.7	1.8	1.4	0.3	0.0						
240.	*	1.5	1.5	1.1	1.8	1.7	0.0	0.0	0.0	0.0	0.0	0.5	1.1
1.1	0.4	0.3	1.4	1.8	1.4	0.4	0.0						
250.	*	1.4	1.5	1.0	1.7	1.6	0.0	0.0	0.0	0.0	0.0	0.5	1.0
1.1	0.3	0.1	1.2	1.7	1.4	0.6	0.0						
260.	*	1.2	1.5	1.1	1.4	1.6	0.0	0.0	0.0	0.0	0.0	0.6	0.9
1.2	0.3	0.1	1.0	1.6	1.4	0.7	0.0						
270.	*	1.0	1.5	1.4	1.3	1.6	0.0	0.0	0.1	0.1	0.1	0.5	0.8
1.1	0.1	0.0	1.0	1.5	1.3	0.9	0.0						
280.	*	0.8	1.2	1.6	1.3	1.6	0.0	0.0	0.3	0.2	0.2	0.4	0.6
0.8	0.1	0.0	1.2	1.6	1.4	1.1	0.0						
290.	*	0.7	1.1	1.4	1.3	1.6	0.0	0.1	0.7	0.4	0.4	0.2	0.2
0.4	0.0	0.0	1.5	1.7	1.4	1.3	0.0						
300.	*	0.6	1.0	1.1	1.4	1.7	0.0	0.1	1.0	0.7	0.5	0.1	0.1
0.1	0.0	0.0	1.6	1.8	1.6	1.2	0.0						
310.	*	0.5	1.0	0.9	1.5	1.9	0.1	0.2	1.1	0.9	0.6	0.0	0.0
0.0	0.0	0.0	1.5	1.9	1.6	1.4	0.1						
320.	*	0.4	1.0	0.8	1.3	1.9	0.1	0.3	1.1	0.9	0.5	0.0	0.0
0.0	0.0	0.0	1.1	1.8	2.0	1.6	0.4						
330.	*	0.5	1.1	1.0	1.1	2.1	0.3	0.4	1.1	1.0	0.5	0.0	0.0
0.0	0.0	0.0	1.1	1.8	2.1	1.8	0.6						
340.	*	0.5	1.0	1.1	1.2	2.0	0.3	0.5	1.1	1.1	0.5	0.0	0.0
0.0	0.0	0.0	0.9	1.7	2.1	1.9	0.9						
350.	*	0.5	0.9	1.2	1.1	1.8	0.4	0.5	0.9	1.0	0.4	0.0	0.0
0.0	0.0	0.0	0.9	1.4	2.2	2.0	1.3						
360.	*	0.4	0.7	1.1	1.1	1.7	0.4	0.5	0.8	0.9	0.4	0.0	0.0
0.0	0.0	0.0	1.0	1.2	1.9	2.1	1.7						
-----*													
MAX	*	1.5	1.5	1.6	2.0	2.1	1.9	1.8	1.9	1.5	1.3	1.7	1.9
1.9	1.7	1.4	1.8	1.9	2.2	2.1	1.7						
DEGR.	*	220	230	210	220	330	40	160	170	70	70	150	160
180	180	190	210	310	350	0	0						

♀

JOB: HERALD SQUARE

RUN: 2011EX

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0. -360.

WIND \* CONCENTRATION  
ANGLE \* (PPM)

2011EX\_1

(DEGR)\* REC21 REC22 REC23 REC24 REC25 REC26 REC27 REC28 REC29 REC30 REC31 REC32  
REC33 REC34 REC35 REC36 REC37 REC38 REC39 REC40

-----*														
0.	*	0.3	0.5	0.6	0.2	0.1	0.2	0.4	0.5	0.6	0.5	0.0	0.0	
0.4	0.0	0.0	0.0	0.6	1.1	1.0	1.1							
10.	*	0.8	1.2	1.1	0.2	0.1	0.2	0.4	0.8	0.8	0.7	0.0	0.0	
0.2	0.0	0.0	0.0	0.4	1.1	0.7	0.6							
20.	*	1.4	1.9	1.9	0.4	0.2	0.3	0.5	1.2	1.2	1.0	0.0	0.0	
0.1	0.0	0.0	0.0	0.3	0.9	0.5	0.5							
30.	*	1.4	2.2	2.1	0.5	0.2	0.4	0.6	1.6	1.4	0.9	0.0	0.0	
0.0	0.0	0.0	0.0	0.2	0.8	0.3	0.2							
40.	*	1.0	2.1	2.2	0.7	0.5	0.6	0.7	1.7	1.3	1.2	0.0	0.0	
0.0	0.0	0.0	0.0	0.0	0.8	0.3	0.2							
50.	*	0.7	1.9	2.0	0.7	0.5	0.6	0.6	1.7	1.1	1.3	0.0	0.0	
0.0	0.0	0.0	0.0	0.0	0.8	0.2	0.0							
60.	*	0.4	1.7	1.9	0.6	0.7	0.5	0.7	1.6	1.1	1.2	0.0	0.0	
0.0	0.0	0.0	0.0	0.0	0.6	0.1	0.0							
70.	*	0.2	1.4	1.8	0.7	0.4	0.6	0.6	1.7	0.8	1.0	0.0	0.0	
0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0							
80.	*	0.1	1.3	1.7	0.8	0.5	0.4	0.7	1.6	0.9	1.0	0.0	0.0	
0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0							
90.	*	0.0	1.2	1.5	0.8	0.6	0.5	0.8	1.6	1.0	0.9	0.0	0.0	
0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0							
100.	*	0.0	1.1	1.6	0.8	0.5	0.5	0.8	1.6	1.1	0.9	0.0	0.0	
0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0							
110.	*	0.0	0.9	1.5	0.7	0.6	0.6	0.8	1.6	1.3	1.0	0.0	0.0	
0.4	0.0	0.0	0.0	0.0	0.1	0.0	0.0							
120.	*	0.0	0.7	1.4	0.7	0.4	0.5	0.8	1.6	1.4	1.1	0.0	0.0	
0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
130.	*	0.0	0.5	1.4	0.6	0.2	0.4	0.7	1.5	1.5	1.2	0.0	0.0	
0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
140.	*	0.0	0.5	1.5	0.4	0.1	0.2	0.6	1.6	1.7	1.5	0.0	0.0	
0.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0							
150.	*	0.0	0.4	1.6	0.2	0.0	0.2	0.5	1.6	1.7	1.6	0.0	0.2	
1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0							
160.	*	0.1	0.3	1.6	0.2	0.1	0.1	0.3	1.6	1.9	1.8	0.0	0.2	
1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0							
170.	*	0.1	0.2	1.5	0.1	0.1	0.1	0.3	1.6	2.0	2.2	0.2	0.4	
0.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0							
180.	*	0.1	0.2	1.3	0.1	0.0	0.0	0.1	1.3	1.8	2.2	0.2	0.4	
1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.1							
190.	*	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.8	1.2	1.9	0.5	0.8	
1.2	0.7	0.0	0.0	0.0	0.2	0.2	0.2							
200.	*	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.3	0.5	1.4	0.7	1.0	
1.6	0.8	0.0	0.0	0.1	0.5	0.4	0.3							
210.	*	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.1	0.9	0.9	1.2	
1.8	1.0	0.1	0.1	0.3	0.9	0.9	0.7							
220.	*	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.6	1.1	
1.7	1.2	0.2	0.1	0.3	1.0	1.0	0.9							
230.	*	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.4	1.0	
1.4	1.2	0.2	0.3	0.3	0.9	0.7	1.0							
240.	*	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.2	1.0	
1.2	1.3	0.5	0.2	0.3	0.8	0.7	0.6							
250.	*	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.8	
1.5	1.4	0.6	0.2	0.3	0.7	0.6	0.5							
260.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.6	
1.3	1.4	0.8	0.3	0.3	0.7	0.7	0.5							
270.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.4	
1.2	1.4	1.0	0.2	0.4	0.6	0.7	0.5							
280.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.6	0.0	0.4	
0.8	0.9	0.7	0.4	0.5	0.7	0.7	0.4							

2011EX_1														
290.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.5	0.0	0.3
0.7	0.6	0.4	0.7	0.7	0.9	0.7	0.4							
300.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	2.0	0.0	0.2
0.5	0.2	0.1	0.8	1.1	1.1	0.7	0.4							
310.	*	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.5	1.4	0.0	0.1	
0.5	0.2	0.1	0.6	1.0	1.2	0.8	0.4							
320.	*	0.0	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.6	1.0	0.2	0.1	
0.6	0.1	0.0	0.5	1.0	1.1	1.0	0.5							
330.	*	0.1	0.2	0.4	0.1	0.1	0.2	0.2	0.3	0.7	0.7	0.4	0.1	
0.7	0.2	0.1	0.4	1.1	1.0	1.0	0.7							
340.	*	0.1	0.2	0.4	0.2	0.1	0.2	0.2	0.4	0.7	0.6	0.2	0.1	
0.7	0.1	0.1	0.2	0.9	1.3	1.2	0.8							
350.	*	0.1	0.3	0.4	0.2	0.1	0.2	0.3	0.4	0.7	0.6	0.1	0.1	
0.6	0.1	0.0	0.0	0.9	1.3	1.0	1.1							
360.	*	0.3	0.5	0.6	0.2	0.1	0.2	0.4	0.5	0.6	0.5	0.0	0.0	
0.4	0.0	0.0	0.0	0.6	1.1	1.0	1.1							

MAX	*	1.4	2.2	2.2	0.8	0.7	0.6	0.8	1.7	2.0	2.6	0.9	1.2	
1.8	1.4	1.0	0.8	1.1	1.3	1.2	1.1							
DEGR.	*	20	30	40	80	60	40	110	40	170	280	210	210	
210	250	270	300	300	340	340	0							

♀

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JOB: HERALD SQUARE

RUN: 2011EX

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM)	REC41	REC42	REC43	REC44	REC45
0.	*	0.4	0.5	1.1	0.4	0.1
10.	*	0.5	0.7	1.2	0.5	0.1
20.	*	0.6	0.6	1.3	0.5	0.0
30.	*	0.9	0.9	1.3	0.6	0.0
40.	*	1.0	1.0	1.3	0.9	0.0
50.	*	0.9	1.0	1.2	1.1	0.1
60.	*	0.9	1.0	1.1	1.2	0.2
70.	*	0.6	0.9	1.1	1.5	0.4
80.	*	0.5	0.8	1.1	1.5	0.7
90.	*	0.4	0.7	0.9	1.3	0.9
100.	*	0.4	0.7	0.8	1.0	0.8
110.	*	0.4	0.7	0.6	0.6	0.5
120.	*	0.4	0.7	0.6	0.4	0.2
130.	*	0.4	0.7	0.6	0.4	0.2
140.	*	0.4	0.6	0.7	0.3	0.3
150.	*	0.5	0.6	0.7	0.3	0.2
160.	*	0.5	0.6	0.7	0.3	0.2
170.	*	0.6	0.6	0.8	0.2	0.4
180.	*	0.8	0.7	0.8	0.3	0.3
190.	*	0.7	0.7	0.8	0.4	0.4

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2011EX_1						
200.	*	0.9	0.8	0.6	0.4	0.0
210.	*	0.6	0.4	0.4	0.0	0.2
220.	*	0.4	0.1	0.1	0.0	0.2
230.	*	0.2	0.1	0.0	0.2	0.3
240.	*	0.2	0.1	0.1	0.2	0.1
250.	*	0.3	0.2	0.2	0.1	0.0
260.	*	0.3	0.2	0.0	0.0	0.0
270.	*	0.2	0.0	0.0	0.0	0.0
280.	*	0.1	0.0	0.1	0.0	0.0
290.	*	0.0	0.0	0.2	0.0	0.0
300.	*	0.0	0.0	0.4	0.0	0.0
310.	*	0.0	0.0	0.6	0.1	0.0
320.	*	0.0	0.0	0.9	0.1	0.0
330.	*	0.0	0.1	1.0	0.1	0.0
340.	*	0.0	0.2	1.1	0.2	0.0
350.	*	0.2	0.5	1.2	0.3	0.1
360.	*	0.4	0.5	1.1	0.4	0.1
MAX	*	1.0	1.0	1.3	1.5	0.9
DEGR.	*	40	40	20	70	90

THE HIGHEST CONCENTRATION OF 2.60 PPM OCCURRED AT RECEPTOR REC30.

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JOB: HERALD SQUARE

RUN: 2011EX

DATE : 5/12/11  
 TIME : 11:11: 3

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM  
 U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH =  
 1000. M AMB = 0.0 PPM

LINK VARIABLES

BRG TYPE	LINK DESCRIPTION	H	W	V/C	LINK COORDINATES (FT)	* LENGTH
(DEG)	(G/MI)	(FT)	(FT)	X1	Y1 X2 Y2	(FT)

283. AG	1. Traveler/Front EB LL*	245. 100.0	1.0 20.0	0.54 3.5	1476.4 4583.4 1491.7 *	69.
284. AG	2. Traveler/Front EB TT*	109. 100.0	1.0 20.0	0.50 4.6	1455.0 4555.1 1476.7 *	91.
106. AG	3. Traveler/Front WB *	187. 100.0	1.0 20.0	0.60 5.7	1474.4 4797.1 1443.7 *	113.
200. AG	4. Traveler/Front NB *	213. 100.0	1.0 20.0	1.09 35.6	1420.6 4417.9 763.7 *	700.
20. AG	5. EastBerk/Al bany SB *	259. 100.0	1.0 30.0	0.49 5.3	1211.3 4281.1 1309.9 *	105.
109. AG	6. EastBerk/Al bany WB *	224. 100.0	1.0 30.0	0.40 4.4	1180.7 4345.0 1151.8 *	87.
202. AG	7. EastBerk/Front NB LL*	173. 100.0	1.0 20.0	0.29 3.2	1106.4 4411.5 1047.9 *	63.
200. AG	8. EastBerk/Front NB TT*	173. 100.0	1.0 20.0	0.96 14.6	1097.2 4357.2 827.8 *	287.
109. AG	9. EastBerk/Front WB *	224. 100.0	1.0 30.0	0.29 3.3	1109.6 4553.4 1088.4 *	64.
15. AG	10. Heral d/Al bany SB *	241. 100.0	1.0 30.0	0.68 6.8	2268.9 4611.6 2398.1 *	134.
284. AG	11. Heral d/Al bany EB *	241. 100.0	1.0 30.0	0.69 6.9	2254.4 4393.5 2287.8 *	136.
284. AG	12. Heral dDr/Al bany EB *	94. 100.0	1.0 10.0	0.02 0.2	2089.7 4479.6 2090.6 *	4.
285. AG	13. Heral d/Al bany West *	1490. 10.6	1.0 54.0		2240.8 4160.3 2352.7 *	420.
17. AG	14. Heral d/Al bany North *	1470. 10.6	1.0 54.0		2240.8 4645.3 2496.2 *	268.
195. AG	15. Heral d/Al bany South *	2960. 10.6	1.0 66.0		2240.8 4493.6 1982.5 *	268.
287. AG	16. Traveler/Front West *	1310. 10.6	1.0 66.0		1463.7 4536.9 1504.2 *	141.
17. AG	17. Traveler/Front North*	1785. 10.6	1.0 42.0		1463.7 4707.1 1579.7 *	121.
105. AG	18. Traveler/Front East *	1745. 10.6	1.0 66.0		1463.7 4779.6 1434.3 *	111.
	19. Traveler/Front South*				1463.7 4625.5 1314.5 *	156.

197. AG	20. EastBerk/Al bany West*	1065. 10.6	1.0 66.0		4237.4 1189.1 4008.5 1261.2 *	240.
287. AG	21. EastBerk/Al bany Nort*	1065. 10.6	1.0 54.0		4237.4 1189.1 4312.7 1388.3 *	213.
21. AG	22. EastBerk/Al bany East*	975. 10.6	1.0 54.0		4237.4 1189.1 4363.5 1140.4 *	135.
111. AG	23. EastBerk/Al bany Sout*	935. 10.6	1.0 54.0		4237.4 1189.1 4177.4 998.3 *	200.
197. AG	24. EastBerk/Front West *	845. 10.6	1.0 54.0		4451.5 1115.0 4363.5 1140.4 *	92.
286. AG	25. EastBerk/Front North*	935. 10.6	1.0 54.0		4451.5 1115.0 4491.4 1253.1 *	144.
16. AG	26. EastBerk/Front East *	1070. 10.6	1.0 54.0		4451.5 1115.0 4657.1 1037.7 *	220.
111. AG	27. EastBerk/Front South*	985. 10.6	1.0 66.0		4451.5 1114.9 4392.1 968.8 *	158.
202. AG	28. Heral dDr/Al bany West*	1385. 10.6	1.0 54.0		4521.4 2077.1 4389.1 2111.3 *	137.
284. AG	29. Heral dDr/Al bany Nort*	10. 10.6	1.0 30.0		4521.4 2073.4 4551.9 2171.5 *	103.
197. AG	30. Heral dDr/Al bany Sout*	2960. 10.6	1.0 66.0		4521.4 2074.2 4485.0 1955.3 *	124.

JOB: HERALD SQUARE

RUN: 2011EX

DATE : 5/12/11  
 TIME : 11:11: 3

ADDITIONAL QUEUE LINK PARAMETERS

IDLE	LINK DESCRIPTION	* CYCLE	RED	CLEARANCE	APPROACH	SATURATION
EM FAC	SIGNAL ARRIVAL	* LENGTH	TIME	LOST TIME	VOL	FLOW RATE
(gm/hr)	TYPE RATE	(SEC)	(SEC)	(SEC)	(VPH)	(VPH)
60.02	1. Traveler/Front EB LL*	100	76	3.0	330	1600
60.02	2. Traveler/Front EB TT*	100	34	3.0	980	1600
60.02	3. Traveler/Front WB *	100	58	3.0	710	1600
60.02	4. Traveler/Front NB *	100	66	3.0	1010	1600
60.02	5. EastBerk/Al bany SB *	110	59	3.0	975	1600
60.02	6. EastBerk/Al bany WB *	110	51	3.0	935	1600
60.02	7. EastBerk/Front NB LL*	110	59	3.0	390	1600
60.02	8. EastBerk/Front NB TT*	110	59	3.0	1285	1600
60.02	9. EastBerk/Front WB *	110	51	3.0	690	1600
60.02	10. Heral d/Al bany SB *	100	50	3.0	1470	1600
60.02	11. Heral d/Al bany EB *	100	50	3.0	1490	1600

2011EX\_2  
 60.02 1 3  
 12. Heral dDr/Al bany EB \* 120 70 3.0 10 1600  
 60.02 1 3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. EastBerk/Front NE1	4539.9	1287.5	6.0
2. EastBerk/Front NE2	4519.0	1215.4	6.0
3. EastBerk/Front NE3	4498.2	1143.3	6.0
4. EastBerk/Front NE4	4568.4	1116.9	6.0
5. EastBerk/Front NE5	4638.6	1090.6	6.0
6. EastBerk/Front SE1	4610.4	1009.3	6.0
7. EastBerk/Front SE2	4540.1	1035.7	6.0
8. EastBerk/Front SE3	4470.0	1062.1	6.0
9. EastBerk/Front SE4	4441.7	992.6	6.0
10. EastBerk/Front SE5	4413.5	923.1	6.0
11. EastBerk/Front SW1	4345.8	953.1	6.0
12. EastBerk/Front SE2	4374.2	1022.9	6.0
13. EastBerk/Front SE3	4401.8	1090.8	6.0
14. EastBerk/Front SE4	4339.7	1109.9	6.0
15. EastBerk/Front SE5	4269.6	1137.0	6.0
16. EastBerk/Front NW1	4284.7	1210.5	6.0
17. EastBerk/Front NW2	4354.7	1183.5	6.0
18. EastBerk/Front NW3	4426.2	1160.8	6.0
19. EastBerk/Front NW4	4447.0	1232.8	6.0
20. EastBerk/Front NW5	4467.9	1304.9	6.0
21. EastBerk/Al bany NE1	4338.0	1350.7	6.0
22. EastBerk/Al bany NE2	4311.5	1280.6	6.0
23. EastBerk/Al bany NE3	4285.0	1210.4	6.0
24. EastBerk/Al bany NE4	4355.0	1183.4	6.0
25. EastBerk/Al bany NE5	4426.5	1160.7	6.0
26. EastBerk/Al bany SE1	4402.4	1090.7	6.0
27. EastBerk/Al bany SE2	4330.8	1113.4	6.0
28. EastBerk/Al bany SE3	4260.9	1140.4	6.0
29. EastBerk/Al bany SE4	4238.4	1068.8	6.0
30. EastBerk/Al bany SE5	4215.8	997.3	6.0
31. EastBerk/Al bany SW1	4146.0	1021.8	6.0
32. EastBerk/Al bany SW2	4168.5	1093.4	6.0
33. EastBerk/Al bany SW3	4191.0	1164.9	6.0

JOB: HERALD SQUARE PAGE 3 RUN: 2011EX

DATE : 5/12/11  
 TIME : 11:11: 3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
34. EastBerk/Al bany SW4	4119.5	1187.4	6.0
35. EastBerk/Al bany SW5	4047.9	1209.9	6.0
36. EastBerk/Al bany NW1	4072.1	1279.9	6.0
37. EastBerk/Al bany NW2	4143.6	1257.4	6.0
38. EastBerk/Al bany NW3	4215.1	1234.9	6.0
39. EastBerk/Al bany NW4	4241.7	1305.1	6.0
40. EastBerk/Al bany NW5	4268.2	1375.2	6.0

2011EX\_2  
 ♀ JOB: HERALD SQUARE PAGE 4 RUN: 2011EX

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND \* CONCENTRATION  
 ANGLE \* (PPM)  
 (DEGR)\* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12  
 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20

0.	*	0.2	0.2	0.4	1.1	0.3	0.5	1.4	0.8	1.3	1.3	0.2	0.1
0.3	0.7	1.1	0.7	0.0	0.1	0.1	0.1						
10.	*	0.2	0.1	0.3	1.0	0.3	0.4	1.3	0.8	1.0	1.1	0.2	0.1
0.5	0.5	1.2	0.6	0.1	0.2	0.1	0.1						
20.	*	0.4	0.5	0.4	0.9	0.1	0.4	1.1	0.8	0.9	1.0	0.5	0.4
0.5	0.3	1.0	0.4	0.0	0.1	0.1	0.1						
30.	*	0.6	0.6	0.6	0.5	0.0	0.3	0.7	1.1	0.7	0.8	0.8	0.8
0.7	0.3	0.8	0.1	0.0	0.3	0.2	0.2						
40.	*	0.8	0.7	0.6	0.1	0.0	0.2	0.4	1.0	0.6	0.6	1.2	1.3
0.9	0.4	0.8	0.0	0.1	0.5	0.5	0.3						
50.	*	0.7	0.5	0.4	0.0	0.0	0.2	0.3	1.1	0.6	0.5	1.1	1.4
1.0	0.5	0.9	0.0	0.2	0.6	0.4	0.6						
60.	*	0.7	0.4	0.4	0.0	0.0	0.2	0.3	1.0	0.6	0.5	1.0	1.4
1.2	0.6	1.0	0.1	0.3	0.5	0.6	0.4						
70.	*	0.4	0.3	0.4	0.0	0.0	0.1	0.3	1.0	0.5	0.3	0.8	1.2
1.5	0.6	0.9	0.1	0.2	0.5	0.5	0.4						
80.	*	0.4	0.3	0.3	0.0	0.0	0.1	0.3	0.8	0.4	0.3	0.6	1.1
1.6	0.8	0.9	0.2	0.2	0.5	0.4	0.3						
90.	*	0.3	0.3	0.3	0.0	0.0	0.1	0.2	0.7	0.3	0.3	0.6	1.0
1.8	1.0	0.9	0.2	0.3	0.5	0.5	0.3						
100.	*	0.3	0.3	0.4	0.0	0.0	0.0	0.2	0.6	0.3	0.3	0.5	0.9
1.6	1.0	1.0	0.2	0.5	0.7	0.5	0.2						
110.	*	0.3	0.3	0.5	0.1	0.0	0.0	0.1	0.5	0.3	0.3	0.5	0.9
1.6	0.9	0.7	0.7	0.5	0.9	0.5	0.2						
120.	*	0.3	0.3	0.8	0.2	0.0	0.0	0.0	0.4	0.3	0.3	0.5	0.9
1.4	0.8	0.4	1.0	0.8	1.1	0.5	0.2						
130.	*	0.3	0.3	0.9	0.2	0.1	0.0	0.0	0.3	0.3	0.3	0.5	0.9
1.3	0.7	0.3	1.1	0.9	1.2	0.7	0.2						
140.	*	0.3	0.4	1.0	0.3	0.1	0.0	0.0	0.3	0.3	0.3	0.5	0.9
1.3	0.7	0.3	1.2	0.9	1.0	0.7	0.3						
150.	*	0.3	0.4	1.2	0.3	0.1	0.0	0.0	0.4	0.3	0.3	0.5	0.8
1.3	0.5	0.3	1.1	0.9	1.2	0.8	0.4						
160.	*	0.4	0.6	1.2	0.3	0.2	0.0	0.0	0.4	0.4	0.3	0.4	0.8
1.3	0.4	0.2	1.2	0.9	1.3	0.9	0.6						
170.	*	0.6	0.7	1.2	0.3	0.2	0.0	0.0	0.4	0.4	0.3	0.2	0.6
1.3	0.3	0.0	1.0	0.7	1.4	0.9	0.6						
180.	*	0.6	0.7	1.1	0.4	0.2	0.0	0.1	0.4	0.3	0.2	0.1	0.6
0.9	0.1	0.0	0.8	0.6	1.4	1.2	0.8						
190.	*	0.8	0.8	1.2	0.7	0.3	0.0	0.2	0.4	0.3	0.2	0.1	0.3
0.6	0.0	0.0	0.9	0.4	1.2	0.9	0.7						
200.	*	0.8	0.9	1.1	1.1	0.4	0.0	0.5	0.5	0.4	0.2	0.0	0.1

2011EX\_2

Table with 14 columns and 36 rows of numerical data, likely representing concentration or angle values across different receptors.

Summary table for 2011EX\_2 with 14 columns. Includes rows for MAX, DEGR, and 90-degree values.

PAGE 5

JOB: HERALD SQUARE

RUN: 2011EX

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0. -360.

Table with 14 columns: WIND ANGLE (DEGR) \* CONCENTRATION (PPM). Rows include REC21-REC40.

2011EX\_2

Table with 14 columns and 36 rows of numerical data, similar to the first page, representing concentration or angle values.

2011EX_2														
0.4	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.6	0.4	0.4	0.0	0.1
320.	*	0.2	0.5	0.9	0.3	0.2	0.8							
0.4	0.4	0.2	0.0	0.0	0.0	0.0	0.0							
330.	*	0.1	0.4	0.9	0.3	0.1	0.6	1.1	0.8	0.5	0.4	0.1	0.1	
0.4	0.4	0.3	0.0	0.0	0.0	0.0	0.0							
340.	*	0.1	0.4	0.9	0.2	0.0	0.5	1.1	0.9	0.4	0.4	0.1	0.2	
0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0							
350.	*	0.1	0.3	0.8	0.1	0.0	0.3	1.0	1.0	0.6	0.4	0.1	0.2	
0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0							
360.	*	0.1	0.3	0.7	0.0	0.1	0.3	0.9	1.2	0.7	0.6	0.1	0.2	
0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0							

-----\*

MAX	*	0.9	1.1	1.2	1.1	1.4	1.8	1.1	1.2	0.8	0.6	0.8	0.7	
1.1	0.9	0.9	0.8	1.0	1.7	1.6	1.0							
DEGR.	*	210	240	160	270	170	90	320	0	10	0	30	50	
40	90	90	130	130	120	150	160							

THE HIGHEST CONCENTRATION OF 2.00 PPM OCCURRED AT RECEPTOR REC4 .

## **2016 No-Build Condition**

JOB: HERALD SQUARE

RUN: 2016NB

DATE : 5/12/11  
 TIME : 11:11:22

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM  
 U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH =  
 1000. M AMB = 0.0 PPM

LINK VARIABLES

BRG TYPE	LINK DESCRIPTION	H	W	V/C	LINK COORDINATES (FT)			LENGTH
(DEG)	(G/MI)	(FT)	(FT)	X1	Y1	X2	Y2	(FT)

283. AG	1. Traveler/Front EB LL*	4650.2	1476.4	4576.5	1493.3	*	76.
	203. 100.0 1.0 20.0 0.60 3.8						
284. AG	2. Traveler/Front EB TT*	4643.6	1455.0	4549.3	1478.1	*	97.
	91. 100.0 1.0 20.0 0.53 4.9						
106. AG	3. Traveler/Front WB *	4688.8	1474.4	4787.9	1446.3	*	103.
	155. 100.0 1.0 20.0 0.55 5.2						
200. AG	4. Traveler/Front NB *	4659.8	1420.6	4140.4	10.1	*	1503.
	176. 100.0 1.0 20.0 1.25 76.4						
20. AG	5. EastBerk/Al bany SB *	4245.4	1211.3	4286.1	1323.5	*	119.
	215. 100.0 1.0 30.0 0.55 6.1						
109. AG	6. EastBerk/Al bany WB *	4263.2	1180.7	4351.3	1149.6	*	93.
	186. 100.0 1.0 30.0 0.43 4.7						
202. AG	7. EastBerk/Front NB LL*	4434.8	1106.4	4409.5	1042.8	*	68.
	143. 100.0 1.0 20.0 0.32 3.5						
200. AG	8. EastBerk/Front NB TT*	4456.3	1097.2	4220.5	455.7	*	683.
	143. 100.0 1.0 20.0 1.05 34.7						
109. AG	9. EastBerk/Front WB *	4492.9	1109.6	4557.3	1087.0	*	68.
	186. 100.0 1.0 30.0 0.31 3.5						
15. AG	10. Heral d/Al bany SB *	4576.3	2268.9	4614.9	2410.0	*	146.
	200. 100.0 1.0 30.0 0.74 7.4						
284. AG	11. Heral d/Al bany EB *	4525.0	2254.4	4383.7	2290.3	*	146.
	200. 100.0 1.0 30.0 0.74 7.4						
284. AG	12. Heral dDr/Al bany EB *	4483.3	2089.7	4479.6	2090.6	*	4.
	78. 100.0 1.0 10.0 0.02 0.2						
285. AG	13. Heral d/Al bany West *	4565.2	2240.8	4160.3	2352.7	*	420.
	1600. 9.1 1.0 54.0						
17. AG	14. Heral d/Al bany North *	4565.2	2240.8	4645.3	2496.2	*	268.
	1605. 9.1 1.0 54.0						
195. AG	15. Heral d/Al bany South *	4565.2	2240.8	4493.6	1982.5	*	268.
	3145. 9.1 1.0 66.0						
287. AG	16. Traveler/Front West *	4672.3	1463.7	4536.9	1504.2	*	141.
	1310. 9.1 1.0 66.0						
17. AG	17. Traveler/Front North*	4672.3	1463.7	4707.1	1579.7	*	121.
	1925. 9.1 1.0 42.0						
105. AG	18. Traveler/Front East *	4672.3	1463.7	4779.6	1434.3	*	111.
	1855. 9.1 1.0 66.0						
	19. Traveler/Front South*	4672.3	1463.7	4625.5	1314.5	*	156.

197. AG	1165. 9.1 1.0 66.0	4237.4	1189.1	4008.5	1261.2	*	240.
	20. EastBerk/Al bany West*						
287. AG	1180. 9.1 1.0 54.0	4237.4	1189.1	4312.7	1388.3	*	213.
	21. EastBerk/Al bany Nort*						
21. AG	1100. 9.1 1.0 54.0	4237.4	1189.1	4363.5	1140.4	*	135.
	22. EastBerk/Al bany East*						
111. AG	1005. 9.1 1.0 54.0	4237.4	1189.1	4177.4	998.3	*	200.
	23. EastBerk/Al bany Sout*						
197. AG	925. 9.1 1.0 54.0	4451.5	1115.0	4363.5	1140.4	*	92.
	24. EastBerk/Front West *						
286. AG	1005. 9.1 1.0 54.0	4451.5	1115.0	4491.4	1253.1	*	144.
	25. EastBerk/Front North*						
16. AG	1170. 9.1 1.0 54.0	4451.5	1115.0	4657.1	1037.7	*	220.
	26. EastBerk/Front East *						
111. AG	1055. 9.1 1.0 66.0	4451.5	1114.9	4392.1	968.8	*	158.
	27. EastBerk/Front South*						
202. AG	1830. 9.1 1.0 54.0	4521.4	2077.1	4389.1	2111.3	*	137.
	28. Heral dDr/Al bany West*						
284. AG	10. 9.1 1.0 30.0	4521.4	2073.4	4551.9	2171.5	*	103.
	29. Heral dDr/Al bany Nort*						
17. AG	3205. 9.1 1.0 66.0	4521.4	2074.2	4485.0	1955.3	*	124.
	30. Heral dDr/Al bany Sout*						
197. AG	2255. 9.1 1.0 54.0						

JOB: HERALD SQUARE

RUN: 2016NB

DATE : 5/12/11  
 TIME : 11:11:22

ADDITIONAL QUEUE LINK PARAMETERS

IDLE	LINK DESCRIPTION	CYCLE	RED	CLEARANCE	APPROACH	SATURATION
EM FAC	SIGNAL ARRIVAL	LENGTH	TIME	LOST TIME	VOL	FLOW RATE
(gm/hr)	TYPE RATE	(SEC)	(SEC)	(SEC)	(VPH)	(VPH)
49.74	1. Traveler/Front EB LL*	100	76	3.0	365	1600
	1 3					
49.74	2. Traveler/Front EB TT*	100	34	3.0	1045	1600
	1 3					
49.74	3. Traveler/Front WB *	100	58	3.0	650	1600
	1 3					
49.74	4. Traveler/Front NB *	100	66	3.0	1165	1600
	1 3					
49.74	5. EastBerk/Al bany SB *	110	59	3.0	1110	1600
	1 3					
49.74	6. EastBerk/Al bany WB *	110	51	3.0	1005	1600
	1 3					
49.74	7. EastBerk/Front NB LL*	110	59	3.0	425	1600
	1 3					
49.74	8. EastBerk/Front NB TT*	110	59	3.0	1405	1600
	1 3					
49.74	9. EastBerk/Front WB *	110	51	3.0	735	1600
	1 3					
49.74	10. Heral d/Al bany SB *	100	50	3.0	1605	1600
	1 3					
49.74	11. Heral d/Al bany EB *	100	50	3.0	1600	1600
	1 3					

2016NB\_1  
 49.74 1 3  
 12. Heral dDr/Al bany EB \* 120 70 3.0 10 1600  
 49.74 1 3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. Heral d/Al bany E1	4648.8	2383.5	6.0
2. Heral d/Al bany E2	4626.3	2312.0	6.0
3. Heral d/Al bany E3	4603.9	2240.4	6.0
4. Heral d/Al bany E4	4589.3	2166.8	6.0
5. Heral d/Al bany E5	4572.7	2093.7	6.0
6. Heral d/Al bany SW1	4473.8	2072.0	6.0
7. Heral d/Al bany SW2	4493.8	2144.3	6.0
8. Heral d/Al bany SW3	4513.9	2216.6	6.0
9. Heral d/Al bany SW4	4441.6	2236.5	6.0
10. Heral d/Al bany SW5	4369.3	2256.5	6.0
11. Heral d/Al bany NW1	4396.0	2325.9	6.0
12. Heral d/Al bany NW2	4468.3	2305.9	6.0
13. Heral d/Al bany NW3	4540.6	2286.0	6.0
14. Heral d/Al bany NW4	4563.0	2357.5	6.0
15. Heral d/Al bany NW5	4585.5	2429.1	6.0
16. Heral dDr/Al bany E1	4597.5	2196.4	6.0
17. Heral dDr/Al bany E2	4581.7	2122.5	6.0
18. Heral dDr/Al bany E3	4557.4	2051.8	6.0
19. Heral dDr/Al bany E4	4537.4	1979.7	6.0
20. Heral dDr/Al bany E5	4509.7	1909.5	6.0
21. Heral dDr/Al bany SW1	4435.1	1918.7	6.0
22. Heral dDr/Al bany SW2	4457.1	1990.6	6.0
23. Heral dDr/Al bany SW3	4479.1	2062.3	6.0
24. Heral dDr/Al bany SW4	4399.0	2082.9	6.0
25. Heral dDr/Al bany SW5	4326.4	2101.7	6.0
26. Heral dDr/Al bany NW1	4339.8	2149.9	6.0
27. Heral dDr/Al bany NW2	4412.4	2131.1	6.0
28. Heral dDr/Al bany NW3	4485.0	2112.4	6.0
29. Heral dDr/Al bany NW4	4505.0	2184.6	6.0
30. Heral dDr/Al bany NW5	4525.1	2256.9	6.0
31. Travel er/Front NE1	4757.6	1640.4	6.0
32. Travel er/Front NE2	4736.1	1568.5	6.0
33. Travel er/Front NE3	4714.6	1496.7	6.0

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JOB: HERALD SQUARE

RUN: 2016NB

DATE : 5/12/11  
 TIME : 11:11:22

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
34. Travel er/Front NE4	4786.9	1476.9	6.0
35. Travel er/Front NE5	4859.2	1457.1	6.0
36. Travel er/Front SE1	4845.6	1371.6	6.0
37. Travel er/Front SE2	4773.3	1391.4	6.0
38. Travel er/Front SE3	4700.9	1411.2	6.0
39. Travel er/Front SE4	4678.5	1339.7	6.0
40. Travel er/Front SE5	4656.0	1268.1	6.0

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2016NB\_1  
 41. Travel er/Front SW1 \* 4573.4 1292.1 6.0 \*  
 42. Travel er/Front SW2 \* 4595.8 1363.4 6.0 \*  
 43. Travel er/Front SW3 \* 4618.2 1435.0 6.0 \*  
 44. Travel er/Front SW4 \* 4546.4 1456.5 6.0 \*  
 45. Travel er/Front SW5 \* 4474.6 1478.0 6.0 \*

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JOB: HERALD SQUARE

RUN: 2016NB

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0. -360.

WIND \* CONCENTRATION

(DEGR)\* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12  
 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20

ANGLE (DEGR)	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.0	0.0	0.4	0.7	1.0	1.0	1.4	0.3	0.5	0.8	0.9	0.4	0.0	0.0						
0.0	0.0	0.0	0.9	1.2	1.7	2.1	1.6													
10.	* 0.2	0.4	0.7	0.7	1.0	0.8	0.7	0.9	0.9	0.5	0.0	0.0								
0.2	0.1	0.0	0.6	0.8	1.4	1.3	1.3													
20.	* 0.1	0.2	0.3	0.4	0.5	1.2	1.0	1.2	0.9	0.6	0.0	0.0								
0.5	0.3	0.1	0.3	0.3	0.8	0.8	0.8													
30.	* 0.0	0.1	0.1	0.1	0.0	1.6	1.2	1.4	1.0	0.7	0.0	0.0								
0.8	0.5	0.2	0.1	0.0	0.2	0.2	0.4													
40.	* 0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.3	1.3	1.1	0.8	0.0	0.1							
0.9	0.8	0.3	0.0	0.0	0.0	0.0	0.0													
50.	* 0.0	0.0	0.0	0.0	0.0	1.6	1.3	1.1	1.3	0.9	0.1	0.3								
1.0	0.9	0.4	0.0	0.0	0.0	0.0	0.0													
60.	* 0.0	0.0	0.0	0.0	0.0	1.7	1.2	1.0	1.3	1.2	0.1	0.4								
1.0	1.0	0.4	0.0	0.0	0.0	0.0	0.0													
70.	* 0.0	0.0	0.0	0.0	0.0	1.5	1.3	1.0	1.3	1.2	0.2	0.4								
0.9	0.9	0.4	0.0	0.0	0.0	0.0	0.0													
80.	* 0.0	0.0	0.0	0.0	0.0	1.4	1.3	0.9	1.0	1.2	0.2	0.4								
0.9	0.9	0.4	0.0	0.0	0.0	0.0	0.0													
90.	* 0.0	0.0	0.0	0.0	0.0	1.3	1.4	0.8	0.9	1.2	0.2	0.4								
0.8	0.9	0.4	0.0	0.0	0.0	0.0	0.0													
100.	* 0.0	0.0	0.0	0.0	0.0	1.4	1.5	0.9	0.6	0.7	0.4	0.5								
0.8	0.9	0.4	0.0	0.0	0.0	0.0	0.0													
110.	* 0.0	0.0	0.0	0.0	0.0	1.4	1.5	0.8	0.6	0.6	0.8	0.7								
0.7	0.9	0.5	0.0	0.0	0.0	0.0	0.0													
120.	* 0.0	0.0	0.0	0.0	0.0	1.2	1.4	0.8	0.6	0.6	1.1	0.8								
0.7	0.9	0.6	0.0	0.0	0.0	0.0	0.0													
130.	* 0.0	0.0	0.0	0.0	0.0	1.2	1.4	0.9	0.7	0.5	1.3	1.1								
0.7	0.9	0.7	0.0	0.0	0.0	0.0	0.0													
140.	* 0.0	0.0	0.0	0.0	0.0	1.3	1.6	1.2	0.7	0.5	1.4	1.2								
0.8	0.9	0.8	0.0	0.0	0.0	0.0	0.0													
150.	* 0.0	0.0	0.0	0.0	0.0	1.3	1.6	1.3	0.8	0.4	1.6	1.5								
1.0	0.9	0.9	0.0	0.0	0.0	0.0	0.0													
160.	* 0.0	0.0	0.0	0.0	0.0	1.2	1.7	1.6	0.7	0.2	1.3	1.6								
1.2	1.0	1.0	0.0	0.0	0.0	0.0	0.0													
170.	* 0.0	0.0	0.1	0.0	0.0	1.2	1.7	1.6	0.5	0.1	1.1	1.6								
1.5	1.3	1.1	0.0	0.0	0.1	0.1	0.1													

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2016NB\_1

290.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.2	0.0	0.3
0.6	0.6	0.4	0.6	0.7	0.9	0.6	0.6	0.3						
300.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	1.7	0.0	0.2
0.5	0.2	0.1	0.6	0.8	0.9	0.6	0.6	0.3						
310.	*	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.5	1.2	0.0	0.1
0.5	0.2	0.1	0.5	0.9	1.0	0.7	0.4							
320.	*	0.0	0.1	0.2	0.1	0.0	0.1	0.1	0.3	0.6	0.8	0.1	0.0	
0.5	0.1	0.0	0.3	1.0	1.0	0.9	0.4							
330.	*	0.1	0.1	0.3	0.1	0.1	0.1	0.2	0.3	0.6	0.6	0.3	0.1	
0.6	0.2	0.1	0.4	0.8	1.0	0.9	0.6							
340.	*	0.1	0.2	0.3	0.1	0.1	0.2	0.2	0.4	0.6	0.6	0.1	0.1	
0.6	0.1	0.1	0.1	0.8	1.0	1.0	0.7							
350.	*	0.1	0.3	0.3	0.2	0.1	0.2	0.3	0.4	0.6	0.5	0.1	0.1	
0.6	0.1	0.0	0.0	0.7	1.1	1.0	0.8							
360.	*	0.3	0.4	0.5	0.2	0.1	0.2	0.3	0.5	0.6	0.4	0.0	0.0	
0.4	0.0	0.0	0.0	0.5	1.0	0.8	0.8							

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MAX	*	1.3	2.0	2.0	0.7	0.6	0.6	0.8	1.6	1.8	2.2	1.0	1.2	
1.7	1.3	0.8	0.6	1.0	1.1	1.0	0.8							
DEGR.	*	30	30	30	50	60	40	110	50	170	280	210	210	
210	220	270	290	320	350	340	220							

♀

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JOB: HERALD SQUARE

RUN: 2016NB

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION						
ANGLE * (PPM)						
(DEGR) *	REC41	REC42	REC43	REC44	REC45	
0.	*	0.3	0.5	0.9	0.4	0.1
10.	*	0.4	0.6	0.9	0.5	0.1
20.	*	0.5	0.5	1.0	0.5	0.0
30.	*	0.7	0.8	1.1	0.6	0.0
40.	*	0.8	0.8	1.2	0.7	0.0
50.	*	0.8	0.9	1.1	1.0	0.1
60.	*	0.7	0.9	1.0	1.1	0.2
70.	*	0.5	0.8	1.1	1.2	0.4
80.	*	0.5	0.7	0.9	1.2	0.6
90.	*	0.4	0.6	0.8	1.1	0.8
100.	*	0.4	0.6	0.8	0.7	0.8
110.	*	0.4	0.6	0.6	0.5	0.5
120.	*	0.4	0.6	0.5	0.2	0.2
130.	*	0.4	0.5	0.6	0.3	0.2
140.	*	0.4	0.5	0.6	0.3	0.1
150.	*	0.4	0.6	0.6	0.3	0.1
160.	*	0.4	0.5	0.7	0.2	0.1
170.	*	0.6	0.5	0.7	0.2	0.2
180.	*	0.6	0.7	0.6	0.3	0.5
190.	*	0.8	0.7	0.8	0.5	0.3

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200.	*	0.9	0.8	0.6	0.4	0.2								
210.	*	0.6	0.5	0.4	0.0	0.0								
220.	*	0.4	0.3	0.1	0.0	0.2								
230.	*	0.2	0.1	0.0	0.2	0.2								
240.	*	0.2	0.0	0.1	0.2	0.2								
250.	*	0.2	0.2	0.2	0.1	0.0								
260.	*	0.3	0.2	0.0	0.0	0.0								
270.	*	0.2	0.0	0.0	0.0	0.0								
280.	*	0.1	0.0	0.0	0.0	0.0								
290.	*	0.0	0.0	0.2	0.0	0.0								
300.	*	0.0	0.0	0.4	0.0	0.0								
310.	*	0.0	0.0	0.6	0.0	0.0								
320.	*	0.0	0.0	0.7	0.1	0.0								
330.	*	0.0	0.1	0.7	0.1	0.0								
340.	*	0.0	0.2	0.9	0.1	0.0								
350.	*	0.2	0.4	0.9	0.3	0.0								
360.	*	0.3	0.5	0.9	0.4	0.1								

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MAX	*	0.9	0.9	1.2	1.2	0.8								
DEGR.	*	200	50	40	70	90								

THE HIGHEST CONCENTRATION OF 2.20 PPM OCCURRED AT RECEPTOR REC30.

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JOB: HERALD SQUARE

RUN: 2016NB

DATE : 5/12/11  
 TIME : 11:11:15

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM  
 U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH =  
 1000. M AMB = 0.0 PPM

LINK VARIABLES

BRG TYPE	LINK DESCRIPTION	H	W	V/C	LINK COORDINATES (FT)	* LENGTH
(DEG)	(G/MI)	(FT)	(FT)	X1	Y1 X2 Y2	(FT)

283. AG	1. Traveler/Front EB LL*	4650.2	1476.4	4576.5	1493.3 *	76.
	203. 100.0 1.0 20.0 0.60 3.8					
284. AG	2. Traveler/Front EB TT*	4643.6	1455.0	4549.3	1478.1 *	97.
	91. 100.0 1.0 20.0 0.53 4.9					
106. AG	3. Traveler/Front WB *	4688.8	1474.4	4787.9	1446.3 *	103.
	155. 100.0 1.0 20.0 0.55 5.2					
200. AG	4. Traveler/Front NB *	4659.8	1420.6	4140.4	10.1 *	1503.
	176. 100.0 1.0 20.0 1.25 76.4					
20. AG	5. EastBerk/Al bany SB *	4245.4	1211.3	4286.1	1323.5 *	119.
	215. 100.0 1.0 30.0 0.55 6.1					
109. AG	6. EastBerk/Al bany WB *	4263.2	1180.7	4351.3	1149.6 *	93.
	186. 100.0 1.0 30.0 0.43 4.7					
202. AG	7. EastBerk/Front NB LL*	4434.8	1106.4	4409.5	1042.8 *	68.
	143. 100.0 1.0 20.0 0.32 3.5					
200. AG	8. EastBerk/Front NB TT*	4456.3	1097.2	4220.5	455.7 *	683.
	143. 100.0 1.0 20.0 1.05 34.7					
109. AG	9. EastBerk/Front WB *	4492.9	1109.6	4557.3	1087.0 *	68.
	186. 100.0 1.0 30.0 0.31 3.5					
15. AG	10. Heral d/Al bany SB *	4576.3	2268.9	4614.9	2410.0 *	146.
	200. 100.0 1.0 30.0 0.74 7.4					
284. AG	11. Heral d/Al bany EB *	4525.0	2254.4	4383.7	2290.3 *	146.
	200. 100.0 1.0 30.0 0.74 7.4					
284. AG	12. Heral dDr/Al bany EB *	4483.3	2089.7	4479.6	2090.6 *	4.
	78. 100.0 1.0 10.0 0.02 0.2					
285. AG	13. Heral d/Al bany West *	4565.2	2240.8	4160.3	2352.7 *	420.
	1600. 9.1 1.0 54.0					
17. AG	14. Heral d/Al bany North *	4565.2	2240.8	4645.3	2496.2 *	268.
	1605. 9.1 1.0 54.0					
195. AG	15. Heral d/Al bany South *	4565.2	2240.8	4493.6	1982.5 *	268.
	3145. 9.1 1.0 66.0					
287. AG	16. Traveler/Front West *	4672.3	1463.7	4536.9	1504.2 *	141.
	1310. 9.1 1.0 66.0					
17. AG	17. Traveler/Front North*	4672.3	1463.7	4707.1	1579.7 *	121.
	1925. 9.1 1.0 42.0					
105. AG	18. Traveler/Front East *	4672.3	1463.7	4779.6	1434.3 *	111.
	1855. 9.1 1.0 66.0					
	19. Traveler/Front South*	4672.3	1463.7	4625.5	1314.5 *	156.

197. AG	1165. 9.1 1.0 66.0	4237.4	1189.1	4008.5	1261.2 *	240.
	20. EastBerk/Al bany West*					
287. AG	1180. 9.1 1.0 54.0	4237.4	1189.1	4312.7	1388.3 *	213.
	21. EastBerk/Al bany Nort*					
21. AG	1100. 9.1 1.0 54.0	4237.4	1189.1	4363.5	1140.4 *	135.
	22. EastBerk/Al bany East*					
111. AG	1005. 9.1 1.0 54.0	4237.4	1189.1	4177.4	998.3 *	200.
	23. EastBerk/Al bany Sout*					
197. AG	925. 9.1 1.0 54.0	4451.5	1115.0	4363.5	1140.4 *	92.
	24. EastBerk/Front West *					
286. AG	1005. 9.1 1.0 54.0	4451.5	1115.0	4491.4	1253.1 *	144.
	25. EastBerk/Front North*					
16. AG	1170. 9.1 1.0 54.0	4451.5	1115.0	4657.1	1037.7 *	220.
	26. EastBerk/Front East *					
111. AG	1055. 9.1 1.0 66.0	4451.5	1114.9	4392.1	968.8 *	158.
	27. EastBerk/Front South*					
202. AG	1830. 9.1 1.0 54.0	4521.4	2077.1	4389.1	2111.3 *	137.
	28. Heral dDr/Al bany West*					
284. AG	10. 9.1 1.0 30.0	4521.4	2073.4	4551.9	2171.5 *	103.
	29. Heral dDr/Al bany Nort*					
17. AG	3205. 9.1 1.0 66.0	4521.4	2074.2	4485.0	1955.3 *	124.
	30. Heral dDr/Al bany Sout*					
197. AG	2255. 9.1 1.0 54.0					

JOB: HERALD SQUARE

RUN: 2016NB

DATE : 5/12/11  
 TIME : 11:11:15

ADDITIONAL QUEUE LINK PARAMETERS

IDLE	LINK DESCRIPTION	* CYCLE	RED	CLEARANCE	APPROACH	SATURATION
EM FAC	SIGNAL ARRIVAL	* LENGTH	TIME	LOST TIME	VOL	FLOW RATE
(gm/hr)	TYPE RATE	(SEC)	(SEC)	(SEC)	(VPH)	(VPH)
49.74	1. Traveler/Front EB LL*	100	76	3.0	365	1600
	1 3					
49.74	2. Traveler/Front EB TT*	100	34	3.0	1045	1600
	1 3					
49.74	3. Traveler/Front WB *	100	58	3.0	650	1600
	1 3					
49.74	4. Traveler/Front NB *	100	66	3.0	1165	1600
	1 3					
49.74	5. EastBerk/Al bany SB *	110	59	3.0	1110	1600
	1 3					
49.74	6. EastBerk/Al bany WB *	110	51	3.0	1005	1600
	1 3					
49.74	7. EastBerk/Front NB LL*	110	59	3.0	425	1600
	1 3					
49.74	8. EastBerk/Front NB TT*	110	59	3.0	1405	1600
	1 3					
49.74	9. EastBerk/Front WB *	110	51	3.0	735	1600
	1 3					
49.74	10. Heral d/Al bany SB *	100	50	3.0	1605	1600
	1 3					
49.74	11. Heral d/Al bany EB *	100	50	3.0	1600	1600

49.74 1 3 2016NB\_2  
 12. Heral dDr/Al bany EB \* 120 70 3.0 10 1600  
 49.74 1 3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. EastBerk/Front NE1	4539.9	1287.5	6.0
2. EastBerk/Front NE2	4519.0	1215.4	6.0
3. EastBerk/Front NE3	4498.2	1143.3	6.0
4. EastBerk/Front NE4	4568.4	1116.9	6.0
5. EastBerk/Front NE5	4638.6	1090.6	6.0
6. EastBerk/Front SE1	4610.4	1009.3	6.0
7. EastBerk/Front SE2	4540.1	1035.7	6.0
8. EastBerk/Front SE3	4470.0	1062.1	6.0
9. EastBerk/Front SE4	4441.7	992.6	6.0
10. EastBerk/Front SE5	4413.5	923.1	6.0
11. EastBerk/Front SW1	4345.8	953.1	6.0
12. EastBerk/Front SE2	4374.2	1022.9	6.0
13. EastBerk/Front SE3	4401.8	1090.8	6.0
14. EastBerk/Front SE4	4339.7	1109.9	6.0
15. EastBerk/Front SE5	4269.6	1137.0	6.0
16. EastBerk/Front NW1	4284.7	1210.5	6.0
17. EastBerk/Front NW2	4354.7	1183.5	6.0
18. EastBerk/Front NW3	4426.2	1160.8	6.0
19. EastBerk/Front NW4	4447.0	1232.8	6.0
20. EastBerk/Front NW5	4467.9	1304.9	6.0
21. EastBerk/Al bany NE1	4338.0	1350.7	6.0
22. EastBerk/Al bany NE2	4311.5	1280.6	6.0
23. EastBerk/Al bany NE3	4285.0	1210.4	6.0
24. EastBerk/Al bany NE4	4355.0	1183.4	6.0
25. EastBerk/Al bany NE5	4426.5	1160.7	6.0
26. EastBerk/Al bany SE1	4402.4	1090.7	6.0
27. EastBerk/Al bany SE2	4330.8	1113.4	6.0
28. EastBerk/Al bany SE3	4260.9	1140.4	6.0
29. EastBerk/Al bany SE4	4238.4	1068.8	6.0
30. EastBerk/Al bany SE5	4215.8	997.3	6.0
31. EastBerk/Al bany SW1	4146.0	1021.8	6.0
32. EastBerk/Al bany SW2	4168.5	1093.4	6.0
33. EastBerk/Al bany SW3	4191.0	1164.9	6.0

JOB: HERALD SQUARE PAGE 3 RUN: 2016NB

DATE : 5/12/11  
 TIME : 11:11:15

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
34. EastBerk/Al bany SW4	4119.5	1187.4	6.0
35. EastBerk/Al bany SW5	4047.9	1209.9	6.0
36. EastBerk/Al bany NW1	4072.1	1279.9	6.0
37. EastBerk/Al bany NW2	4143.6	1257.4	6.0
38. EastBerk/Al bany NW3	4215.1	1234.9	6.0
39. EastBerk/Al bany NW4	4241.7	1305.1	6.0
40. EastBerk/Al bany NW5	4268.2	1375.2	6.0

2016NB\_2  
 PAGE 4  
 JOB: HERALD SQUARE RUN: 2016NB

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND \* CONCENTRATION  
 ANGLE \* (PPM)  
 (DEGR)\* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12  
 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20

0.	*	0.2	0.2	0.3	0.7	0.3	0.4	1.2	0.7	1.3	1.2	0.2	0.2
0.2	0.6	1.0	0.7	0.0	0.0	0.1	0.1						
10.	*	0.2	0.1	0.2	0.8	0.3	0.3	1.1	0.6	1.0	1.0	0.2	0.2
0.3	0.5	1.0	0.6	0.1	0.2	0.1	0.1						
20.	*	0.3	0.4	0.3	0.7	0.0	0.3	1.1	0.6	0.8	1.1	0.5	0.4
0.4	0.4	0.9	0.4	0.0	0.1	0.0	0.1						
30.	*	0.5	0.4	0.3	0.3	0.0	0.2	0.5	0.8	0.7	0.7	0.8	0.8
0.6	0.4	0.6	0.1	0.0	0.2	0.2	0.2						
40.	*	0.5	0.4	0.5	0.1	0.0	0.2	0.3	0.8	0.5	0.5	1.1	1.2
0.7	0.4	0.6	0.0	0.0	0.5	0.5	0.3						
50.	*	0.6	0.5	0.3	0.0	0.0	0.2	0.3	0.9	0.5	0.4	1.0	1.4
1.0	0.5	0.6	0.0	0.1	0.5	0.4	0.5						
60.	*	0.5	0.3	0.3	0.0	0.0	0.1	0.3	0.9	0.5	0.4	1.0	1.3
1.2	0.5	0.9	0.1	0.2	0.5	0.5	0.3						
70.	*	0.4	0.3	0.3	0.0	0.0	0.1	0.3	0.8	0.4	0.3	0.8	1.2
1.4	0.4	0.9	0.1	0.2	0.5	0.4	0.3						
80.	*	0.4	0.3	0.3	0.0	0.0	0.1	0.3	0.8	0.4	0.3	0.6	1.2
1.5	0.7	0.8	0.2	0.2	0.5	0.4	0.3						
90.	*	0.2	0.3	0.3	0.0	0.0	0.1	0.2	0.7	0.3	0.3	0.5	0.9
1.7	0.8	0.9	0.2	0.2	0.5	0.5	0.2						
100.	*	0.2	0.3	0.4	0.0	0.0	0.0	0.2	0.5	0.3	0.3	0.4	0.8
1.4	0.9	0.8	0.2	0.3	0.7	0.5	0.2						
110.	*	0.2	0.3	0.5	0.1	0.0	0.0	0.1	0.4	0.3	0.3	0.4	0.9
1.5	0.7	0.7	0.7	0.5	0.8	0.5	0.2						
120.	*	0.2	0.3	0.7	0.2	0.0	0.0	0.0	0.4	0.3	0.3	0.4	0.9
1.3	0.6	0.5	0.9	0.7	1.1	0.5	0.2						
130.	*	0.2	0.2	0.9	0.2	0.1	0.0	0.0	0.3	0.3	0.3	0.4	0.8
1.2	0.5	0.3	1.1	0.9	1.2	0.6	0.2						
140.	*	0.3	0.4	1.0	0.3	0.1	0.0	0.0	0.3	0.3	0.3	0.4	0.8
1.3	0.5	0.3	1.2	0.9	0.9	0.7	0.3						
150.	*	0.3	0.4	1.0	0.3	0.1	0.0	0.0	0.3	0.3	0.3	0.4	0.9
1.4	0.5	0.3	1.1	0.8	1.1	0.7	0.4						
160.	*	0.4	0.5	1.0	0.3	0.2	0.0	0.0	0.3	0.3	0.3	0.5	0.8
1.3	0.4	0.2	1.1	0.9	1.3	0.8	0.6						
170.	*	0.5	0.5	1.0	0.3	0.2	0.0	0.0	0.4	0.3	0.3	0.5	0.8
1.2	0.5	0.2	1.0	0.7	1.4	0.9	0.7						
180.	*	0.5	0.7	0.9	0.4	0.2	0.0	0.1	0.4	0.5	0.5	0.5	0.7
1.2	0.3	0.2	0.8	0.9	1.4	1.2	0.7						
190.	*	0.8	0.8	1.1	0.6	0.2	0.0	0.3	0.7	0.6	0.5	0.4	0.6
1.0	0.2	0.1	0.8	0.7	1.3	1.0	0.8						
200.	*	0.9	0.9	1.1	1.2	0.4	0.1	0.7	0.7	0.6	0.6	0.2	0.4



2016NB_2													
0.4	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.9	0.6	0.3	0.3	0.0	0.1
320.	*	0.2	0.7	0.8	0.3	0.2	0.7						
0.4	0.3	0.2	0.0	0.0	0.0	0.0	0.0	1.0	0.7	0.4	0.4	0.1	0.1
330.	*	0.1	0.6	0.8	0.3	0.1	0.6						
0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	1.0	0.8	0.4	0.4	0.1	0.1
340.	*	0.1	0.5	0.8	0.2	0.0	0.4						
0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.9	1.0	0.6	0.4	0.1	0.1
350.	*	0.1	0.4	0.8	0.1	0.0	0.2						
0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.8	1.1	0.7	0.6	0.1	0.1
360.	*	0.1	0.3	0.7	0.0	0.0	0.2						
0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0						

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MAX	*	0.9	1.0	1.2	0.9	1.4	1.7	1.0	1.1	0.7	0.6	0.7	0.7
1.0	0.9	0.9	0.8	1.0	1.5	1.3	1.2						
DEGR.	*	220	250	140	130	170	90	330	0	0	0	40	50
30	90	90	130	130	120	140	180						

THE HIGHEST CONCENTRATION OF 1.90 PPM OCCURRED AT RECEPTOR REC4 .

# 2016 Build Condition

JOB: HERALD SQUARE

RUN: 2016BD

DATE : 1/13/12  
 TIME : 13:32:36

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM  
 U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH =  
 1000. M AMB = 0.0 PPM

LINK VARIABLES

BRG TYPE	LINK DESCRIPTION	H	W	V/C	LINK COORDINATES (FT)	* LENGTH
(DEG)	(G/MI)	(FT)	(FT)	X1	Y1 X2 Y2	(FT)

283. AG	1. Traveler/Front EB LL*	101.000.0	1.0 10.0	1.43 80.9	1476.4 3098.7 1832.0	1592.
284. AG	2. Traveler/Front EB TT*	91.100.0	1.0 20.0	0.54 5.0	1474.4 4803.2 1442.0	119.
106. AG	3. Traveler/Front WB *	155.100.0	1.0 20.0	0.63 6.0	1420.6 4630.7 1341.7	84.
200. AG	4. Traveler/Front NB *	440.100.0	1.0 50.0	0.50 4.3	1211.3 4286.9 1325.9	122.
20. AG	5. EastBerk/Al bany SB *	215.100.0	1.0 30.0	0.57 6.2	1180.7 4399.2 1132.7	144.
109. AG	6. EastBerk/Al bany WB *	124.100.0	1.0 20.0	0.66 7.3	1106.4 4408.0 1038.9	73.
202. AG	7. EastBerk/Front NB LL*	143.100.0	1.0 20.0	0.34 3.7	1097.2 4393.6 926.8	182.
200. AG	8. EastBerk/Front NB TT*	143.100.0	1.0 20.0	0.81 9.2	1109.6 4557.6 1086.9	69.
109. AG	9. EastBerk/Front WB *	186.100.0	1.0 30.0	0.31 3.5	2268.9 4616.5 2416.1	153.
15. AG	10. Heral d/Al bany SB *	200.100.0	1.0 30.0	0.77 7.8	2254.4 4381.9 2290.8	148.
284. AG	11. Heral d/Al bany EB *	200.100.0	1.0 30.0	0.75 7.5	2089.7 4481.4 2090.1	2.
284. AG	12. Heral dDr/Al bany EB *	78.100.0	1.0 10.0	0.01 0.1	2240.8 4160.3 2352.7	420.
285. AG	13. Heral d/Al bany West *	1620.9.1	1.0 54.0		2240.8 4645.3 2496.2	268.
17. AG	14. Heral d/Al bany North *	1675.9.1	1.0 54.0		2240.8 4493.6 1982.5	268.
195. AG	15. Heral d/Al bany South *	3295.9.1	1.0 66.0		1463.7 4536.9 1504.2	141.
287. AG	16. Traveler/Front West *	1485.9.1	1.0 66.0		1463.7 4707.1 1579.7	121.
17. AG	17. Traveler/Front North*	2290.9.1	1.0 42.0		1463.7 4779.6 1434.3	111.
105. AG	18. Traveler/Front East *	1860.9.1	1.0 66.0		1463.7 4625.5 1314.5	156.
	19. Traveler/Front South*					

197. AG	20. EastBerk/Al bany West*	1165.9.1	1.0 66.0		4237.4 1189.1 4008.5	1261.2	*	240.
287. AG	21. EastBerk/Al bany Nort*	1220.9.1	1.0 54.0		4237.4 1189.1 4312.7	1388.3	*	213.
21. AG	22. EastBerk/Al bany East*	1135.9.1	1.0 54.0		4237.4 1189.1 4363.5	1140.4	*	135.
111. AG	23. EastBerk/Al bany Sout*	1035.9.1	1.0 54.0		4237.4 1189.1 4177.4	998.3	*	200.
197. AG	24. EastBerk/Front West *	950.9.1	1.0 54.0		4451.5 1115.0 4363.5	1140.4	*	92.
286. AG	25. EastBerk/Front North*	1035.9.1	1.0 54.0		4451.5 1115.0 4491.4	1253.1	*	144.
16. AG	26. EastBerk/Front East *	1170.9.1	1.0 54.0		4451.5 1115.0 4657.1	1037.7	*	220.
111. AG	27. EastBerk/Front South*	1060.9.1	1.0 66.0		4451.5 1114.9 4392.1	968.8	*	158.
202. AG	28. Heral dDr/Al bany West*	1855.9.1	1.0 54.0		4521.4 2077.1 4389.1	2111.3	*	137.
284. AG	29. Heral dDr/Al bany Nort*	5.9.1	1.0 30.0		4521.4 2073.4 4551.9	2171.5	*	103.
17. AG	30. Heral dDr/Al bany Sout*	3295.9.1	1.0 66.0		4521.4 2074.2 4485.0	1955.3	*	124.
197. AG		2345.9.1	1.0 54.0					

JOB: HERALD SQUARE

RUN: 2016BD

DATE : 1/13/12  
 TIME : 13:32:36

ADDITIONAL QUEUE LINK PARAMETERS

IDLE	LINK DESCRIPTION	* CYCLE	RED	CLEARANCE	APPROACH	SATURATION
EM FAC	SIGNAL ARRIVAL	* LENGTH	TIME	LOST TIME	VOL	FLOW RATE
(gm/hr)	TYPE RATE	(SEC)	(SEC)	(SEC)	(VPH)	(VPH)
49.70	1. Traveler/Front EB LL*	100	76	3.0	435	1600
49.74	2. Traveler/Front EB TT*	100	34	3.0	1050	1600
49.74	3. Traveler/Front WB *	100	58	3.0	750	1600
49.70	4. Traveler/Front NB *	100	66	3.0	1165	1600
49.74	5. EastBerk/Al bany SB *	110	59	3.0	1135	1600
49.70	6. EastBerk/Al bany WB *	110	51	3.0	1035	1600
49.74	7. EastBerk/Front NB LL*	110	59	3.0	450	1600
49.74	8. EastBerk/Front NB TT*	110	59	3.0	1085	1600
49.74	9. EastBerk/Front WB *	110	51	3.0	740	1600
49.74	10. Heral d/Al bany SB *	100	50	3.0	1675	1600
49.74	11. Heral d/Al bany EB *	100	50	3.0	1620	1600

2016BD\_1\_new.out  
 49.74 1 3  
 12. Heral dDr/Al bany EB \* 120 70 3.0 5 1600  
 49.74 1 3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. Heral d/Al bany E1	4648.8	2383.5	6.0
2. Heral d/Al bany E2	4626.3	2312.0	6.0
3. Heral d/Al bany E3	4603.9	2240.4	6.0
4. Heral d/Al bany E4	4589.3	2166.8	6.0
5. Heral d/Al bany E5	4572.7	2093.7	6.0
6. Heral d/Al bany SW1	4473.8	2072.0	6.0
7. Heral d/Al bany SW2	4493.8	2144.3	6.0
8. Heral d/Al bany SW3	4513.9	2216.6	6.0
9. Heral d/Al bany SW4	4441.6	2236.5	6.0
10. Heral d/Al bany SW5	4369.3	2256.5	6.0
11. Heral d/Al bany NW1	4396.0	2325.9	6.0
12. Heral d/Al bany NW2	4468.3	2305.9	6.0
13. Heral d/Al bany NW3	4540.6	2286.0	6.0
14. Heral d/Al bany NW4	4563.0	2357.5	6.0
15. Heral d/Al bany NW5	4585.5	2429.1	6.0
16. Heral dDr/Al bany E1	4597.5	2196.4	6.0
17. Heral dDr/Al bany E2	4581.7	2122.5	6.0
18. Heral dDr/Al bany E3	4557.4	2051.8	6.0
19. Heral dDr/Al bany E4	4537.4	1979.7	6.0
20. Heral dDr/Al bany E5	4509.7	1909.5	6.0
21. Heral dDr/Al bany SW1	4435.1	1918.7	6.0
22. Heral dDr/Al bany SW2	4457.1	1990.6	6.0
23. Heral dDr/Al bany SW3	4479.1	2062.3	6.0
24. Heral dDr/Al bany SW4	4399.0	2082.9	6.0
25. Heral dDr/Al bany SW5	4326.4	2101.7	6.0
26. Heral dDr/Al bany NW1	4339.8	2149.9	6.0
27. Heral dDr/Al bany NW2	4412.4	2131.1	6.0
28. Heral dDr/Al bany NW3	4485.0	2112.4	6.0
29. Heral dDr/Al bany NW4	4505.0	2184.6	6.0
30. Heral dDr/Al bany NW5	4525.1	2256.9	6.0
31. Travel er/Front NE1	4757.6	1640.4	6.0
32. Travel er/Front NE2	4736.1	1568.5	6.0
33. Travel er/Front NE3	4714.6	1496.7	6.0

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JOB: HERALD SQUARE

RUN: 2016BD

DATE : 1/13/12  
 TIME : 13:32:36

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
34. Travel er/Front NE4	4786.9	1476.9	6.0
35. Travel er/Front NE5	4859.2	1457.1	6.0
36. Travel er/Front SE1	4845.6	1371.6	6.0
37. Travel er/Front SE2	4773.3	1391.4	6.0
38. Travel er/Front SE3	4700.9	1411.2	6.0
39. Travel er/Front SE4	4678.5	1339.7	6.0
40. Travel er/Front SE5	4656.0	1268.1	6.0

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2016BD\_1\_new.out  
 41. Travel er/Front SW1 \* 4573.4 1292.1 6.0 \*  
 42. Travel er/Front SW2 \* 4595.8 1363.4 6.0 \*  
 43. Travel er/Front SW3 \* 4618.2 1435.0 6.0 \*  
 44. Travel er/Front SW4 \* 4546.4 1456.5 6.0 \*  
 45. Travel er/Front SW5 \* 4474.6 1478.0 6.0 \*

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JOB: HERALD SQUARE

RUN: 2016BD

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0. -360.

WIND \* CONCENTRATION

ANGLE \* (PPM)  
 (DEGR)\* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12  
 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20

ANGLE (DEGR)	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.0	0.0	0.4	0.8	1.1	1.0	1.4	0.3	0.5	0.8	0.9	0.5	0.0	0.0						
10.	0.0	0.2	0.5	0.7	0.7	1.0	0.8	0.7	0.9	0.9	0.5	0.0	0.0							
20.	0.1	0.1	0.6	0.8	1.4	1.4	1.5	1.0	1.2	0.9	0.6	0.0	0.0							
30.	0.4	0.1	0.3	0.3	0.8	0.9	0.8	1.2	1.4	1.0	0.7	0.0	0.0							
40.	0.6	0.3	0.1	0.0	0.2	0.2	0.4	1.4	1.4	1.2	0.8	0.0	0.1							
50.	0.8	0.3	0.0	0.0	0.0	0.0	0.1	1.4	1.1	1.3	1.1	0.1	0.3							
60.	0.9	0.4	0.0	0.0	0.0	0.0	0.0	1.3	1.0	1.4	1.2	0.2	0.4							
70.	1.0	0.4	0.0	0.0	0.0	0.0	0.0	1.3	1.0	1.3	1.2	0.2	0.4							
80.	1.0	0.4	0.0	0.0	0.0	0.0	0.0	1.4	0.9	1.0	1.2	0.2	0.4							
90.	0.9	0.4	0.0	0.0	0.0	0.0	0.0	1.4	0.8	0.9	1.2	0.2	0.4							
100.	0.8	0.4	0.0	0.0	0.0	0.0	0.0	1.5	0.9	0.6	0.7	0.4	0.5							
110.	0.8	0.5	0.0	0.0	0.0	0.0	0.0	1.6	0.8	0.6	0.7	0.8	0.7							
120.	0.7	0.6	0.0	0.0	0.0	0.0	0.0	1.4	0.9	0.6	0.6	1.2	0.8							
130.	0.7	0.7	0.0	0.0	0.0	0.0	0.0	1.5	1.0	0.7	0.5	1.3	1.1							
140.	0.7	0.8	0.0	0.0	0.0	0.0	0.0	1.6	1.2	0.7	0.5	1.5	1.4							
150.	0.8	0.9	0.0	0.0	0.0	0.0	0.0	1.7	1.4	0.8	0.4	1.6	1.6							
160.	1.0	1.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	0.7	0.2	1.3	1.6							
170.	1.2	1.0	0.0	0.0	0.0	0.0	0.0	1.6	1.7	0.5	0.0	1.1	1.6							
1.7	1.3	1.2	0.0	0.0	0.0	0.0	0.1	0.1												

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2016BD\_1\_new.out

290.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.2	0.0	0.3
0.8	0.7	0.6	0.8	0.8	1.3	1.3	0.1							
300.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	1.7	0.0	0.2
0.6	0.3	0.1	0.7	1.1	1.2	1.4	0.1							
310.	*	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.5	1.2	0.0	0.1	
0.6	0.2	0.1	0.6	1.0	1.1	1.5	0.2							
320.	*	0.0	0.1	0.2	0.1	0.0	0.1	0.2	0.3	0.6	0.8	0.1	0.1	
0.6	0.2	0.0	0.4	1.0	1.0	1.7	0.3							
330.	*	0.1	0.1	0.3	0.1	0.1	0.2	0.2	0.3	0.6	0.6	0.3	0.1	
0.7	0.2	0.1	0.4	0.9	0.9	1.7	0.6							
340.	*	0.1	0.2	0.3	0.1	0.1	0.2	0.3	0.4	0.6	0.6	0.2	0.1	
0.7	0.1	0.1	0.2	0.9	1.0	1.8	0.8							
350.	*	0.1	0.3	0.3	0.2	0.1	0.2	0.3	0.4	0.6	0.5	0.1	0.1	
0.7	0.1	0.0	0.0	0.7	1.2	1.4	1.1							
360.	*	0.3	0.4	0.5	0.2	0.1	0.2	0.4	0.5	0.6	0.4	0.0	0.0	
0.4	0.0	0.0	0.0	0.5	1.1	1.1	1.1							

-----  
 MAX \* 1.4 2.0 2.1 0.8 0.6 0.6 0.8 1.7 1.8 2.2 0.8 1.2  
 1.7 1.4 1.0 0.8 1.1 1.4 1.8 1.1  
 DEGR. \* 20 30 30 90 60 40 110 40 160 280 200 220  
 210 250 270 290 300 240 340 0

♀

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JOB: HERALD SQUARE

RUN: 2016BD

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM)	REC41	REC42	REC43	REC44	REC45
0.	*	0.3	0.5	0.7	0.6	0.2
10.	*	0.5	0.6	0.8	0.6	0.3
20.	*	0.6	0.7	0.9	0.6	0.2
30.	*	1.0	1.0	1.0	0.6	0.1
40.	*	1.1	1.5	1.2	0.7	0.2
50.	*	0.9	1.6	1.1	0.9	0.3
60.	*	0.6	1.7	1.1	1.0	0.4
70.	*	0.2	1.7	1.1	1.1	0.5
80.	*	0.1	1.5	1.1	1.3	0.7
90.	*	0.0	1.3	1.0	1.1	0.8
100.	*	0.0	1.3	1.0	0.8	0.9
110.	*	0.0	1.2	1.0	0.7	0.6
120.	*	0.0	0.9	1.1	0.5	0.4
130.	*	0.0	0.6	1.2	0.6	0.3
140.	*	0.0	0.4	1.4	0.5	0.1
150.	*	0.0	0.3	1.4	0.3	0.0
160.	*	0.0	0.2	1.4	0.1	0.0
170.	*	0.1	0.1	1.2	0.0	0.0
180.	*	0.1	0.2	0.8	0.1	0.2
190.	*	0.2	0.1	0.6	0.2	0.1

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2016BD\_1\_new.out

200.	*	0.5	0.4	0.3	0.2	0.0
210.	*	0.4	0.3	0.2	0.0	0.0
220.	*	0.4	0.2	0.1	0.0	0.2
230.	*	0.2	0.1	0.0	0.2	0.2
240.	*	0.2	0.0	0.1	0.2	0.2
250.	*	0.1	0.2	0.2	0.1	0.0
260.	*	0.3	0.2	0.0	0.0	0.0
270.	*	0.2	0.0	0.0	0.0	0.1
280.	*	0.2	0.0	0.2	0.1	0.1
290.	*	0.1	0.1	0.4	0.2	0.2
300.	*	0.1	0.1	0.6	0.2	0.2
310.	*	0.1	0.1	0.7	0.3	0.2
320.	*	0.1	0.1	0.8	0.3	0.2
330.	*	0.1	0.2	0.8	0.3	0.2
340.	*	0.1	0.3	0.8	0.3	0.2
350.	*	0.3	0.5	0.7	0.4	0.2
360.	*	0.3	0.5	0.7	0.6	0.2

MAX \* 1.1 1.7 1.4 1.3 0.9  
 DEGR. \* 40 60 140 80 100

THE HIGHEST CONCENTRATION OF 2.20 PPM OCCURRED AT RECEPTOR REC30.

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JOB: HERALD SQUARE

RUN: 2016BD

DATE : 1/13/12  
 TIME : 13:32:46

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 175. CM  
 U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH =  
 1000. M AMB = 0.0 PPM

LINK VARIABLES

BRG TYPE	LINK DESCRIPTION	H	W	V/C	LINK COORDINATES (FT)	* LENGTH
(DEG)	(G/MI) (FT) (FT)	X1	Y1	Y2	(VEH)	(FT)

283. AG	1. Traveler/Front EB LL*	4650.2	1476.4	3098.7	1832.0 *	1592.
	101. 100.0 1.0 10.0 1.43 80.9					
284. AG	2. Traveler/Front EB TT*	4643.6	1455.0	4548.8	1478.2 *	98.
	91. 100.0 1.0 20.0 0.54 5.0					
106. AG	3. Traveler/Front WB *	4688.8	1474.4	4803.2	1442.0 *	119.
	155. 100.0 1.0 20.0 0.63 6.0					
200. AG	4. Traveler/Front NB *	4659.8	1420.6	4630.7	1341.7 *	84.
	440. 100.0 1.0 50.0 0.50 4.3					
20. AG	5. EastBerk/Al bany SB *	4245.4	1211.3	4286.9	1325.9 *	122.
	215. 100.0 1.0 30.0 0.57 6.2					
109. AG	6. EastBerk/Al bany WB *	4263.2	1180.7	4399.2	1132.7 *	144.
	124. 100.0 1.0 20.0 0.66 7.3					
202. AG	7. EastBerk/Front NB LL*	4434.8	1106.4	4408.0	1038.9 *	73.
	143. 100.0 1.0 20.0 0.34 3.7					
200. AG	8. EastBerk/Front NB TT*	4456.3	1097.2	4393.6	926.8 *	182.
	143. 100.0 1.0 20.0 0.81 9.2					
109. AG	9. EastBerk/Front WB *	4492.9	1109.6	4557.6	1086.9 *	69.
	186. 100.0 1.0 30.0 0.31 3.5					
15. AG	10. Heral d/Al bany SB *	4576.3	2268.9	4616.5	2416.1 *	153.
	200. 100.0 1.0 30.0 0.77 7.8					
284. AG	11. Heral d/Al bany EB *	4525.0	2254.4	4381.9	2290.8 *	148.
	200. 100.0 1.0 30.0 0.75 7.5					
284. AG	12. Heral dDr/Al bany EB *	4483.3	2089.7	4481.4	2090.1 *	2.
	78. 100.0 1.0 10.0 0.01 0.1					
285. AG	13. Heral d/Al bany West *	4565.2	2240.8	4160.3	2352.7 *	420.
	1620. 9.1 1.0 54.0					
17. AG	14. Heral d/Al bany North *	4565.2	2240.8	4645.3	2496.2 *	268.
	1675. 9.1 1.0 54.0					
195. AG	15. Heral d/Al bany South *	4565.2	2240.8	4493.6	1982.5 *	268.
	3295. 9.1 1.0 66.0					
287. AG	16. Traveler/Front West *	4672.3	1463.7	4536.9	1504.2 *	141.
	1485. 9.1 1.0 66.0					
17. AG	17. Traveler/Front North*	4672.3	1463.7	4707.1	1579.7 *	121.
	2290. 9.1 1.0 42.0					
105. AG	18. Traveler/Front East *	4672.3	1463.7	4779.6	1434.3 *	111.
	1860. 9.1 1.0 66.0					
	19. Traveler/Front South*	4672.3	1463.7	4625.5	1314.5 *	156.

197. AG	1165. 9.1 1.0 66.0	4237.4	1189.1	4008.5	1261.2 *	240.
	20. EastBerk/Al bany West*					
287. AG	1220. 9.1 1.0 54.0	4237.4	1189.1	4312.7	1388.3 *	213.
	21. EastBerk/Al bany Nort*					
21. AG	1135. 9.1 1.0 54.0	4237.4	1189.1	4363.5	1140.4 *	135.
	22. EastBerk/Al bany East*					
111. AG	1035. 9.1 1.0 54.0	4237.4	1189.1	4177.4	998.3 *	200.
	23. EastBerk/Al bany Sout*					
197. AG	950. 9.1 1.0 54.0	4451.5	1115.0	4363.5	1140.4 *	92.
	24. EastBerk/Front West *					
286. AG	1035. 9.1 1.0 54.0	4451.5	1115.0	4491.4	1253.1 *	144.
	25. EastBerk/Front North*					
16. AG	1170. 9.1 1.0 54.0	4451.5	1115.0	4657.1	1037.7 *	220.
	26. EastBerk/Front East *					
111. AG	1060. 9.1 1.0 66.0	4451.5	1114.9	4392.1	968.8 *	158.
	27. EastBerk/Front South*					
202. AG	1855. 9.1 1.0 54.0	4521.4	2077.1	4389.1	2111.3 *	137.
	28. Heral dDr/Al bany West*					
284. AG	5. 9.1 1.0 30.0	4521.4	2073.4	4551.9	2171.5 *	103.
	29. Heral dDr/Al bany Nort*					
17. AG	3295. 9.1 1.0 66.0	4521.4	2074.2	4485.0	1955.3 *	124.
	30. Heral dDr/Al bany Sout*					
197. AG	2345. 9.1 1.0 54.0					

JOB: HERALD SQUARE

RUN: 2016BD

DATE : 1/13/12  
 TIME : 13:32:46

ADDITIONAL QUEUE LINK PARAMETERS

IDLE	LINK DESCRIPTION	* CYCLE	RED	CLEARANCE	APPROACH	SATURATION
EM FAC	SIGNAL ARRIVAL	* LENGTH	TIME	LOST TIME	VOL	FLOW RATE
(gm/hr)	TYPE RATE	(SEC)	(SEC)	(SEC)	(VPH)	(VPH)
49.70	1. Traveler/Front EB LL*	100	76	3.0	435	1600
	1 3					
49.74	2. Traveler/Front EB TT*	100	34	3.0	1050	1600
	1 3					
49.74	3. Traveler/Front WB *	100	58	3.0	750	1600
	1 3					
49.70	4. Traveler/Front NB *	100	66	3.0	1165	1600
	1 3					
49.74	5. EastBerk/Al bany SB *	110	59	3.0	1135	1600
	1 3					
49.70	6. EastBerk/Al bany WB *	110	51	3.0	1035	1600
	1 3					
49.74	7. EastBerk/Front NB LL*	110	59	3.0	450	1600
	1 3					
49.74	8. EastBerk/Front NB TT*	110	59	3.0	1085	1600
	1 3					
49.74	9. EastBerk/Front WB *	110	51	3.0	740	1600
	1 3					
49.74	10. Heral d/Al bany SB *	100	50	3.0	1675	1600
	1 3					
49.74	11. Heral d/Al bany EB *	100	50	3.0	1620	1600
	1 3					

2016BD\_2\_new.out  
 49.74 1 3  
 12. Heral dDr/Al bany EB \* 120 70 3.0 5 1600  
 49.74 1 3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. EastBerk/Front NE1	4539.9	1287.5	6.0
2. EastBerk/Front NE2	4519.0	1215.4	6.0
3. EastBerk/Front NE3	4498.2	1143.3	6.0
4. EastBerk/Front NE4	4568.4	1116.9	6.0
5. EastBerk/Front NE5	4638.6	1090.6	6.0
6. EastBerk/Front SE1	4610.4	1009.3	6.0
7. EastBerk/Front SE2	4540.1	1035.7	6.0
8. EastBerk/Front SE3	4470.0	1062.1	6.0
9. EastBerk/Front SE4	4441.7	992.6	6.0
10. EastBerk/Front SE5	4413.5	923.1	6.0
11. EastBerk/Front SW1	4345.8	953.1	6.0
12. EastBerk/Front SE2	4374.2	1022.9	6.0
13. EastBerk/Front SE3	4401.8	1090.8	6.0
14. EastBerk/Front SE4	4339.7	1109.9	6.0
15. EastBerk/Front SE5	4269.6	1137.0	6.0
16. EastBerk/Front NW1	4284.7	1210.5	6.0
17. EastBerk/Front NW2	4354.7	1183.5	6.0
18. EastBerk/Front NW3	4426.2	1160.8	6.0
19. EastBerk/Front NW4	4447.0	1232.8	6.0
20. EastBerk/Front NW5	4467.9	1304.9	6.0
21. EastBerk/Al bany NE1	4338.0	1350.7	6.0
22. EastBerk/Al bany NE2	4311.5	1280.6	6.0
23. EastBerk/Al bany NE3	4285.0	1210.4	6.0
24. EastBerk/Al bany NE4	4355.0	1183.4	6.0
25. EastBerk/Al bany NE5	4426.5	1160.7	6.0
26. EastBerk/Al bany SE1	4402.4	1090.7	6.0
27. EastBerk/Al bany SE2	4330.8	1113.4	6.0
28. EastBerk/Al bany SE3	4260.9	1140.4	6.0
29. EastBerk/Al bany SE4	4238.4	1068.8	6.0
30. EastBerk/Al bany SE5	4215.8	997.3	6.0
31. EastBerk/Al bany SW1	4146.0	1021.8	6.0
32. EastBerk/Al bany SW2	4168.5	1093.4	6.0
33. EastBerk/Al bany SW3	4191.0	1164.9	6.0

JOB: HERALD SQUARE PAGE 3 RUN: 2016BD

DATE : 1/13/12  
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RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
34. EastBerk/Al bany SW4	4119.5	1187.4	6.0
35. EastBerk/Al bany SW5	4047.9	1209.9	6.0
36. EastBerk/Al bany NW1	4072.1	1279.9	6.0
37. EastBerk/Al bany NW2	4143.6	1257.4	6.0
38. EastBerk/Al bany NW3	4215.1	1234.9	6.0
39. EastBerk/Al bany NW4	4241.7	1305.1	6.0
40. EastBerk/Al bany NW5	4268.2	1375.2	6.0

2016BD\_2\_new.out  
 ♀ JOB: HERALD SQUARE PAGE 4 RUN: 2016BD

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND \* CONCENTRATION  
 ANGLE \* (PPM)  
 (DEGR)\* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12  
 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20

0.	*	0.3	0.2	0.3	0.2	0.3	0.3	0.5	0.7	1.3	1.2	0.2	0.2
0.3	0.5	0.9	0.7	0.0	0.0	0.1	0.2						
10.	*	0.2	0.1	0.2	0.5	0.4	0.3	0.5	0.6	1.0	1.0	0.3	0.3
0.5	0.5	0.8	0.6	0.1	0.2	0.1	0.2						
20.	*	0.3	0.4	0.4	0.5	0.1	0.4	0.7	0.7	0.8	1.0	0.5	0.4
0.4	0.4	0.7	0.4	0.0	0.1	0.1	0.2						
30.	*	0.5	0.6	0.4	0.2	0.0	0.2	0.4	0.6	0.5	0.5	0.8	0.8
0.6	0.5	0.5	0.1	0.0	0.4	0.2	0.1						
40.	*	1.0	0.6	0.3	0.0	0.0	0.2	0.2	0.6	0.3	0.2	1.0	1.2
0.7	0.6	0.4	0.0	0.1	0.5	0.5	0.2						
50.	*	0.8	0.4	0.1	0.0	0.0	0.2	0.3	0.6	0.2	0.1	0.9	1.3
0.9	0.7	0.6	0.0	0.1	0.5	0.6	0.5						
60.	*	0.6	0.1	0.0	0.0	0.0	0.1	0.3	0.6	0.2	0.1	0.8	1.1
1.0	0.7	0.8	0.1	0.2	0.4	0.6	0.6						
70.	*	0.3	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.1	0.0	0.6	1.1
1.2	0.4	0.7	0.1	0.2	0.3	0.3	0.5						
80.	*	0.2	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.1	0.0	0.4	1.0
1.3	0.7	0.7	0.1	0.1	0.3	0.2	0.3						
90.	*	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.0	0.0	0.3	0.7
1.5	0.7	0.8	0.1	0.1	0.3	0.3	0.1						
100.	*	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.2	0.6
1.2	0.8	0.8	0.1	0.2	0.5	0.3	0.0						
110.	*	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.2	0.7
1.3	0.6	0.6	0.6	0.4	0.6	0.3	0.0						
120.	*	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.7
1.2	0.5	0.4	0.9	0.6	0.9	0.3	0.0						
130.	*	0.0	0.0	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.6
1.0	0.4	0.2	0.9	0.9	1.0	0.4	0.0						
140.	*	0.0	0.1	0.7	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.6
1.1	0.4	0.2	1.0	1.0	0.7	0.5	0.1						
150.	*	0.0	0.1	0.7	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.6
1.2	0.3	0.2	0.8	0.9	0.9	0.5	0.2						
160.	*	0.1	0.2	0.7	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5
1.1	0.2	0.0	0.8	1.0	1.1	0.6	0.4						
170.	*	0.2	0.2	0.7	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4
1.0	0.2	0.0	0.6	0.8	1.2	0.7	0.5						
180.	*	0.2	0.3	0.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.3
0.9	0.0	0.0	0.4	0.7	1.1	0.9	0.5						
190.	*	0.5	0.5	0.6	0.3	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.1
0.6	0.0	0.0	0.5	0.5	1.1	0.7	0.5						
200.	*	0.6	0.6	0.8	0.5	0.3	0.0	0.0	0.3	0.1	0.0	0.0	0.1



2016BD\_2\_new.out

0.4	0.3	0.2	0.0	0.0	0.0	0.1	0.1							
320.	*	0.3	0.8	0.8	0.3	0.2	0.8	0.8	0.6	0.3	0.3	0.0	0.1	
0.4	0.3	0.2	0.0	0.0	0.0	0.1	0.1							
330.	*	0.2	0.7	0.8	0.3	0.1	0.8	0.8	0.8	0.5	0.4	0.1	0.1	
0.4	0.3	0.3	0.0	0.0	0.0	0.1	0.1							
340.	*	0.2	0.6	0.8	0.2	0.0	0.6	0.8	0.8	0.4	0.4	0.1	0.2	
0.3	0.3	0.3	0.0	0.0	0.0	0.1	0.1							
350.	*	0.2	0.4	0.8	0.1	0.0	0.4	0.7	1.0	0.6	0.4	0.1	0.2	
0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.1							
360.	*	0.2	0.3	0.7	0.0	0.0	0.3	0.6	1.0	0.7	0.6	0.1	0.2	
0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.1							

-----\*

MAX	*	0.9	1.0	1.0	1.0	1.2	1.5	0.8	1.0	0.7	0.6	0.7	0.7	
1.0	0.8	0.7	0.6	0.8	1.4	1.2	1.0							
DEGR.	*	220	250	140	140	170	90	80	0	0	0	40	50	
30	90	90	110	130	120	140	170							

THE HIGHEST CONCENTRATION OF 1.60 PPM OCCURRED AT RECEPTOR REC8 .

# Microscale Results

# Carbon Monoxide (CO)



**Pollutant: Carbon Monoxide (CO)**

**Concentrations: 1-Hour Final**

Background (ppm) 3  
 Persistence Factor -  
 Garage 0.007

	Receptor	With Parking Garage					
		2011 EX	2016 NB	2016 BD	2011 EX	2016 NB	2016 BD
Herald Street at Albany Street	E 1	4.5	4.4	4.4	4.5	4.4	4.4
	E 2	4.5	4.4	4.4	4.5	4.4	4.4
	E 3	4.6	4.5	4.6	4.6	4.5	4.6
	E 4	5	4.9	5	5.0	4.9	5.0
	E 5	5.1	4.8	4.9	5.1	4.8	4.9
	SW 1	4.9	4.7	4.8	4.9	4.7	4.8
	SW 2	4.8	4.7	4.7	4.8	4.7	4.7
	SW 3	4.9	4.7	4.7	4.9	4.7	4.7
	SW 4	4.5	4.3	4.4	4.5	4.3	4.4
	SW 5	4.3	4.2	4.2	4.3	4.2	4.2
	NW 1	4.7	4.6	4.6	4.7	4.6	4.6
	NW 2	4.9	4.6	4.6	4.9	4.6	4.6
	NW 3	4.9	4.9	4.8	4.9	4.9	4.8
	NW 4	4.7	4.6	4.5	4.7	4.6	4.5
	NW 5	4.4	4.5	4.4	4.4	4.5	4.4
Herald Drive at Albany Street	E 1	4.8	4.7	4.7	4.8	4.7	4.7
	E 2	4.9	4.7	4.8	4.9	4.7	4.8
	E 3	5.2	5	5	5.2	5.0	5.0
	E 4	5.1	5.1	5.1	5.1	5.1	5.1
	E 5	4.7	4.6	4.7	4.7	4.6	4.7
	SW 1	4.4	4.3	4.4	4.4	4.3	4.4
	SW 2	5.2	5	5	5.2	5.0	5.0
	SW 3	5.2	5	5.1	5.2	5.0	5.1
	SW 4	3.8	3.7	3.8	3.8	3.7	3.8
	SW 5	3.7	3.6	3.6	3.7	3.6	3.6
	NW 1	3.6	3.6	3.6	3.6	3.6	3.6
	NW 2	3.8	3.8	3.8	3.8	3.8	3.8
	NW 3	4.7	4.6	4.7	4.7	4.6	4.7
	NW 4	5	4.8	4.8	5.0	4.8	4.8
	NW 5	5.6	5.2	5.2	5.6	5.2	5.2
Traveler Street at Front Street	NE 1	3.9	4	3.8	3.9	4.0	3.8
	NE 2	4.2	4.2	4.2	4.2	4.2	4.2
	NE 3	4.8	4.7	4.7	4.8	4.7	4.7
	NE 4	4.4	4.3	4.4	4.4	4.3	4.4
	NE 5	4	3.8	4	4.0	3.8	4.0
	SE 1	3.8	3.6	3.8	3.8	3.6	3.8
	SE 2	4.1	4	4.1	4.1	4.0	4.1
	SE 3	4.3	4.1	4.4	4.3	4.1	4.4
	SE 4	4.2	4	4.8	4.2	4.0	4.8
	SE 5	4.1	3.8	4.1	4.1	3.8	4.1
	SW 1	4	3.9	4.1	4.0	3.9	4.1
	SW 2	4	3.9	4.7	4.0	3.9	4.7
	SW 3	4.3	4.2	4.4	4.3	4.2	4.4
	SW 4	4.5	4.2	4.3	4.5	4.2	4.3
	SW 5	3.9	3.8	3.9	3.9	3.8	3.9

East Berkeley at Front Street	NE	1	3.8	3.9	4	3.8	3.9	4.0
	NE	2	4	3.9	3.8	4.0	3.9	3.8
	NE	3	4.3	4.4	4.2	4.3	4.4	4.2
	NE	4	5	4.9	4.2	5.0	4.9	4.2
	NE	5	4.1	3.9	3.8	4.1	3.9	3.8
	SE	1	4	3.9	3.7	4.0	3.9	3.7
	SE	2	4.7	4.5	4	4.7	4.5	4.0
	SE	3	4.7	4.6	4.6	4.7	4.6	4.6
	SE	4	4.5	4.5	4.6	4.5	4.5	4.6
	SE	5	4.3	4.2	4.2	4.3	4.2	4.2
	SW	1	4.2	4.1	4	4.2	4.1	4.0
	SW	2	4.4	4.4	4.3	4.4	4.4	4.3
	SW	3	4.8	4.7	4.5	4.8	4.7	4.5
	SW	4	4.1	4	3.8	4.1	4.0	3.8
	SW	5	4.2	4	3.9	4.2	4.0	3.9
	NW	1	4.2	4.2	4	4.2	4.2	4.0
	NW	2	4.1	3.9	4	4.1	3.9	4.0
	NW	3	4.4	4.4	4.2	4.4	4.4	4.2
	NW	4	4.2	4.2	3.9	4.2	4.2	3.9
	NW	5	3.8	3.8	3.6	3.8	3.8	3.6
East Berkeley at Albany Street	NE	1	3.9	3.9	3.9	3.9	3.9	3.9
	NE	2	4.1	4	4	4.1	4.0	4.0
	NE	3	4.2	4.2	4	4.2	4.2	4.0
	NE	4	4.1	3.9	4	4.1	3.9	4.0
	NE	5	4.4	4.4	4.2	4.4	4.4	4.2
	SE	1	4.8	4.7	4.5	4.8	4.7	4.5
	SE	2	4.1	4	3.8	4.1	4.0	3.8
	SE	3	4.2	4.1	4	4.2	4.1	4.0
	SE	4	3.8	3.7	3.7	3.8	3.7	3.7
	SE	5	3.6	3.6	3.6	3.6	3.6	3.6
	SW	1	3.8	3.7	3.7	3.8	3.7	3.7
	SW	2	3.7	3.7	3.7	3.7	3.7	3.7
	SW	3	4.1	4	4	4.1	4.0	4.0
	SW	4	3.9	3.9	3.8	3.9	3.9	3.8
	SW	5	3.9	3.9	3.7	3.9	3.9	3.7
	NW	1	3.8	3.8	3.6	3.8	3.8	3.6
	NW	2	4	4	3.8	4.0	4.0	3.8
	NW	3	4.7	4.5	4.4	4.7	4.5	4.4
	NW	4	4.6	4.3	4.2	4.6	4.3	4.2
	NW	5	4	4.2	4	4.0	4.2	4.0

**Pollutant: Carbon Monoxide (CO)**

**Concentrations: 8-Hour Final**

Background (ppm)	2.1
Persistence Factor	0.7
Garage	0.007

	Receptor	With parking garage					
		2011 EX	2016 NB	2016 BD	2011 EX	2016 NB	2016 BD
Herald Street at Albany Street	E 1	3.2	3.1	3.1	3.2	3.1	3.1
	E 2	3.2	3.1	3.1	3.2	3.1	3.1
	E 3	3.2	3.2	3.2	3.2	3.2	3.2
	E 4	3.5	3.4	3.5	3.5	3.4	3.5
	E 5	3.6	3.4	3.4	3.6	3.4	3.4
	SW 1	3.4	3.3	3.4	3.4	3.3	3.4
	SW 2	3.4	3.3	3.3	3.4	3.3	3.3
	SW 3	3.4	3.3	3.3	3.4	3.3	3.3
	SW 4	3.2	3.0	3.1	3.2	3.0	3.1
	SW 5	3.0	2.9	2.9	3.0	2.9	2.9
	NW 1	3.3	3.2	3.2	3.3	3.2	3.2
	NW 2	3.4	3.2	3.2	3.4	3.2	3.2
	NW 3	3.4	3.4	3.4	3.4	3.4	3.4
	NW 4	3.3	3.2	3.2	3.3	3.2	3.2
	NW 5	3.1	3.2	3.1	3.1	3.2	3.1
Herald Drive at Albany Street	E 1	3.4	3.3	3.3	3.4	3.3	3.3
	E 2	3.4	3.3	3.4	3.4	3.3	3.4
	E 3	3.6	3.5	3.5	3.6	3.5	3.5
	E 4	3.6	3.6	3.6	3.6	3.6	3.6
	E 5	3.3	3.2	3.3	3.3	3.2	3.3
	SW 1	3.1	3.0	3.1	3.1	3.0	3.1
	SW 2	3.6	3.5	3.5	3.6	3.5	3.5
	SW 3	3.6	3.5	3.6	3.6	3.5	3.6
	SW 4	2.7	2.6	2.7	2.7	2.6	2.7
	SW 5	2.6	2.5	2.5	2.6	2.5	2.5
	NW 1	2.5	2.5	2.5	2.5	2.5	2.5
	NW 2	2.7	2.7	2.7	2.7	2.7	2.7
	NW 3	3.3	3.2	3.3	3.3	3.2	3.3
	NW 4	3.5	3.4	3.4	3.5	3.4	3.4
	NW 5	3.9	3.6	3.6	3.9	3.6	3.6
Traveler Street at Front Street	NE 1	2.7	2.8	2.7	2.7	2.8	2.7
	NE 2	2.9	2.9	2.9	2.9	2.9	2.9
	NE 3	3.4	3.3	3.3	3.4	3.3	3.3
	NE 4	3.1	3.0	3.1	3.1	3.0	3.1
	NE 5	2.8	2.7	2.8	2.8	2.7	2.8
	SE 1	2.7	2.5	2.7	2.7	2.5	2.7
	SE 2	2.9	2.8	2.9	2.9	2.8	2.9
	SE 3	3.0	2.9	3.1	3.0	2.9	3.1
	SE 4	2.9	2.8	3.4	2.9	2.8	3.4
	SE 5	2.9	2.7	2.9	2.9	2.7	2.9
	SW 1	2.8	2.7	2.9	2.8	2.7	2.9
	SW 2	2.8	2.7	3.3	2.8	2.7	3.3
	SW 3	3.0	2.9	3.1	3.0	2.9	3.1
	SW 4	3.2	2.9	3.0	3.2	2.9	3.0
	SW 5	2.7	2.7	2.7	2.7	2.7	2.7

East Berkeley at Front Street	NE	1	2.7	2.7	2.8	2.7	2.7	2.8
	NE	2	2.8	2.7	2.7	2.8	2.7	2.7
	NE	3	3.0	3.1	2.9	3.0	3.1	2.9
	NE	4	3.5	3.4	2.9	3.5	3.4	2.9
	NE	5	2.9	2.7	2.7	2.9	2.7	2.7
	SE	1	2.8	2.7	2.6	2.8	2.7	2.6
	SE	2	3.3	3.2	2.8	3.3	3.2	2.8
	SE	3	3.3	3.2	3.2	3.3	3.2	3.2
	SE	4	3.2	3.2	3.2	3.2	3.2	3.2
	SE	5	3.0	2.9	2.9	3.0	2.9	2.9
	SW	1	2.9	2.9	2.8	2.9	2.9	2.8
	SW	2	3.1	3.1	3.0	3.1	3.1	3.0
	SW	3	3.4	3.3	3.2	3.4	3.3	3.2
	SW	4	2.9	2.8	2.7	2.9	2.8	2.7
	SW	5	2.9	2.8	2.7	2.9	2.8	2.7
	NW	1	2.9	2.9	2.8	2.9	2.9	2.8
	NW	2	2.9	2.7	2.8	2.9	2.7	2.8
	NW	3	3.1	3.1	2.9	3.1	3.1	2.9
	NW	4	2.9	2.9	2.7	2.9	2.9	2.7
	NW	5	2.7	2.7	2.5	2.7	2.7	2.5
East Berkeley at Albany Street	NE	1	2.7	2.7	2.7	2.7	2.7	2.7
	NE	2	2.9	2.8	2.8	2.9	2.8	2.8
	NE	3	2.9	2.9	2.8	2.9	2.9	2.8
	NE	4	2.9	2.7	2.8	2.9	2.7	2.8
	NE	5	3.1	3.1	2.9	3.1	3.1	2.9
	SE	1	3.4	3.3	3.2	3.4	3.3	3.2
	SE	2	2.9	2.8	2.7	2.9	2.8	2.7
	SE	3	2.9	2.9	2.8	2.9	2.9	2.8
	SE	4	2.7	2.6	2.6	2.7	2.6	2.6
	SE	5	2.5	2.5	2.5	2.5	2.5	2.5
	SW	1	2.7	2.6	2.6	2.7	2.6	2.6
	SW	2	2.6	2.6	2.6	2.6	2.6	2.6
	SW	3	2.9	2.8	2.8	2.9	2.8	2.8
	SW	4	2.7	2.7	2.7	2.7	2.7	2.7
	SW	5	2.7	2.7	2.6	2.7	2.7	2.6
	NW	1	2.7	2.7	2.5	2.7	2.7	2.5
	NW	2	2.8	2.8	2.7	2.8	2.8	2.7
	NW	3	3.3	3.2	3.1	3.3	3.2	3.1
	NW	4	3.2	3.0	2.9	3.2	3.0	2.9
	NW	5	2.8	2.9	2.8	2.8	2.9	2.8

# Mesoscale Results

# Oxides of Nitrogen (NO<sub>x</sub>)

# Herald Square, Boston MA

## NOx Emissions Inventory in Kilograms per Day

<u>Pollutant</u>	<u>2011 Existing Condition</u>	<u>2016 No Build Condition</u>	<u>2016 Build Condition</u>	<u>2016 Build with Mitigation Condition</u>
Oxides of Nitrogen (NOx)	4,316.1	2,239.5	2,240.79	2,240.75
Project Emission			1.3	-
Difference with Build Condition				(0.04)
Percent Reduction from Mitigation				-2.9%

**Herald Square, Boston MA**  
**2016 Build with Mitigation Condition**

Link No.	Description	Roadway		Seasonal	VMT Peak	PEAK PERIOD			OFF-PEAK PERIOD			
		Link Length	Type	Adjusted		Speed Peak	E.M.F. Nox	Emissions Nox	VMT Off-Peak	Speed Off-Peak	E.M.F. Nox	Emissions Nox
				Volume (vehicles)								
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	19,118	3,953	20	0.41	1.63	3,886	30	0.37	1.45
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	8,665	1,354	20	0.41	0.56	1,332	30	0.37	0.50
3	Washington Street - between Herald Street and Mass Ave	2	0.97	8,665	4,238	20	0.41	1.75	4,167	30	0.37	1.55
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	19,118	771	20	0.41	0.32	758	30	0.37	0.28
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	5,311	1,178	20	0.41	0.49	1,158	30	0.37	0.43
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	9,098	275	20	0.41	0.11	271	30	0.37	0.10
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	20,262	1,022	20	0.41	0.42	1,004	30	0.37	0.37
8	Albany Street - north of Herald Street	2	0.21	21,491	2,276	20	0.41	0.94	2,237	30	0.37	0.83
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	41,753	632	20	0.41	0.26	621	30	0.37	0.23
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	29,784	1,652	20	0.41	0.68	1,624	30	0.37	0.60
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	14,360	507	20	0.41	0.21	498	30	0.37	0.19
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	12,143	1,286	20	0.41	0.53	1,264	30	0.37	0.47
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	20,367	822	20	0.41	0.34	808	30	0.37	0.30
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	14,753	595	20	0.41	0.25	585	30	0.37	0.22
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	23,665	6,325	20	0.41	2.61	6,218	30	0.37	2.31
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,544	125	20	0.41	0.05	123	30	0.37	0.05
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,828	74	20	0.41	0.03	73	30	0.37	0.03
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	8,337	420	20	0.41	0.17	413	30	0.37	0.15
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	15,181	765	20	0.41	0.32	753	30	0.37	0.28
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	19,022	575	20	0.41	0.24	566	30	0.37	0.21
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	13,279	335	20	0.41	0.14	329	30	0.37	0.12
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	23,553	2,494	20	0.41	1.03	2,452	30	0.37	0.91
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	13,422	1,692	20	0.41	0.70	1,663	30	0.37	0.62
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	11,700	4,779	20	0.41	1.97	4,698	30	0.37	1.75
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	8,851	357	20	0.41	0.15	351	30	0.37	0.13
26	East Berkeley Street - west of Harrison Ave	2	0.30	12,842	1,943	20	0.41	0.80	1,910	30	0.37	0.71
27	Site Drive North - Albany Street	2	0.02	123	1	20	0.41	0.00	1	30	0.37	0.00
28	Site Drive South - Harrison Ave	2	0.02	982	10	20	0.41	0.00	10	30	0.37	0.00
29	Site Drive -Traveler Street	2	0.02	4,945	50	20	0.41	0.02	49	30	0.37	0.02
30	Site Drive - No Data	2	0.02	0	0	20	0.41	0.00	0	30	0.37	0.00
31	I-90 - west of 93	1	1.41	1,104,154	785,040	55	0.49	387.02	771,817	65	0.57	437.62
32	I-90 - east of 93	1	1.22	494,018	303,910	55	0.49	149.83	298,791	65	0.57	169.41
33	I-93 - north of 90	1	1.38	1,108,754	771,538	55	0.49	380.37	758,542	65	0.57	430.09
34	I-93 - south of 90	1	0.80	594,225	239,709	55	0.49	118.18	235,671	65	0.57	133.63

**Mesoscale Emissions**  
**(kilograms/day)**

**2240.8**

**Peak Emissions Inventory**

<b>VMT Emissions (kg/day)</b>	<b>Nox</b>
VMT = 2,140,704	<b>1052.1</b>

**Off-Peak Emissions Inventory**

<b>VMT Emissions (kg/day)</b>	<b>Nox</b>
VMT = 2,104,644	<b>1185.6</b>

<b>Idle Emissions (kg/day)</b>	<b>Nox</b>
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**1.6**

<b>Idle Emissions (kg/day)</b>	<b>Nox</b>
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**1.5**



**Herald Square, Boston MA**  
**2016 Build with Mitigation Condition**

Nox No.	Description	Seasonally		Peak	Peak Traffic Data			Off-Peak Traffic Data		
		AADT (veh/day)	Adjusted ADT (veh/day)	Period Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	19,118	19,118	0.50	9,640	29.1	280,052	9,478	26.15	247,801
2	Washington Street - between Herald Street and Kneeland Street	8,665	8,665	0.50	4,369	5.6	24,249	4,296	5.00	21,457
3	Washington Street - between Herald Street and Mass Ave	8,665	8,665	0.50	4,369	6.9	29,929	4,296	6.17	26,482
4	Herald Street - between Washington Street and Harrison Ave	19,118	19,118	0.50	9,640	18.9	182,202	9,478	17.01	161,220
5	Harrison Ave - between Herald Street and Kneeland Street	5,311	5,311	0.50	2,678	13.8	36,823	2,633	12.38	32,582
6	Harrison Ave - between Herald Street and Traveler Street	9,098	9,098	0.50	4,588	16.4	75,010	4,510	14.72	66,372
7	Herald Street - between Harrison Ave and Albany Street	20,262	20,262	0.50	10,217	60.0	613,021	10,045	54.00	542,426
8	Albany Street - north of Herald Street	21,491	21,491	0.50	10,837	14.5	157,133	10,654	13.05	139,038
9	Albany Street - between Herald Street and I-93 SB On-ramp	41,753	41,753	0.50	21,054	2.3	47,371	20,699	2.03	41,916
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	29,784	29,784	0.50	15,018	13.0	194,488	14,765	11.66	172,091
11	Albany Street between Traveler Street and East Berkeley Street	14,360	14,360	0.50	7,241	11.4	82,545	7,119	10.26	73,039
12	Albany Street - between East Berkeley Street and Albany Street	12,143	12,143	0.50	6,123	0.0	0	6,020	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	20,367	20,367	0.50	10,270	0.0	0	10,097	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,753	14,753	0.50	7,439	16.6	123,492	7,314	14.94	109,271
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	23,665	23,665	0.50	11,933	60.0	715,994	11,732	54.00	633,540
16	Mullins Way - between Washington Street and Harrison Ave	3,544	3,544	0.50	1,787	7.3	12,956	1,757	6.53	11,464
17	Traveler Street - between Washington Street and Harrison Ave	1,828	1,828	0.50	922	0.0	0	906	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	8,337	8,337	0.50	4,204	33.3	139,990	4,133	29.97	123,868
19	East Berkeley Street - between Harrison Ave and Albany Street	15,181	15,181	0.50	7,655	21.5	164,197	7,526	19.31	145,288
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	19,022	19,022	0.50	9,592	6.0	57,070	9,430	5.36	50,498
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	13,279	13,279	0.50	6,696	5.4	35,824	6,583	4.82	31,698
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	23,553	23,553	0.50	11,876	0.0	0	11,676	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	13,422	13,422	0.50	6,768	19.3	130,618	6,654	17.37	115,576
24	Harrison Ave- between East Berkeley Street and Mass. Ave	11,700	11,700	0.50	5,900	17.6	103,836	5,800	15.84	91,878
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,851	8,851	0.50	4,463	0.0	0	4,388	0.00	0
26	East Berkeley Street - west of Harrison Ave	12,842	12,842	0.50	6,475	0.0	0	6,366	0.00	0
27	Site Drive North - Albany Street	123	123	0.50	62	7.4	455	61	6.62	402
28	Site Drive South - Harrison Ave	982	982	0.50	495	4.7	2,327	487	4.23	2,059
29	Site Drive -Traveler Street	4,945	4,945	0.50	2,494	28.2	70,321	2,452	25.38	62,222
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,104,154	1,104,154	0.50	556,766	0.0	0	547,388	0.00	0
32	I-90 - east of 93	494,018	494,018	0.50	249,107	0.0	0	244,911	0.00	0
33	I-93 - north of 90	1,108,754	1,108,754	0.50	559,086	0.0	0	549,668	0.00	0
34	I-93 - south of 90	594,225	594,225	0.50	299,636	0.0	0	294,589	0.00	0

Freeway	0	0
Arterial	3,279,901	2,902,187

**Idle Emission Parameters**

Pollutant	Peak Period Emissions			Off-Peak Period Emissions			
	(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)	
Freeway	Nox	0.0005	0	0.00	0.0005	0	0.00
Arterial	Nox	0.0005	1.645	1.64	0.0005	1.455	1.46
Total			1.64				1.45

## Herald Square, Boston MA

### 2016 Build Condition

Link No.	Description	Seasonal			PEAK PERIOD			OFF-PEAK PERIOD				
		Roadway	Adjusted	VMT	Speed	E.M.F.	Emissions	VMT	Speed	E.M.F.	Emissions	
		Link Length	Volume	Peak	Peak	Nox	Nox	Off-Peak	Off-Peak	Nox	Nox	
Type	(miles)	(vehicles)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)		
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	19,122	3,953	20	0.41	1.63	3,887	30	0.37	1.45
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	8,675	1,356	20	0.41	0.56	1,333	30	0.37	0.50
3	Washington Street - between Herald Street and Mass Ave	2	0.97	8,675	4,243	20	0.41	1.75	4,171	30	0.37	1.55
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	19,122	771	20	0.41	0.32	758	30	0.37	0.28
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	5,319	1,180	20	0.41	0.49	1,160	30	0.37	0.43
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	9,118	276	20	0.41	0.11	271	30	0.37	0.10
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	20,262	1,022	20	0.41	0.42	1,004	30	0.37	0.37
8	Albany Street - north of Herald Street	2	0.21	21,528	2,280	20	0.41	0.94	2,241	30	0.37	0.83
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	41,790	632	20	0.41	0.26	622	30	0.37	0.23
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	29,823	1,654	20	0.41	0.68	1,626	30	0.37	0.60
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	14,373	507	20	0.41	0.21	499	30	0.37	0.19
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	12,157	1,287	20	0.41	0.53	1,266	30	0.37	0.47
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	20,389	822	20	0.41	0.34	809	30	0.37	0.30
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	14,753	595	20	0.41	0.25	585	30	0.37	0.22
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	23,681	6,329	20	0.41	2.61	6,222	30	0.37	2.31
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,546	125	20	0.41	0.05	123	30	0.37	0.05
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,836	74	20	0.41	0.03	73	30	0.37	0.03
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	8,421	425	20	0.41	0.17	417	30	0.37	0.16
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	15,196	766	20	0.41	0.32	753	30	0.37	0.28
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	19,059	577	20	0.41	0.24	567	30	0.37	0.21
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	13,297	335	20	0.41	0.14	330	30	0.37	0.12
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	23,555	2,494	20	0.41	1.03	2,452	30	0.37	0.91
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	13,424	1,692	20	0.41	0.70	1,664	30	0.37	0.62
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	11,714	4,784	20	0.41	1.97	4,704	30	0.37	1.75
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	8,865	358	20	0.41	0.15	352	30	0.37	0.13
26	East Berkeley Street - west of Harrison Ave	2	0.30	12,854	1,944	20	0.41	0.80	1,912	30	0.37	0.71
27	Site Drive North - Albany Street	2	0.02	127	1	20	0.41	0.00	1	30	0.37	0.00
28	Site Drive South - Harrison Ave	2	0.02	1,013	10	20	0.41	0.00	10	30	0.37	0.00
29	Site Drive -Traveler Street	2	0.02	5,103	51	20	0.41	0.02	51	30	0.37	0.02
30	Site Drive - No Data	2	0.02	0	0	20	0.41	0.00	0	30	0.37	0.00
31	I-90 - west of 93	1	1.41	1,104,154	785,040	55	0.49	387.02	771,817	65	0.57	437.62
32	I-90 - east of 93	1	1.22	494,018	303,910	55	0.49	149.83	298,791	65	0.57	169.41
33	I-93 - north of 90	1	1.38	1,108,754	771,538	55	0.49	380.37	758,542	65	0.57	430.09
34	I-93 - south of 90	1	0.80	594,225	239,709	55	0.49	118.18	235,671	65	0.57	133.63

**Mesoscale NOx Emissions  
(kilograms/day)**

**2240.8**

Peak Emissions Inventory		Off-Peak Emissions Inventory	
VMT Emissions (kg/day)	Nox	VMT Emissions (kg/day)	Nox
VMT = 2,140,744	<b>1052.1</b>	VMT = 2,104,684	<b>1185.6</b>
Idle Emissions (kg/day)	Nox	Idle Emissions (kg/day)	Nox
	<b>1.6</b>		<b>1.5</b>

## Herald Square, Boston MA

### 2016 Build Condition

Nox No.	Description	Seasonally		Peak	Peak Traffic Data			Off-Peak Traffic Data		
		Adjusted ADT (veh/day)	Period ADT (veh/day)	Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	19,122	19,122	0.50	9,642	29.1	280,109	9,480	26.15	247,852
2	Washington Street - between Herald Street and Kneeland Street	8,675	8,675	0.50	4,374	5.6	24,277	4,300	5.00	21,481
3	Washington Street - between Herald Street and Mass Ave	8,675	8,675	0.50	4,374	6.9	29,963	4,300	6.17	26,512
4	Herald Street - between Washington Street and Harrison Ave	19,122	19,122	0.50	9,642	18.9	182,240	9,480	17.01	161,253
5	Harrison Ave - between Herald Street and Kneeland Street	5,319	5,319	0.50	2,682	13.8	36,877	2,637	12.38	32,630
6	Harrison Ave - between Herald Street and Traveler Street	9,118	9,118	0.50	4,598	16.4	75,172	4,520	14.72	66,515
7	Herald Street - between Harrison Ave and Albany Street	20,262	20,262	0.50	10,217	60.0	613,021	10,045	54.00	542,426
8	Albany Street - north of Herald Street	21,528	21,528	0.50	10,856	14.5	157,406	10,673	13.05	139,279
9	Albany Street - between Herald Street and I-93 SB On-ramp	41,790	41,790	0.50	21,073	2.3	47,413	20,718	2.03	41,953
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	29,823	29,823	0.50	15,038	13.0	194,744	14,785	11.66	172,318
11	Albany Street between Traveler Street and East Berkeley Street	14,373	14,373	0.50	7,248	11.4	82,624	7,126	10.26	73,109
12	Albany Street - between East Berkeley Street and Albany Street	12,157	12,157	0.50	6,130	0.0	0	6,027	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	20,389	20,389	0.50	10,281	0.0	0	10,108	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,753	14,753	0.50	7,439	16.6	123,492	7,314	14.94	109,271
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	23,681	23,681	0.50	11,941	60.0	716,469	11,740	54.00	633,960
16	Mullins Way - between Washington Street and Harrison Ave	3,546	3,546	0.50	1,788	7.3	12,963	1,758	6.53	11,470
17	Traveler Street - between Washington Street and Harrison Ave	1,836	1,836	0.50	926	0.0	0	910	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	8,421	8,421	0.50	4,246	33.3	141,407	4,175	29.97	125,122
19	East Berkeley Street - between Harrison Ave and Albany Street	15,196	15,196	0.50	7,663	21.5	164,366	7,534	19.31	145,438
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	19,059	19,059	0.50	9,610	6.0	57,182	9,449	5.36	50,597
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	13,297	13,297	0.50	6,705	5.4	35,871	6,592	4.82	31,740
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	23,555	23,555	0.50	11,877	0.0	0	11,677	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	13,424	13,424	0.50	6,769	19.3	130,637	6,655	17.37	115,593
24	Harrison Ave- between East Berkeley Street and Mass. Ave	11,714	11,714	0.50	5,907	17.6	103,958	5,807	15.84	91,986
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,865	8,865	0.50	4,470	0.0	0	4,395	0.00	0
26	East Berkeley Street - west of Harrison Ave	12,854	12,854	0.50	6,481	0.0	0	6,372	0.00	0
27	Site Drive North - Albany Street	127	127	0.50	64	7.4	469	63	6.62	415
28	Site Drive South - Harrison Ave	1,013	1,013	0.50	511	4.7	2,401	502	4.23	2,125
29	Site Drive -Traveler Street	5,103	5,103	0.50	2,573	28.2	72,570	2,530	25.38	64,213
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,104,154	1,104,154	0.50	556,766	0.0	0	547,388	0.00	0
32	I-90 - east of 93	494,018	494,018	0.50	249,107	0.0	0	244,911	0.00	0
33	I-93 - north of 90	1,108,754	1,108,754	0.50	559,086	0.0	0	549,668	0.00	0
34	I-93 - south of 90	594,225	594,225	0.50	299,636	0.0	0	294,589	0.00	0

Freeway	0	0
Arterial	3,285,632	2,907,258

#### Idle Emission Parameters

Pollutant	Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)
Freeway Nox	0.0005	0	0.00	0.0005	0	0.00
Arterial Nox	0.0005	1,647	1.65	0.0005	1,458	1.46
<b>Total</b>			<b>1.65</b>			<b>1.46</b>

## Herald Square, Boston MA

### 2016 No Build Condition

Link No.	Description	Roadway		Seasonal			PEAK PERIOD			OFF-PEAK PERIOD			
		Link Length Type	Link Length (miles)	Adjusted Volume (vehicles)	VMT Peak (veh-miles)	Speed Peak (mph)	E.M.F.		Emissions Nox (Kg/day)	VMT Off-Peak (veh-miles)	E.M.F.		Emissions Nox (Kg/day)
							Nox (g/veh-mi)	Nox (Kg/day)			Nox (g/veh-mi)	Nox (Kg/day)	
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	18,996	3,927	20	0.41	1.62	3,861	30	0.37	1.44	
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	8,358	1,307	20	0.41	0.54	1,284	30	0.37	0.48	
3	Washington Street - between Herald Street and Mass Ave	2	0.97	8,358	4,088	20	0.41	1.68	4,019	30	0.37	1.50	
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	18,996	766	20	0.41	0.32	753	30	0.37	0.28	
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	5,065	1,124	20	0.41	0.46	1,105	30	0.37	0.41	
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	8,485	257	20	0.41	0.11	252	30	0.37	0.09	
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	20,262	1,022	20	0.41	0.42	1,004	30	0.37	0.37	
8	Albany Street - north of Herald Street	2	0.21	20,325	2,152	20	0.41	0.89	2,116	30	0.37	0.79	
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	40,587	614	20	0.41	0.25	604	30	0.37	0.22	
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	28,557	1,584	20	0.41	0.65	1,557	30	0.37	0.58	
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	13,930	492	20	0.41	0.20	483	30	0.37	0.18	
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	11,714	1,240	20	0.41	0.51	1,220	30	0.37	0.45	
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	19,692	794	20	0.41	0.33	781	30	0.37	0.29	
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	14,753	595	20	0.41	0.25	585	30	0.37	0.22	
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	23,175	6,193	20	0.41	2.55	6,089	30	0.37	2.27	
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,483	123	20	0.41	0.05	121	30	0.37	0.04	
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,583	64	20	0.41	0.03	63	30	0.37	0.02	
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	5,699	287	20	0.41	0.12	283	30	0.37	0.11	
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	14,690	741	20	0.41	0.31	728	30	0.37	0.27	
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	17,856	540	20	0.41	0.22	531	30	0.37	0.20	
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	12,727	321	20	0.41	0.13	315	30	0.37	0.12	
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	23,491	2,488	20	0.41	1.02	2,446	30	0.37	0.91	
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	13,360	1,684	20	0.41	0.69	1,656	30	0.37	0.62	
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	11,271	4,603	20	0.41	1.90	4,526	30	0.37	1.68	
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	8,421	340	20	0.41	0.14	334	30	0.37	0.12	
26	East Berkeley Street - west of Harrison Ave	2	0.30	12,474	1,887	20	0.41	0.78	1,855	30	0.37	0.69	
27	Site Drive North - Albany Street	2	0.02	0	0	20	0.41	0.00	0	30	0.37	0.00	
28	Site Drive South - Harrison Ave	2	0.02	0	0	20	0.41	0.00	0	30	0.37	0.00	
29	Site Drive -Traveler Street	2	0.02	0	0	20	0.41	0.00	0	30	0.37	0.00	
30	Site Drive - No Data	2	0.02	0	0	20	0.41	0.00	0	30	0.37	0.00	
31	I-90 - west of 93	1	1.41	1,104,154	785,040	55	0.49	387.02	771,817	65	0.57	437.62	
32	I-90 - east of 93	1	1.22	494,018	303,910	55	0.49	149.83	298,791	65	0.57	169.41	
33	I-93 - north of 90	1	1.38	1,108,754	771,538	55	0.49	380.37	758,542	65	0.57	430.09	
34	I-93 - south of 90	1	0.80	594,225	239,709	55	0.49	118.18	235,671	65	0.57	133.63	

**Mesoscale NOx Emissions  
(kilograms/day)**

**2239.5**

**Peak Emissions Inventory**

VMT Emissions (kg/day)	Nox	VMT Emissions (kg/day)	Nox
VMT = 2,139,431	<b>1051.6</b>	VMT = 2,103,393	<b>1185.1</b>

**Off-Peak Emissions Inventory**

Idle Emissions (kg/day)	Nox	Idle Emissions (kg/day)	Nox
	<b>1.5</b>		<b>1.3</b>

## Herald Square, Boston MA

### 2016 No Build Condition

Nox No.	Description	Seasonally Adjusted		Peak	Peak Traffic Data			Off-Peak Traffic Data		
		ADDT (veh/day)	ADT (veh/day)	Period Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	18,996	18,996	0.50	9,578	28.1	269,155	9,417	25.29	238,159
2	Washington Street - between Herald Street and Kneeland Street	8,358	8,358	0.50	4,215	5.6	23,391	4,144	5.00	20,697
3	Washington Street - between Herald Street and Mass Ave	8,358	8,358	0.50	4,215	6.8	28,448	4,144	6.08	25,172
4	Herald Street - between Washington Street and Harrison Ave	18,996	18,996	0.50	9,578	18.6	177,680	9,417	16.70	157,219
5	Harrison Ave - between Herald Street and Kneeland Street	5,065	5,065	0.50	2,554	13.8	35,121	2,511	12.38	31,076
6	Harrison Ave - between Herald Street and Traveler Street	8,485	8,485	0.50	4,278	16.3	69,738	4,206	14.67	61,707
7	Herald Street - between Harrison Ave and Albany Street	20,262	20,262	0.50	10,217	60.0	613,021	10,045	54.00	542,426
8	Albany Street - north of Herald Street	20,325	20,325	0.50	10,249	13.4	137,336	10,076	12.06	121,520
9	Albany Street - between Herald Street and I-93 SB On-ramp	40,587	40,587	0.50	20,466	2.6	52,188	20,121	2.30	46,178
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	28,557	28,557	0.50	14,400	8.0	114,477	14,157	7.16	101,294
11	Albany Street between Traveler Street and East Berkeley Street	13,930	13,930	0.50	7,024	12.3	86,046	6,906	11.03	76,137
12	Albany Street - between East Berkeley Street and Albany Street	11,714	11,714	0.50	5,907	0.0	0	5,807	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	19,692	19,692	0.50	9,930	0.0	0	9,762	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,753	14,753	0.50	7,439	16.6	123,492	7,314	14.94	109,271
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	23,175	23,175	0.50	11,686	60.0	701,143	11,489	54.00	620,399
16	Mullins Way - between Washington Street and Harrison Ave	3,483	3,483	0.50	1,756	9.8	17,121	1,726	8.78	15,150
17	Traveler Street - between Washington Street and Harrison Ave	1,583	1,583	0.50	798	0.0	0	785	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	5,699	5,699	0.50	2,874	33.0	94,683	2,825	29.66	83,779
19	East Berkeley Street - between Harrison Ave and Albany Street	14,690	14,690	0.50	7,407	19.9	147,036	7,283	17.87	130,103
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	17,856	17,856	0.50	9,004	5.8	52,222	8,852	5.22	46,208
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	12,727	12,727	0.50	6,418	4.7	29,842	6,309	4.19	26,405
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	23,491	23,491	0.50	11,845	0.0	0	11,646	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	13,360	13,360	0.50	6,737	19.3	129,684	6,623	17.33	114,750
24	Harrison Ave- between East Berkeley Street and Mass. Ave	11,271	11,271	0.50	5,683	15.4	87,522	5,587	13.86	77,443
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,421	8,421	0.50	4,246	0.0	0	4,175	0.00	0
26	East Berkeley Street - west of Harrison Ave	12,474	12,474	0.50	6,290	0.0	0	6,184	0.00	0
27	Site Drive North - Albany Street	0	0	0.50	0	2.6	0	0	2.30	0
28	Site Drive South - Harrison Ave	0	0	0.50	0	0.0	0	0	0.00	0
29	Site Drive -Traveler Street	0	0	0.50	0	0.0	0	0	0.00	0
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,104,154	1,104,154	0.50	556,766	0.0	0	547,388	0.00	0
32	I-90 - east of 93	494,018	494,018	0.50	249,107	0.0	0	244,911	0.00	0
33	I-93 - north of 90	1,108,754	1,108,754	0.50	559,086	0.0	0	549,668	0.00	0
34	I-93 - south of 90	594,225	594,225	0.50	299,636	0.0	0	294,589	0.00	0

Freeway	0	0
Arterial	2,989,346	2,645,092

#### Idle Emission Parameters

Pollutant	Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)
Freeway	0.0005	0	0.00	0.0005	0	0.00
Arterial	0.0005	1,499	1.50	0.0005	1,326	1.33
<b>Total</b>			<b>1.50</b>			<b>1.33</b>

## Herald Square, Boston MA

### 2011 Existing Condition

Link No.	Roadway Description	Seasonal		PEAK PERIOD				OFF-PEAK PERIOD				
		Adjusted	VMT	Speed	E.M.F.	Emissions	VMT	Speed	E.M.F.	Emissions		
		Link Length	Volume	Peak	Peak	Nox	Off-Peak	Off-Peak	Nox	Nox		
Type	(miles)	(vehicles)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)		
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	17,539	3,626	20	0.86	3.12	3,565	30	0.78	2.77
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	7,915	1,237	20	0.86	1.07	1,216	30	0.78	0.94
3	Washington Street - between Herald Street and Mass Ave	2	0.97	7,915	3,871	20	0.86	3.33	3,806	30	0.78	2.95
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	17,539	708	20	0.86	0.61	696	30	0.78	0.54
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	4,559	1,011	20	0.86	0.87	994	30	0.78	0.77
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	7,662	232	20	0.86	0.20	228	30	0.78	0.18
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	18,869	951	20	0.86	0.82	935	30	0.78	0.73
8	Albany Street - north of Herald Street	2	0.21	18,616	1,971	20	0.86	1.70	1,938	30	0.78	1.50
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	37,485	567	20	0.86	0.49	557	30	0.78	0.43
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	26,277	1,458	20	0.86	1.25	1,433	30	0.78	1.11
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	12,347	436	20	0.86	0.38	428	30	0.78	0.33
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	10,701	1,133	20	0.86	0.98	1,114	30	0.78	0.86
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	18,299	738	20	0.86	0.64	726	30	0.78	0.56
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	13,487	544	20	0.86	0.47	535	30	0.78	0.42
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	21,212	5,669	20	0.86	4.88	5,573	30	0.78	4.32
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,229	114	20	0.86	0.10	112	30	0.78	0.09
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,456	59	20	0.86	0.05	58	30	0.78	0.04
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	4,432	223	20	0.86	0.19	220	30	0.78	0.17
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	13,487	680	20	0.86	0.59	669	30	0.78	0.52
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	16,589	502	20	0.86	0.43	493	30	0.78	0.38
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	11,841	299	20	0.86	0.26	294	30	0.78	0.23
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	22,098	2,340	20	0.86	2.01	2,301	30	0.78	1.79
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	12,474	1,572	20	0.86	1.35	1,546	30	0.78	1.20
24	Harrison Ave - between East Berkeley Street and Mass. Ave	2	0.81	10,384	4,241	20	0.86	3.65	4,170	30	0.78	3.24
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	7,662	309	20	0.86	0.27	304	30	0.78	0.24
26	East Berkeley Street - west of Harrison Ave	2	0.30	11,524	1,743	20	0.86	1.50	1,714	30	0.78	1.33
27	Site Drive North - Albany Street	2	0.02	0	0	20	0.86	0.00	0	30	0.78	0.00
28	Site Drive South - Harrison Ave	2	0.02	0	0	20	0.86	0.00	0	30	0.78	0.00
29	Site Drive -Traveler Street	2	0.02	0	0	20	0.86	0.00	0	30	0.78	0.00
30	Site Drive - No Data	2	0.02	0	0	20	0.86	0.00	0	30	0.78	0.00
31	I-90 - west of 93	1	1.41	1,000,066	711,035	55	1.04	740.90	699,058	65	1.21	848.66
32	I-90 - east of 93	1	1.22	447,447	275,261	55	1.04	286.82	270,624	65	1.21	328.54
33	I-93 - north of 90	1	1.38	1,004,233	698,806	55	1.04	728.16	687,035	65	1.21	834.06
34	I-93 - south of 90	1	0.80	538,208	217,112	55	1.04	226.23	213,455	65	1.21	259.13

**Mesoscale Emissions**  
(kilograms/day)

**4316.1**

**Peak Emissions Inventory**

<b>VMT Emissions (kg/day)</b>	<b>Nox</b>
VMT = 1,938,450	<b>2013.3</b>

<b>Idle Emissions (kg/day)</b>	<b>Nox</b>
	<b>2.5</b>

**Off-Peak Emissions Inventory**

<b>VMT Emissions (kg/day)</b>	<b>Nox</b>
VMT = 1,905,797	<b>2298.0</b>

<b>Idle Emissions (kg/day)</b>	<b>Nox</b>
	<b>2.2</b>

## Herald Square, Boston MA

### 2011 Existing Condition

Nox No.	Description	Seasonally			Peak Traffic Data			Off-Peak Traffic Data		
		Adjusted AADT (veh/day)	Adjusted ADT (veh/day)	Peak Period Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	17,539	17,539	0.50	8,844	20.5	180,862	8,695	18.41	160,034
2	Washington Street - between Herald Street and Kneeland Street	7,915	7,915	0.50	3,991	5.6	22,150	3,924	5.00	19,599
3	Washington Street - between Herald Street and Mass Ave	7,915	7,915	0.50	3,991	6.7	26,540	3,924	5.99	23,484
4	Herald Street - between Washington Street and Harrison Ave	17,539	17,539	0.50	8,844	14.8	130,451	8,695	13.28	115,428
5	Harrison Ave - between Herald Street and Kneeland Street	4,559	4,559	0.50	2,299	13.6	31,149	2,260	12.20	27,562
6	Harrison Ave - between Herald Street and Traveler Street	7,662	7,662	0.50	3,863	16.3	62,779	3,798	14.63	55,549
7	Herald Street - between Harrison Ave and Albany Street	18,869	18,869	0.50	9,515	47.8	454,322	9,354	42.98	402,002
8	Albany Street - north of Herald Street	18,616	18,616	0.50	9,387	12.3	115,459	9,229	11.07	102,162
9	Albany Street - between Herald Street and I-93 SB On-Ramp	37,485	37,485	0.50	18,901	2.4	44,419	18,583	2.12	39,303
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	26,277	26,277	0.50	13,250	5.8	76,851	13,027	5.22	68,001
11	Albany Street between Traveler Street and East Berkeley Street	12,347	12,347	0.50	6,226	12.0	74,401	6,121	10.76	65,833
12	Albany Street - between East Berkeley Street and Albany Street	10,701	10,701	0.50	5,396	0.0	0	5,305	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	18,299	18,299	0.50	9,227	0.0	0	9,072	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	13,487	13,487	0.50	6,801	16.1	109,151	6,686	14.45	96,581
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	21,212	21,212	0.50	10,696	57.4	613,947	10,516	51.66	543,245
16	Mullins Way - between Washington Street and Harrison Ave	3,229	3,229	0.50	1,628	8.8	14,248	1,601	7.88	12,607
17	Traveler Street - between Washington Street and Harrison Ave	1,456	1,456	0.50	734	0.0	0	722	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	4,432	4,432	0.50	2,235	33.1	73,978	2,197	29.79	65,458
19	East Berkeley Street - between Harrison Ave and Albany Street	13,487	13,487	0.50	6,801	17.3	117,652	6,686	15.57	104,103
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	16,589	16,589	0.50	8,365	5.6	46,845	8,224	5.04	41,450
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	11,841	11,841	0.50	5,971	4.0	23,882	5,870	3.60	21,132
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	22,098	22,098	0.50	11,143	0.0	0	10,955	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	12,474	12,474	0.50	6,290	18.7	117,620	6,184	16.83	104,075
24	Harrison Ave - between East Berkeley Street and Mass. Ave	10,384	10,384	0.50	5,236	13.3	69,642	5,148	11.97	61,622
25	I-90 EB On-Ramp - north of Traveler Street to I-90	7,662	7,662	0.50	3,863	0.0	0	3,798	0.00	0
26	East Berkeley Street - west of Harrison Ave	11,524	11,524	0.50	5,811	0.0	0	5,713	0.00	0
27	Site Drive North - Albany Street	0	0	0.50	0	2.4	0	0	2.12	0
28	Site Drive South - Harrison Ave	0	0	0.50	0	0.0	0	0	0.00	0
29	Site Drive -Traveler Street	0	0	0.50	0	0.0	0	0	0.00	0
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,000,066	1,000,066	0.50	504,280	0.0	0	495,786	0.00	0
32	I-90 - east of 93	447,447	447,447	0.50	225,624	0.0	0	221,823	0.00	0
33	I-93 - north of 90	1,004,233	1,004,233	0.50	506,381	0.0	0	497,851	0.00	0
34	I-93 - south of 90	538,208	538,208	0.50	271,390	0.0	0	266,818	0.00	0

Freeway	0	0
Arterial	2,406,348	2,129,233

#### Idle Emission Parameters

Pollutant	Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)
Freeway	0.0010	0	0.00	0.0010	0	0.00
Arterial	0.0010	2,507	2.51	0.0010	2,218	2.22
Total			2.51			2.22

## Herald Square, Boston MA

Link Roadway No. Description	Roadway Type	2011 Existing Condition				2016 No Build Condition				2016 Build Condition				2016 Build with Mitigation Condition			
		Peak		Off Peak		Peak		Off Peak		Peak		Off Peak		Peak		Off Peak	
		Average Speed (mph)	Nox EMF (g-veh/mi)	Average Speed (mph)	Nox EMF (g-veh/mi)	Average Speed (mph)	Nox EMF (g-veh/mi)	Average Speed (mph)	Nox EMF (g-veh/mi)	Average Speed (mph)	Nox EMF (g-veh/mi)	Average Speed (mph)	Nox EMF (g-veh/mi)	Average Speed (mph)	Nox EMF (g-veh/mi)	Average Speed (mph)	Nox EMF (g-veh/mi)
1 Herald Street - between Kneeland Street and Washington Street	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
2 Washington Street - between Herald Street and Kneeland Street	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
3 Washington Street - between Herald Street and Mass Ave	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
4 Herald Street - between Washington Street and Harrison Ave	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
5 Harrison Ave - between Herald Street and Kneeland Street	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
6 Harrison Ave - between Herald Street and Traveler Street	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
7 Herald Street - between Harrison Ave and Albany Street	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
8 Albany Street - north of Herald Street	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
9 Albany Street - between Herald Street and I-93 SB On-ramp	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
10 Albany Street - between I-93 SB On-Ramp and Traveler Street	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
11 Albany Street between Traveler Street and East Berkeley Street	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
12 Albany Street - between East Berkeley Street and Albany Street	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
13 I-93 NB On-Ramp - north of Traveler Street to I-93	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
14 I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
15 I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
16 Mullins Way - between Washington Street and Harrison Ave	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
17 Traveler Street - between Washington Street and Harrison Ave	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
18 Traveler Street - between Harrison Ave and Albany Street	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
19 East Berkeley Street - between Harrison Ave and Albany Street	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
20 Traveler Street - between Albany Street and I-93 NB On-Ramp	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
21 East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
22 Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
23 West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
24 Harrison Ave - between East Berkeley Street and Mass. Ave	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
25 I-90 EB On-Ramp - north of Traveler Street to I-90	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37
26 East Berkeley Street - west of Harrison Ave	2	20	0.86	30	0.78	20	0.41	30	0.37	20	0.41	30	0.37	20	0.41	30	0.37



## Herald Square, Boston MA

Link No.	Roadway Description	2011 Existing Condition			2016 No Build Condition			2016 Build Condition				2016 Build with Mitigation Condition			
		S.A.F.	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Traffic Increase (no-build)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Traffic Increase (no-build)
1	Herald Street - between Kneeland Street and Washington Street	100%	17,539	17,539	18,996	18,996	8.3%	19,122	19,122	9.0%	0.7%	19,118	19,118	9.0%	0.6%
2	Washington Street - between Herald Street and Kneeland Street	100%	7,915	7,915	8,358	8,358	5.6%	8,675	8,675	9.6%	3.8%	8,665	8,665	9.5%	3.7%
3	Washington Street - between Herald Street and Mass Ave	100%	7,915	7,915	8,358	8,358	5.6%	8,675	8,675	9.6%	3.8%	8,665	8,665	9.5%	3.7%
4	Herald Street - between Washington Street and Harrison Ave	100%	17,539	17,539	18,996	18,996	8.3%	19,122	19,122	9.0%	0.7%	19,118	19,118	9.0%	0.6%
5	Harrison Ave - between Herald Street and Kneeland Street	100%	4,559	4,559	5,065	5,065	11.1%	5,319	5,319	16.7%	5.0%	5,311	5,311	16.5%	4.8%
6	Harrison Ave - between Herald Street and Traveler Street	100%	7,662	7,662	8,485	8,485	10.7%	9,118	9,118	19.0%	7.5%	9,098	9,098	18.8%	7.2%
7	Herald Street - between Harrison Ave and Albany Street	100%	18,869	18,869	20,262	20,262	7.4%	20,262	20,262	7.4%	0.0%	20,262	20,262	7.4%	0.0%
8	Albany Street - north of Herald Street	100%	18,616	18,616	20,325	20,325	9.2%	21,528	21,528	15.6%	5.9%	21,491	21,491	15.4%	5.7%
9	Albany Street - between Herald Street and I-93 SB On-ramp	100%	37,485	37,485	40,587	40,587	8.3%	41,790	41,790	11.5%	3.0%	41,753	41,753	11.4%	2.9%
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	100%	26,277	26,277	28,557	28,557	8.7%	29,823	29,823	13.5%	4.4%	29,784	29,784	13.3%	4.3%
11	Albany Street between Traveler Street and East Berkeley Street	100%	12,347	12,347	13,930	13,930	12.8%	14,373	14,373	16.4%	3.2%	14,360	14,360	16.3%	3.1%
12	Albany Street - between East Berkeley Street and Albany Street	100%	10,701	10,701	11,714	11,714	9.5%	12,157	12,157	13.6%	3.8%	12,143	12,143	13.5%	3.7%
13	I-93 NB On-Ramp - north of Traveler Street to I-93	100%	18,299	18,299	19,692	19,692	7.6%	20,389	20,389	11.4%	3.5%	20,367	20,367	11.3%	3.4%
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	100%	13,487	13,487	14,753	14,753	9.4%	14,753	14,753	9.4%	0.0%	14,753	14,753	9.4%	0.0%
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	100%	21,212	21,212	23,175	23,175	9.3%	23,681	23,681	11.6%	2.2%	23,665	23,665	11.6%	2.1%
16	Mullins Way - between Washington Street and Harrison Ave	100%	3,229	3,229	3,483	3,483	7.8%	3,546	3,546	9.8%	1.8%	3,544	3,544	9.7%	1.8%
17	Traveler Street - between Washington Street and Harrison Ave	100%	1,456	1,456	1,583	1,583	8.7%	1,836	1,836	26.1%	16.0%	1,828	1,828	25.5%	15.5%
18	Traveler Street - between Harrison Ave and Albany Street	100%	4,432	4,432	5,699	5,699	28.6%	8,421	8,421	90.0%	47.8%	8,337	8,337	88.1%	46.3%
19	East Berkeley Street - between Harrison Ave and Albany Street	100%	13,487	13,487	14,690	14,690	8.9%	15,196	15,196	12.7%	3.4%	15,181	15,181	12.6%	3.3%
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	100%	16,589	16,589	17,856	17,856	7.6%	19,059	19,059	14.9%	6.7%	19,022	19,022	14.7%	6.5%
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	100%	11,841	11,841	12,727	12,727	7.5%	13,297	13,297	12.3%	4.5%	13,279	13,279	12.2%	4.3%
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	100%	22,098	22,098	23,491	23,491	6.3%	23,555	23,555	6.6%	0.3%	23,553	23,553	6.6%	0.3%
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	100%	12,474	12,474	13,360	13,360	7.1%	13,424	13,424	7.6%	0.5%	13,422	13,422	7.6%	0.5%
24	Harrison Ave- between East Berkeley Street and Mass. Ave	100%	10,384	10,384	11,271	11,271	8.5%	11,714	11,714	12.8%	3.9%	11,700	11,700	12.7%	3.8%
25	I-90 EB On-Ramp - north of Traveler Street to I-90	100%	7,662	7,662	8,421	8,421	9.9%	8,865	8,865	15.7%	5.3%	8,851	8,851	15.5%	5.1%
26	East Berkeley Street - west of Harrison Ave	100%	11,524	11,524	12,474	12,474	8.2%	12,854	12,854	11.5%	3.0%	12,842	12,842	11.4%	3.0%

# Herald Square, Boston MA

Pollutant **Nox**

## MOBILE 6.2 Emission Factors

2011			2016		
Vehicle Speed (mph)	Nox (g/veh-mile)		Vehicle Speed (mph)	Nox (g/veh-mile)	
	Freeway	Arterial		Freeway	Arterial
2.5	1.4980	1.5000	2.5	0.7250	0.7220
3	1.4680	1.4440	3	0.7100	0.6940
4	1.3970	1.3740	4	0.6750	0.6600
5	1.3550	1.3310	5	0.6550	0.6390
6	1.2840	1.2540	6	0.6190	0.6010
7	1.2120	1.1990	7	0.5830	0.5740
8	1.1580	1.1570	8	0.5570	0.5540
9	1.1160	1.1250	9	0.5360	0.5380
10	1.0830	1.0990	10	0.5190	0.5260
11	1.0490	1.0580	11	0.5020	0.5060
12	1.0110	1.0240	12	0.4840	0.4900
13	0.9790	0.9950	13	0.4680	0.4760
14	0.9520	0.9710	14	0.4550	0.4640
15	0.9280	0.9490	15	0.4430	0.4540
16	0.9100	0.9270	16	0.4350	0.4430
17	0.8990	0.9080	17	0.4300	0.4340
18	0.8900	0.8900	18	0.4260	0.4260
19	0.8820	0.8750	19	0.4230	0.4190
20	0.8740	0.8610	20	0.4200	0.4120
21	0.8670	0.8480	21	0.4170	0.4060
22	0.8610	0.8370	22	0.4140	0.4010
23	0.8550	0.8260	23	0.4120	0.3960
24	0.8490	0.8160	24	0.4090	0.3910
25	0.8440	0.8070	25	0.4070	0.3870
26	0.8400	0.8000	26	0.4060	0.3830
27	0.8370	0.7930	27	0.4040	0.3800
28	0.8340	0.7870	28	0.4030	0.3770
29	0.8310	0.7820	29	0.4020	0.3740
30	0.8280	0.7760	30	0.4010	0.3720
31	0.8270	0.7740	31	0.4000	0.3710
32	0.8260	0.7720	32	0.4000	0.3700
33	0.8250	0.7700	33	0.3990	0.3690
34	0.8250	0.7680	34	0.3990	0.3680
35	0.8240	0.7670	35	0.3990	0.3670
36	0.8280	0.7700	36	0.4000	0.3680
37	0.8310	0.7740	37	0.4020	0.3700
38	0.8350	0.7770	38	0.4030	0.3710
39	0.8380	0.7800	39	0.4050	0.3730
40	0.8430	0.7830	40	0.4070	0.3740
41	0.8500	0.7900	41	0.4100	0.3770
42	0.8570	0.7970	42	0.4130	0.3800
43	0.8640	0.8040	43	0.4160	0.3830
44	0.8700	0.8100	44	0.4190	0.3860
45	0.8820	0.8160	45	0.4240	0.3880
46	0.8930	0.8270	46	0.4290	0.3930
47	0.9030	0.8380	47	0.4330	0.3980
48	0.9130	0.8480	48	0.4380	0.4020
49	0.9280	0.8570	49	0.4440	0.4060
50	0.9450	0.8670	50	0.4510	0.4100
51	0.9610	0.8820	51	0.4580	0.4170
52	0.9760	0.8980	52	0.4650	0.4240
53	0.9950	0.9120	53	0.4730	0.4300
54	1.0190	0.9260	54	0.4830	0.4360
55	1.0420	0.9400	55	0.4930	0.4420
56	1.0650	0.9620	56	0.5030	0.4520
57	1.0910	0.9840	57	0.5140	0.4610
58	1.1260	1.0050	58	0.5290	0.4700
59	1.1600	1.0250	59	0.5430	0.4790
60	1.1920	1.0440	60	0.5570	0.4870
60.7	1.2140	1.0760	60.7	0.5670	0.5000
Factors were calculated	1.214	1.11	0.567	0.51	
for the vehicle type during	1.214	1.14	0.567	0.53	
	1.21	1.16	0.57	0.54	
	1.21	1.19	0.57	0.55	

### Herald Square, Boston MA

Link No.	Description	2011 Existing Condition					2016 No Build Condition					2016 Build Condition					2016 Build with Mitigation Condition				
		Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)
		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)			
1	Herald Street - between Kneeland Street and Washington Street	40.9	0.0	40.9	0.0	20.5	56.2	0.0	56.2	0.0	28.1	58.1	0.0	58.1	0.0	29.1	58.1	0.0	58.1	0.0	29.1
2	Washington Street - between Herald Street and Kneeland Street	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6
3	Washington Street - between Herald Street and Mass Ave	13.3	0.0	13.3	0.0	6.7	13.5	0.0	13.5	0.0	6.8	13.7	0.0	13.7	0.0	6.9	13.7	0.0	13.7	0.0	6.9
4	Herald Street - between Washington Street and Harrison Ave	29.5	0.0	29.5	0.0	14.8	37.1	0.0	37.1	0.0	18.6	37.8	0.0	37.8	0.0	18.9	37.8	0.0	37.8	0.0	18.9
5	Harrison Ave - between Herald Street and Kneeland Street	0.0	27.1	0.0	27.1	13.6	0.0	27.5	0.0	27.5	13.8	0.0	27.5	0.0	27.5	13.8	0.0	27.5	0.0	27.5	13.8
6	Harrison Ave - between Herald Street and Traveler Street	32.5	0.0	32.5	0.0	16.3	32.6	0.0	32.6	0.0	16.3	32.7	0.0	32.7	0.0	16.4	32.7	0.0	32.7	0.0	16.4
7	Herald Street - between Harrison Ave and Albany Street	95.5	0.0	95.5	0.0	47.8	130.6	0.0	120.0	0.0	60.0	130.6	0.0	120.0	0.0	60.0	130.6	0.0	120.0	0.0	60.0
8	Albany Street - north of Herald Street	0.0	24.6	0.0	24.6	12.3	0.0	26.8	0.0	26.8	13.4	0.0	29.0	0.0	29.0	14.5	0.0	29.0	0.0	29.0	14.5
9	Albany Street - between Herald Street and I-93 SB On-ramp	0.0	4.7	0.0	4.7	2.4	0.0	5.1	0.0	5.1	2.6	0.0	4.5	0.0	4.5	2.3	0.0	4.5	0.0	4.5	2.3
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	0.0	11.6	0.0	11.6	5.8	0.0	15.9	0.0	15.9	8.0	0.0	25.9	0.0	25.9	13.0	0.0	25.9	0.0	25.9	13.0
11	Albany Street between Traveler Street and East Berkeley Street	0.0	23.9	0.0	23.9	12.0	0.0	24.5	0.0	24.5	12.3	0.0	22.8	0.0	22.8	11.4	0.0	22.8	0.0	22.8	11.4
12	Albany Street - between East Berkeley Street and Albany Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	32.1	0.0	32.1	0.0	16.1	33.2	0.0	33.2	0.0	16.6	33.2	0.0	33.2	0.0	16.6	33.2	0.0	33.2	0.0	16.6
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	114.8	0.0	114.8	0.0	57.4	153.4	0.0	120.0	0.0	60.0	150.8	0.0	120.0	0.0	60.0	150.8	0.0	120.0	0.0	60.0
16	Mullins Way - between Washington Street and Harrison Ave	17.5	0.0	17.5	0.0	8.8	19.5	0.0	19.5	0.0	9.8	14.5	0.0	14.5	0.0	7.3	14.5	0.0	14.5	0.0	7.3
17	Traveler Street - between Washington Street and Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	Traveler Street - between Harrison Ave and Albany Street	49.3	16.9	49.3	16.9	33.1	48.8	17.1	48.8	17.1	33.0	48.9	17.7	48.9	17.7	33.3	48.9	17.7	48.9	17.7	33.3
19	East Berkeley Street - between Harrison Ave and Albany Street	0.0	34.6	0.0	34.6	17.3	0.0	39.7	0.0	39.7	19.9	0.0	42.9	0.0	42.9	21.5	0.0	42.9	0.0	42.9	21.5
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	11.2	0.0	11.2	0.0	5.6	11.6	0.0	11.6	0.0	5.8	11.9	0.0	11.9	0.0	6.0	11.9	0.0	11.9	0.0	6.0
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	0.0	8.0	0.0	8.0	4.0	0.0	9.3	0.0	9.3	4.7	0.0	10.7	0.0	10.7	5.4	0.0	10.7	0.0	10.7	5.4
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	0.0	37.4	0.0	37.4	18.7	0.0	38.5	0.0	38.5	19.3	0.0	38.6	0.0	38.6	19.3	0.0	38.6	0.0	38.6	19.3
24	Harrison Ave - between East Berkeley Street and Mass. Ave	26.6	0.0	26.6	0.0	13.3	30.8	0.0	30.8	0.0	15.4	35.2	0.0	35.2	0.0	17.6	35.2	0.0	35.2	0.0	17.6
25	I-90 EB On-Ramp - north of Traveler Street to I-90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	East Berkeley Street - west of Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	Site Drive North - Albany Street	0.0	4.7	0.0	4.7	2.4	0.0	5.1	0.0	5.1	2.6	10.2	4.5	10.2	4.5	7.4	10.2	4.5	10.2	4.5	7.4
28	Site Drive South - Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.0	9.4	4.7	0.0	9.4	0.0	9.4	4.7
29	Site Drive -Traveler Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	54.4	2.0	54.4	28.2	2.0	54.4	2.0	54.4	28.2
30	Site Drive - No Data	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	I-90 - west of 93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	I-90 - east of 93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	I-93 - north of 90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	I-93 - south of 90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

#### Herald Square, Boston MA PM Peak Condition

Int	Description	2011 Existing Condition Delay by Approach				2016 No Build Condition Delay by Approach				2016 Build Condition Delay by Approach				2016 Build with Mitigation Condition Delay by Approach			
		Northbound	Southbound	Eastbound	Westbound	Northbound	Southbound	Eastbound	Westbound	Northbound	Southbound	Eastbound	Westbound	Northbound	Southbound	Eastbound	Westbound
		NB.EX	SB.EX	EB.EX	WB.EX	NB.NB	SB.NB	EB.NB	WB.NB	NB.BL	SB.BL	EB.BL	WB.BL	NB.BLM	SB.BLM	EB.BLM	WB.BLM
Int1	<a href="#">Herald Street and Washington Street</a>	13.3	11.1	40.9	0.0	13.5	11.1	56.2	0.0	13.7	11.1	58.1	0.0	13.7	11.1	58.1	0.0
Int2	<a href="#">Herald Street and Harrison Avenue</a>	32.5	27.1	29.5	0.0	32.6	27.5	37.1	0.0	32.7	27.5	37.8	0.0	32.7	27.5	37.8	0.0
Int3	<a href="#">Herald Street and Albany Street</a>	0.0	24.6	95.5	0.0	0.0	26.8	130.6	0.0	0.0	29.0	130.6	0.0	0.0	29.0	130.6	0.0
Int4	<a href="#">Traveler Street and Harrison Avenue</a>	40.1	41.8	0.0	16.9	41.6	62.5	0.0	17.1	45.5	176.5	0.0	17.7	45.5	176.5	0.0	17.7
Int5	<a href="#">Traveler Street and Albany Street</a>	0.0	11.6	49.3	0.0	0.0	15.9	48.8	0.0	0.0	25.9	48.9	0.0	0.0	25.9	48.9	0.0
Int6	<a href="#">Traveler Street and Frontage Road</a>	32.1	0.0	11.2	0.0	33.2	0.0	11.6	0.0	33.2	0.0	11.9	0.0	33.2	0.0	11.9	0.0
Int7	<a href="#">East Berkeley Street and Harrison Ave</a>	26.6	10.7	0.0	34.6	30.8	10.7	0.0	39.7	35.2	15.0	0.0	42.9	35.2	15.0	0.0	42.9
Int8	<a href="#">East Berkeley Street and Albany Street</a>	0.0	23.9	0.0	8.0	0.0	24.5	0.0	9.3	0.0	22.8	0.0	10.7	0.0	22.8	0.0	10.7
Int9	<a href="#">East Berkeley Street and Frontage Road</a>	114.8	0.0	0.0	37.4	153.4	0.0	0.0	38.5	150.8	0.0	0.0	38.6	150.8	0.0	0.0	38.6
Int10	<a href="#">William E. Mullins Way and Harrison Avenue</a>	4.4	0.0	17.5	16.6	4.7	0.0	19.5	18.1	4.5	0.0	14.5	0.0	4.5	0.0	14.5	0.0
Int11	<a href="#">Boston Herald Back and Albany Street</a>	0.0	4.7	Err	0.0	0.0	5.1	Err	0.0	0.0	4.5	10.2	0.0	0.0	4.5	10.2	0.0
Int12	<a href="#">South Site Driveway and Harrison Avenue</a>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.0	0.0	9.4	0.0
Int13	<a href="#">North Site Driveway and Harrison Avenue- No Data</a>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Int 14	<a href="#">Traveler Street and Site Driveway</a>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.4	2.0	0.5	0.0	54.4	2.0	0.5

# Herald Square, Boston MA

[Harrison Avenue, south of Herald Street](#)

Thursday 03/03/2011					Friday 03/04/2011					Weekday Average				
Peak Period Data					Peak Period Data					Peak Period Data				
Begin Time	Volume	V/C Ratio	Hours	Volume	Begin Time	Volume	V/C Ratio	Hours	Volume	Begin Time	Volume	V/C Ratio	Hours	Volume
12:00 AM	70	0.06	0	0	12:00 AM	73	0.06	0	0	12:00 AM	72	0.06	0	0
1:00 AM	55	0.05	0	0	1:00 AM	71	0.06	0	0	1:00 AM	63	0.05	0	0
2:00 AM	41	0.03	0	0	2:00 AM	71	0.06	0	0	2:00 AM	56	0.05	0	0
3:00 AM	42	0.04	0	0	3:00 AM	49	0.04	0	0	3:00 AM	46	0.04	0	0
4:00 AM	57	0.05	0	0	4:00 AM	62	0.05	0	0	4:00 AM	60	0.05	0	0
5:00 AM	76	0.06	0	0	5:00 AM	74	0.06	0	0	5:00 AM	75	0.06	0	0
6:00 AM	151	0.13	0	0	6:00 AM	138	0.12	0	0	6:00 AM	145	0.12	0	0
7:00 AM	258	0.22	0	0	7:00 AM	288	0.24	0	0	7:00 AM	273	0.23	0	0
8:00 AM	361	0.30	1	361	8:00 AM	381	0.32	0	0	8:00 AM	371	0.31	0	0
9:00 AM	387	0.32	1	387	9:00 AM	395	0.33	0	0	9:00 AM	391	0.33	1	391
10:00 AM	341	0.28	0	0	10:00 AM	372	0.31	0	0	10:00 AM	357	0.30	0	0
11:00 AM	412	0.34	1	412	11:00 AM	412	0.34	0	0	11:00 AM	412	0.34	1	412
12:00 PM	350	0.29	0	0	12:00 PM	385	0.32	0	0	12:00 PM	368	0.31	0	0
1:00 PM	348	0.29	0	0	1:00 PM	423	0.35	1	423	1:00 PM	386	0.32	0	0
2:00 PM	419	0.35	1	419	2:00 PM	463	0.39	1	463	2:00 PM	441	0.37	1	441
3:00 PM	544	0.45	1	544	3:00 PM	528	0.44	1	528	3:00 PM	536	0.45	1	536
4:00 PM	555	0.46	1	555	4:00 PM	591	0.49	1	591	4:00 PM	573	0.48	1	573
5:00 PM	574	0.48	1	574	5:00 PM	589	0.49	1	589	5:00 PM	582	0.48	1	582
6:00 PM	322	0.27	0	0	6:00 PM	458	0.38	1	458	6:00 PM	390	0.33	1	390
7:00 PM	231	0.19	0	0	7:00 PM	306	0.26	0	0	7:00 PM	269	0.22	0	0
8:00 PM	169	0.14	0	0	8:00 PM	257	0.21	0	0	8:00 PM	213	0.18	0	0
9:00 PM	143	0.12	0	0	9:00 PM	182	0.15	0	0	9:00 PM	163	0.14	0	0
10:00 PM	155	0.13	0	0	10:00 PM	214	0.18	0	0	10:00 PM	185	0.15	0	0
11:00 PM	125	0.10	0	0	11:00 PM	218	0.18	0	0	11:00 PM	172	0.14	0	0
<b>Total</b>	<b>6,186</b>		<b>7</b>	<b>3,252</b>	<b>Total</b>	<b>7,000</b>		<b>6</b>	<b>3,052</b>	<b>Total</b>	<b>6,593</b>		<b>7</b>	<b>3,325</b>
<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>	<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>	<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>
		<b>30%</b>		<b>360</b>			<b>35%</b>		<b>420</b>			<b>33%</b>		<b>390</b>
<b>Peak Hour (K) Factor</b>		<b>0.093</b>	<b>(4:00-5:00 PM)</b>		<b>Peak Hour (K) Factor</b>		<b>0.084</b>	<b>(4:00-5:00 PM)</b>		<b>Peak Hour (K) Factor</b>		<b>0.088</b>	<b>(4:00-5:00 PM)</b>	
<b>Peak Period Volume Factor</b>			<b>0.526</b>		<b>Peak Period Volume Factor</b>			<b>0.436</b>		<b>Peak Period Volume Factor</b>			<b>0.504</b>	

## Herald Square, Boston MA Average Daily Traffic (ADT) for Mesoscale Roadway Network

Estimated TDM Adjustment = 3.10%

Roadway Segment		2011 Existing Condition				2016 No Build Condition		2016 Build with Mitigation Condition		Unadjusted PM Peak Hour			
		Volume (ADT)	Volume (ADT)	Volume (ADT)	Volume (ADT)					2011 Existing Condition	2016 No Build Condition	2016 Build Condition	2016 Build with Mitigation Condition
				K Factor				Seasonal Adjustment Factor					
				8.8%				111.4%					
1	Herald Street - between Kneeland Street and Washington Street	17,539	18,996	19,122	19,118					1385	1500	1510	1510
2	Washington Street - between Herald Street and Kneeland Street	7,915	8,358	8,675	8,665					625	660	685	684
3	Washington Street - between Herald Street and Mass Ave	7,915	8,358	8,675	8,665					625	660	685	684
4	Herald Street - between Washington Street and Harrison Ave	17,539	18,996	19,122	19,118					1385	1500	1510	1510
5	Harrison Ave - between Herald Street and Kneeland Street	4,559	5,065	5,319	5,311					360	400	420	419
6	Harrison Ave - between Herald Street and Traveler Street	7,662	8,485	9,118	9,098					605	670	720	718
7	Herald Street - between Harrison Ave and Albany Street	18,869	20,262	20,262	20,262					1490	1600	1600	1600
8	Albany Street - north of Herald Street	18,616	20,325	21,528	21,491					1470	1605	1700	1697
9	Albany Street - between Herald Street and I-93 SB On-ramp	37,485	40,587	41,790	41,753					2960	3205	3300	3297
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	26,277	28,557	29,823	29,784					2075	2255	2355	2352
11	Albany Street between Traveler Street and East Berkeley Street	12,347	13,930	14,373	14,360					975	1100	1135	1134
12	Albany Street - between East Berkeley Street and Albany Street	10,701	11,714	12,157	12,143					845	925	960	959
13	I-93 NB On-Ramp - north of Traveler Street to I-93	18,299	19,692	20,389	20,367					1445	1555	1610	1608
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	13,487	14,753	14,753	14,753					1065	1165	1165	1165
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	21,212	23,175	23,681	23,665					1675	1830	1870	1869
16	Mullins Way - between Washington Street and Harrison Ave	3,229	3,483	3,546	3,544					255	275	280	280
17	Traveler Street - between Washington Street and Harrison Ave	1,456	1,583	1,836	1,828					115	125	145	144
18	Traveler Street - between Harrison Ave and Albany Street	4,432	5,699	8,421	8,337					350	450	665	658
19	East Berkeley Street - between Harrison Ave and Albany Street	13,487	14,690	15,196	15,181					1065	1160	1200	1199
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	16,589	17,856	19,059	19,022					1310	1410	1505	1502
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	11,841	12,727	13,297	13,279					935	1005	1050	1049
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	22,098	23,491	23,555	23,553					1745	1855	1860	1860
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	12,474	13,360	13,424	13,422					985	1055	1060	1060
24	Harrison Ave- between East Berkeley Street and Mass. Ave	10,384	11,271	11,714	11,700					820	890	925	924
25	I-90 EB On-Ramp - north of Traveler Street to I-90	7,662	8,421	8,865	8,851					605	665	700	699
26	East Berkeley Street - west of Harrison Ave	11,524	12,474	12,854	12,842					910	985	1015	1014
27	Site Drive North - Albany Street	0	0	127	123					0	0	10	10
28	Site Drive South - Harrison Ave	0	0	1,013	982					0	0	80	78
29	Site Drive -Traveler Street	0	0	5,103	4,945					0	0	403	391
30	Site Drive - No Data	0	0	0	0					0	0	0	0
31	I-90 - west of 93	1,000,066	1,104,154	1,104,154	1,104,154					78,971	87,190	87,190	87190
32	I-90 - east of 93	447,447	494,018	494,018	494,018					35,333	39,010	39,010	39010
33	I-93 - north of 90	1,004,233	1,108,754	1,108,754	1,108,754					79,300	87,554	87,554	87554
34	I-93 - south of 90	538,208	594,225	594,225	594,225					42,500	46,923	46,923	46923
												291,183	
												292,801	
												1,618	
												49	

## Herald Square, Boston MA

STATION 8932 - BOSTON - RTE.I-93 - NORTH OF GRANITE AVE. AT HALLET ST.

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
04	170,788	180,330	186,604	178,396	198,379	197,000	198,000	200,961	195,770	196,686	195,000	194,000	190,993
						August	-	February					111%

## Herald Square, Boston MA

### Mesoscale Roadway Data

Link No.	Description	Roadway Type	Link Length (miles)	Speed Limit (mph)	Existing		No Build		Build	
					1=Freeway	2=Arterial	Peak Speed (mph)	Off-Peak Speed (mph)	Peak Speed (mph)	Off-Peak Speed (mph)
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	30	20	30	20	30	20	30
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	30	20	30	20	30	20	30
3	Washington Street - between Herald Street and Mass Ave	2	0.97	30	20	30	20	30	20	30
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	30	20	30	20	30	20	30
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	30	20	30	20	30	20	30
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	30	20	30	20	30	20	30
7	Herald Street - between Harrison Ave and Albany Street	2	0.1	30	20	30	20	30	20	30
8	Albany Street - north of Herald Street	2	0.21	30	20	30	20	30	20	30
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	30	20	30	20	30	20	30
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	30	20	30	20	30	20	30
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	30	20	30	20	30	20	30
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	30	20	30	20	30	20	30
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	30	20	30	20	30	20	30
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	30	20	30	20	30	20	30
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	30	20	30	20	30	20	30
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	30	20	30	20	30	20	30
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	30	20	30	20	30	20	30
18	Traveler Street - between Harrison Ave and Albany Street	2	0.1	30	20	30	20	30	20	30
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.1	30	20	30	20	30	20	30
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	30	20	30	20	30	20	30
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	30	20	30	20	30	20	30
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	30	20	30	20	30	20	30
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	30	20	30	20	30	20	30
24	Harrison Ave - between East Berkeley Street and Mass. Ave	2	0.81	30	20	30	20	30	20	30
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	30	20	30	20	30	20	30
26	East Berkeley Street - west of Harrison Ave	2	0.3	30	20	30	20	30	20	30
27	Site Drive North - Albany Street	2	0.02	30	20	30	20	30	20	30
28	Site Drive South - Harrison Ave	2	0.02	30	20	30	20	30	20	30
29	Site Drive -Traveler Street	2	0.02	30	20	30	20	30	20	30
30	Site Drive - No Data	2	0.02	30	20	30	20	30	20	30
31	I-90 - west of 93	1	1.41	65	55	65	55	65	55	65
32	I-90 - east of 93	1	1.22	65	55	65	55	65	55	65
33	I-93 - north of 90	1	1.38	65	55	65	55	65	55	65
34	I-93 - south of 90	1	0.8	65	55	65	55	65	55	65

# Volatile Organic Compound (VOC)



# Herald Square, Boston MA

## VOC Emissions Inventory in Kilograms per Day

<u>Pollutant</u>	<u>2011 Existing Condition</u>	<u>2016 No Build Condition</u>	<u>2016 Build Condition</u>	<u>2016 Build with Mitigation Condition</u>
Volatile Organic Compound (VOC)	1,229.796	905.912	907.234	907.200
Project Emission			1.3	-
Difference with Build Condition				(0.035)
Percent Reduction from Mitigation				-2.6%

**Herald Square, Boston MA**  
**2016 Build with Mitigation Condition**

Link No.	Description	Seasonal			PEAK PERIOD			OFF-PEAK PERIOD				
		Roadway Link Length Type	Adjusted Volume (miles) (vehicles)	VMT Peak (veh-miles)	Speed Peak (mph)	E.M.F. VOC (g/veh-mi)	Emissions VOC (Kg/day)	VMT Off-Peak (veh-miles)	Speed Off-Peak (mph)	E.M.F. VOC (g/veh-mi)	Emissions VOC (Kg/day)	
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	19,118	3,953	20	0.29	1.14	3,886	30	0.24	0.95
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	8,665	1,354	20	0.29	0.39	1,332	30	0.24	0.32
3	Washington Street - between Herald Street and Mass Ave	2	0.97	8,665	4,238	20	0.29	1.22	4,167	30	0.24	1.02
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	19,118	771	20	0.29	0.22	758	30	0.24	0.19
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	5,311	1,178	20	0.29	0.34	1,158	30	0.24	0.28
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	9,098	275	20	0.29	0.08	271	30	0.24	0.07
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	20,262	1,022	20	0.29	0.30	1,004	30	0.24	0.25
8	Albany Street - north of Herald Street	2	0.21	21,491	2,276	20	0.29	0.66	2,237	30	0.24	0.55
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	41,753	632	20	0.29	0.18	621	30	0.24	0.15
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	29,784	1,652	20	0.29	0.48	1,624	30	0.24	0.40
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	14,360	507	20	0.29	0.15	498	30	0.24	0.12
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	12,143	1,286	20	0.29	0.37	1,264	30	0.24	0.31
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	20,367	822	20	0.29	0.24	808	30	0.24	0.20
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	14,753	595	20	0.29	0.17	585	30	0.24	0.14
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	23,665	6,325	20	0.29	1.83	6,218	30	0.24	1.52
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,544	125	20	0.29	0.04	123	30	0.24	0.03
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,828	74	20	0.29	0.02	73	30	0.24	0.02
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	8,337	420	20	0.29	0.12	413	30	0.24	0.10
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	15,181	765	20	0.29	0.22	753	30	0.24	0.18
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	19,022	575	20	0.29	0.17	566	30	0.24	0.14
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	13,279	335	20	0.29	0.10	329	30	0.24	0.08
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	23,553	2,494	20	0.29	0.72	2,452	30	0.24	0.60
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	13,422	1,692	20	0.29	0.49	1,663	30	0.24	0.41
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	11,700	4,779	20	0.29	1.38	4,698	30	0.24	1.15
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	8,851	357	20	0.29	0.10	351	30	0.24	0.09
26	East Berkeley Street - west of Harrison Ave	2	0.30	12,842	1,943	20	0.29	0.56	1,910	30	0.24	0.47
27	Site Drive North - Albany Street	2	0.02	123	1	20	0.29	0.00	1	30	0.24	0.00
28	Site Drive South - Harrison Ave	2	0.02	982	10	20	0.29	0.00	10	30	0.24	0.00
29	Site Drive -Traveler Street	2	0.02	4,945	50	20	0.29	0.01	49	30	0.24	0.01
30	Site Drive - No Data	2	0.02	0	0	20	0.29	0.00	0	30	0.24	0.00
31	I-90 - west of 93	1	1.41	1,104,154	785,040	55	0.21	165.64	771,817	65	0.21	162.85
32	I-90 - east of 93	1	1.22	494,018	303,910	55	0.21	64.13	298,791	65	0.21	63.04
33	I-93 - north of 90	1	1.38	1,108,754	771,538	55	0.21	162.79	758,542	65	0.21	160.05
34	I-93 - south of 90	1	0.80	594,225	239,709	55	0.21	50.58	235,671	65	0.21	49.73

**Mesoscale Emissions**  
**(kilograms/day)**

**907.2**

**Peak Emissions Inventory**

**VMT Emissions (kg/day)**      **VOC**  
VMT = 2,140,704      **454.8**

**Idle Emissions (kg/day)**      **VOC**

**3.7**

**Off-Peak Emissions Inventory**

**VMT Emissions (kg/day)**      **VOC**  
VMT = 2,104,644      **445.4**

**Idle Emissions (kg/day)**      **VOC**

**3.3**

**Herald Square, Boston MA**  
**2016 Build with Mitigation Condition**

Nox No.	Description	Seasonally		Peak	Peak Traffic Data			Off-Peak Traffic Data		
		Adjusted AADT (veh/day)	Adjusted ADT (veh/day)	Period Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	19,118	19,118	0.50	9,640	29.1	280,052	9,478	26.15	247,801
2	Washington Street - between Herald Street and Kneeland Street	8,665	8,665	0.50	4,369	5.6	24,249	4,296	5.00	21,457
3	Washington Street - between Herald Street and Mass Ave	8,665	8,665	0.50	4,369	6.9	29,929	4,296	6.17	26,482
4	Herald Street - between Washington Street and Harrison Ave	19,118	19,118	0.50	9,640	18.9	182,202	9,478	17.01	161,220
5	Harrison Ave - between Herald Street and Kneeland Street	5,311	5,311	0.50	2,678	13.8	36,823	2,633	12.38	32,582
6	Harrison Ave - between Herald Street and Traveler Street	9,098	9,098	0.50	4,588	16.4	75,010	4,510	14.72	66,372
7	Herald Street - between Harrison Ave and Albany Street	20,262	20,262	0.50	10,217	60.0	613,021	10,045	54.00	542,426
8	Albany Street - north of Herald Street	21,491	21,491	0.50	10,837	14.5	157,133	10,654	13.05	139,038
9	Albany Street - between Herald Street and I-93 SB On-ramp	41,753	41,753	0.50	21,054	2.3	47,371	20,699	2.03	41,916
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	29,784	29,784	0.50	15,018	13.0	194,488	14,765	11.66	172,091
11	Albany Street between Traveler Street and East Berkeley Street	14,360	14,360	0.50	7,241	11.4	82,545	7,119	10.26	73,039
12	Albany Street - between East Berkeley Street and Albany Street	12,143	12,143	0.50	6,123	0.0	0	6,020	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	20,367	20,367	0.50	10,270	0.0	0	10,097	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,753	14,753	0.50	7,439	16.6	123,492	7,314	14.94	109,271
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	23,665	23,665	0.50	11,933	60.0	715,994	11,732	54.00	633,540
16	Mullins Way - between Washington Street and Harrison Ave	3,544	3,544	0.50	1,787	7.3	12,956	1,757	6.53	11,464
17	Traveler Street - between Washington Street and Harrison Ave	1,828	1,828	0.50	922	0.0	0	906	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	8,337	8,337	0.50	4,204	33.3	139,990	4,133	29.97	123,868
19	East Berkeley Street - between Harrison Ave and Albany Street	15,181	15,181	0.50	7,655	21.5	164,197	7,526	19.31	145,288
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	19,022	19,022	0.50	9,592	6.0	57,070	9,430	5.36	50,498
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	13,279	13,279	0.50	6,696	5.4	35,824	6,583	4.82	31,698
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	23,553	23,553	0.50	11,876	0.0	0	11,676	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	13,422	13,422	0.50	6,768	19.3	130,618	6,654	17.37	115,576
24	Harrison Ave- between East Berkeley Street and Mass. Ave	11,700	11,700	0.50	5,900	17.6	103,836	5,800	15.84	91,878
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,851	8,851	0.50	4,463	0.0	0	4,388	0.00	0
26	East Berkeley Street - west of Harrison Ave	12,842	12,842	0.50	6,475	0.0	0	6,366	0.00	0
27	Site Drive North - Albany Street	123	123	0.50	62	2.3	139	61	2.03	123
28	Site Drive South - Harrison Ave	982	982	0.50	495	4.7	2,327	487	4.23	2,059
29	Site Drive -Traveler Street	4,945	4,945	0.50	2,494	28.2	70,321	2,452	25.38	62,222
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,104,154	1,104,154	0.50	556,766	0.0	0	547,388	0.00	0
32	I-90 - east of 93	494,018	494,018	0.50	249,107	0.0	0	244,911	0.00	0
33	I-93 - north of 90	1,108,754	1,108,754	0.50	559,086	0.0	0	549,668	0.00	0
34	I-93 - south of 90	594,225	594,225	0.50	299,636	0.0	0	294,589	0.00	0

Freeway	0	0
Arterial	3,279,585	2,901,908

**Idle Emission Parameters**

Pollutant	Peak Period Emissions			Off-Peak Period Emissions			
	(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)	
Freeway	VOC	0.0010	0	0.00	0.0010	0	0.00
Arterial	VOC	0.0011	3,692	3.69	0.0011	3,267	3.27
Total			3.69				3.27

0.030%  
99.970%

## Herald Square, Boston MA

### 2016 Build Condition

Link No.	Description	Seasonal			PEAK PERIOD			OFF-PEAK PERIOD				
		Roadway	Adjusted	VMT	Speed	E.M.F.	Emissions	VMT	Speed	E.M.F.	Emissions	
		Link Length	Volume	Peak	Peak	VOC	VOC	Off-Peak	Off-Peak	VOC	VOC	
Type	(miles)	(vehicles)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)		
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	19,122	3,953	20	0.29	1.14	3,887	30	0.24	0.95
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	8,675	1,356	20	0.29	0.39	1,333	30	0.24	0.33
3	Washington Street - between Herald Street and Mass Ave	2	0.97	8,675	4,243	20	0.29	1.23	4,171	30	0.24	1.02
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	19,122	771	20	0.29	0.22	758	30	0.24	0.19
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	5,319	1,180	20	0.29	0.34	1,160	30	0.24	0.28
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	9,118	276	20	0.29	0.08	271	30	0.24	0.07
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	20,262	1,022	20	0.29	0.30	1,004	30	0.24	0.25
8	Albany Street - north of Herald Street	2	0.21	21,528	2,280	20	0.29	0.66	2,241	30	0.24	0.55
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	41,790	632	20	0.29	0.18	622	30	0.24	0.15
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	29,823	1,654	20	0.29	0.48	1,626	30	0.24	0.40
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	14,373	507	20	0.29	0.15	499	30	0.24	0.12
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	12,157	1,287	20	0.29	0.37	1,266	30	0.24	0.31
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	20,389	822	20	0.29	0.24	809	30	0.24	0.20
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	14,753	595	20	0.29	0.17	585	30	0.24	0.14
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	23,681	6,329	20	0.29	1.83	6,222	30	0.24	1.52
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,546	125	20	0.29	0.04	123	30	0.24	0.03
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,836	74	20	0.29	0.02	73	30	0.24	0.02
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	8,421	425	20	0.29	0.12	417	30	0.24	0.10
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	15,196	766	20	0.29	0.22	753	30	0.24	0.18
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	19,059	577	20	0.29	0.17	567	30	0.24	0.14
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	13,297	335	20	0.29	0.10	330	30	0.24	0.08
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	23,555	2,494	20	0.29	0.72	2,452	30	0.24	0.60
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	13,424	1,692	20	0.29	0.49	1,664	30	0.24	0.41
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	11,714	4,784	20	0.29	1.38	4,704	30	0.24	1.15
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	8,865	358	20	0.29	0.10	352	30	0.24	0.09
26	East Berkeley Street - west of Harrison Ave	2	0.30	12,854	1,944	20	0.29	0.56	1,912	30	0.24	0.47
27	Site Drive North - Albany Street	2	0.02	127	1	20	0.29	0.00	1	30	0.24	0.00
28	Site Drive South - Harrison Ave	2	0.02	1,013	10	20	0.29	0.00	10	30	0.24	0.00
29	Site Drive -Traveler Street	2	0.02	5,103	51	20	0.29	0.01	51	30	0.24	0.01
30	Site Drive - No Data	2	0.02	0	0	20	0.29	0.00	0	30	0.24	0.00
31	I-90 - west of 93	1	1.41	1,104,154	785,040	55	0.21	165.64	771,817	65	0.21	162.85
32	I-90 - east of 93	1	1.22	494,018	303,910	55	0.21	64.13	298,791	65	0.21	63.04
33	I-93 - north of 90	1	1.38	1,108,754	771,538	55	0.21	162.79	758,542	65	0.21	160.05
34	I-93 - south of 90	1	0.80	594,225	239,709	55	0.21	50.58	235,671	65	0.21	49.73

**Mesoscale NOx Emissions  
(kilograms/day)**

**907.2**

Peak Emissions Inventory		Off-Peak Emissions Inventory	
VMT Emissions (kg/day)	VOC	VMT Emissions (kg/day)	VOC
VMT = 2,140,744	<b>454.9</b>	VMT = 2,104,684	<b>445.4</b>
Idle Emissions (kg/day)	VOC	Idle Emissions (kg/day)	VOC
	<b>3.7</b>		<b>3.3</b>

## Herald Square, Boston MA

### 2016 Build Condition

Nox No.	Description	Seasonally Adjusted		Peak	Peak Traffic Data			Off-Peak Traffic Data		
		ADDT (veh/day)	ADT (veh/day)	Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	19,122	19,122	0.50	9,642	29.1	280,109	9,480	26.15	247,852
2	Washington Street - between Herald Street and Kneeland Street	8,675	8,675	0.50	4,374	5.6	24,277	4,300	5.00	21,481
3	Washington Street - between Herald Street and Mass Ave	8,675	8,675	0.50	4,374	6.9	29,963	4,300	6.17	26,512
4	Herald Street - between Washington Street and Harrison Ave	19,122	19,122	0.50	9,642	18.9	182,240	9,480	17.01	161,253
5	Harrison Ave - between Herald Street and Kneeland Street	5,319	5,319	0.50	2,682	13.8	36,877	2,637	12.38	32,630
6	Harrison Ave - between Herald Street and Traveler Street	9,118	9,118	0.50	4,598	16.4	75,172	4,520	14.72	66,515
7	Herald Street - between Harrison Ave and Albany Street	20,262	20,262	0.50	10,217	60.0	613,021	10,045	54.00	542,426
8	Albany Street - north of Herald Street	21,528	21,528	0.50	10,856	14.5	157,406	10,673	13.05	139,279
9	Albany Street - between Herald Street and I-93 SB On-ramp	41,790	41,790	0.50	21,073	2.3	47,413	20,718	2.03	41,953
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	29,823	29,823	0.50	15,038	13.0	194,744	14,785	11.66	172,318
11	Albany Street between Traveler Street and East Berkeley Street	14,373	14,373	0.50	7,248	11.4	82,624	7,126	10.26	73,109
12	Albany Street - between East Berkeley Street and Albany Street	12,157	12,157	0.50	6,130	0.0	0	6,027	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	20,389	20,389	0.50	10,281	0.0	0	10,108	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,753	14,753	0.50	7,439	16.6	123,492	7,314	14.94	109,271
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	23,681	23,681	0.50	11,941	60.0	716,469	11,740	54.00	633,960
16	Mullins Way - between Washington Street and Harrison Ave	3,546	3,546	0.50	1,788	7.3	12,963	1,758	6.53	11,470
17	Traveler Street - between Washington Street and Harrison Ave	1,836	1,836	0.50	926	0.0	0	910	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	8,421	8,421	0.50	4,246	33.3	141,407	4,175	29.97	125,122
19	East Berkeley Street - between Harrison Ave and Albany Street	15,196	15,196	0.50	7,663	21.5	164,366	7,534	19.31	145,438
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	19,059	19,059	0.50	9,610	6.0	57,182	9,449	5.36	50,597
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	13,297	13,297	0.50	6,705	5.4	35,871	6,592	4.82	31,740
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	23,555	23,555	0.50	11,877	0.0	0	11,677	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	13,424	13,424	0.50	6,769	19.3	130,637	6,655	17.37	115,593
24	Harrison Ave- between East Berkeley Street and Mass. Ave	11,714	11,714	0.50	5,907	17.6	103,958	5,807	15.84	91,986
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,865	8,865	0.50	4,470	0.0	0	4,395	0.00	0
26	East Berkeley Street - west of Harrison Ave	12,854	12,854	0.50	6,481	0.0	0	6,372	0.00	0
27	Site Drive North - Albany Street	127	127	0.50	64	2.3	144	63	2.03	127
28	Site Drive South - Harrison Ave	1,013	1,013	0.50	511	4.7	2,401	502	4.23	2,125
29	Site Drive -Traveler Street	5,103	5,103	0.50	2,573	28.2	72,570	2,530	25.38	64,213
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,104,154	1,104,154	0.50	556,766	0.0	0	547,388	0.00	0
32	I-90 - east of 93	494,018	494,018	0.50	249,107	0.0	0	244,911	0.00	0
33	I-93 - north of 90	1,108,754	1,108,754	0.50	559,086	0.0	0	549,668	0.00	0
34	I-93 - south of 90	594,225	594,225	0.50	299,636	0.0	0	294,589	0.00	0

Freeway	0	0
Arterial	3,285,307	2,906,970

#### Idle Emission Parameters

Pollutant	Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)
Freeway VOC	0.0010	0	0.00	0.0010	0	0.00
Arterial VOC	0.0011	3,698	3.70	0.0011	3,272	3.27
<b>Total</b>			<b>3.70</b>			<b>3.27</b>

## Herald Square, Boston MA

### 2016 No Build Condition

Link No.	Description	Roadway		Seasonal		PEAK PERIOD			OFF-PEAK PERIOD			
		Link Length	Type	Adjusted	VMT	Speed	E.M.F.	Emissions	VMT	Speed	E.M.F.	Emissions
				Volume	Peak	Peak	VOC	VOC	Off-Peak	Off-Peak	VOC	VOC
(miles)	(vehicles)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)			
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	18,996	3,927	20	0.29	1.13	3,861	30	0.24	0.94
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	8,358	1,307	20	0.29	0.38	1,284	30	0.24	0.31
3	Washington Street - between Herald Street and Mass Ave	2	0.97	8,358	4,088	20	0.29	1.18	4,019	30	0.24	0.98
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	18,996	766	20	0.29	0.22	753	30	0.24	0.18
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	5,065	1,124	20	0.29	0.32	1,105	30	0.24	0.27
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	8,485	257	20	0.29	0.07	252	30	0.24	0.06
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	20,262	1,022	20	0.29	0.30	1,004	30	0.24	0.25
8	Albany Street - north of Herald Street	2	0.21	20,325	2,152	20	0.29	0.62	2,116	30	0.24	0.52
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	40,587	614	20	0.29	0.18	604	30	0.24	0.15
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	28,557	1,584	20	0.29	0.46	1,557	30	0.24	0.38
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	13,930	492	20	0.29	0.14	483	30	0.24	0.12
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	11,714	1,240	20	0.29	0.36	1,220	30	0.24	0.30
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	19,692	794	20	0.29	0.23	781	30	0.24	0.19
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	14,753	595	20	0.29	0.17	585	30	0.24	0.14
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	23,175	6,193	20	0.29	1.79	6,089	30	0.24	1.49
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,483	123	20	0.29	0.04	121	30	0.24	0.03
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,583	64	20	0.29	0.02	63	30	0.24	0.02
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	5,699	287	20	0.29	0.08	283	30	0.24	0.07
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	14,690	741	20	0.29	0.21	728	30	0.24	0.18
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	17,856	540	20	0.29	0.16	531	30	0.24	0.13
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	12,727	321	20	0.29	0.09	315	30	0.24	0.08
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	23,491	2,488	20	0.29	0.72	2,446	30	0.24	0.60
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	13,360	1,684	20	0.29	0.49	1,656	30	0.24	0.40
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	11,271	4,603	20	0.29	1.33	4,526	30	0.24	1.10
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	8,421	340	20	0.29	0.10	334	30	0.24	0.08
26	East Berkeley Street - west of Harrison Ave	2	0.30	12,474	1,887	20	0.29	0.55	1,855	30	0.24	0.45
27	Site Drive North - Albany Street	2	0.02	0	0	20	0.29	0.00	0	30	0.24	0.00
28	Site Drive South - Harrison Ave	2	0.02	0	0	20	0.29	0.00	0	30	0.24	0.00
29	Site Drive -Traveler Street	2	0.02	0	0	20	0.29	0.00	0	30	0.24	0.00
30	Site Drive - No Data	2	0.02	0	0	20	0.29	0.00	0	30	0.24	0.00
31	I-90 - west of 93	1	1.41	1,104,154	785,040	55	0.21	165.64	771,817	65	0.21	162.85
32	I-90 - east of 93	1	1.22	494,018	303,910	55	0.21	64.13	298,791	65	0.21	63.04
33	I-93 - north of 90	1	1.38	1,108,754	771,538	55	0.21	162.79	758,542	65	0.21	160.05
34	I-93 - south of 90	1	0.80	594,225	239,709	55	0.21	50.58	235,671	65	0.21	49.73

**Mesoscale NOx Emissions  
(kilograms/day)**

**905.9**

**Peak Emissions Inventory**

<b>VMT Emissions (kg/day)</b>	<b>VOC</b>	<b>VMT Emissions (kg/day)</b>	<b>VOC</b>
VMT = 2,139,431	<b>454.5</b>	VMT = 2,103,393	<b>445.1</b>

**Off-Peak Emissions Inventory**

<b>Idle Emissions (kg/day)</b>	<b>VOC</b>	<b>Idle Emissions (kg/day)</b>	<b>VOC</b>
	<b>3.4</b>		<b>3.0</b>

## Herald Square, Boston MA

### 2016 No Build Condition

Nox No.	Description	Seasonally Adjusted			Peak Traffic Data			Off-Peak Traffic Data		
		ADDT (veh/day)	ADT (veh/day)	Period Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	18,996	18,996	0.50	9,578	28.1	269,155	9,417	25.29	238,159
2	Washington Street - between Herald Street and Kneeland Street	8,358	8,358	0.50	4,215	5.6	23,391	4,144	5.00	20,697
3	Washington Street - between Herald Street and Mass Ave	8,358	8,358	0.50	4,215	6.8	28,448	4,144	6.08	25,172
4	Herald Street - between Washington Street and Harrison Ave	18,996	18,996	0.50	9,578	18.6	177,680	9,417	16.70	157,219
5	Harrison Ave - between Herald Street and Kneeland Street	5,065	5,065	0.50	2,554	13.8	35,121	2,511	12.38	31,076
6	Harrison Ave - between Herald Street and Traveler Street	8,485	8,485	0.50	4,278	16.3	69,738	4,206	14.67	61,707
7	Herald Street - between Harrison Ave and Albany Street	20,262	20,262	0.50	10,217	60.0	613,021	10,045	54.00	542,426
8	Albany Street - north of Herald Street	20,325	20,325	0.50	10,249	13.4	137,336	10,076	12.06	121,520
9	Albany Street - between Herald Street and I-93 SB On-ramp	40,587	40,587	0.50	20,466	2.6	52,188	20,121	2.30	46,178
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	28,557	28,557	0.50	14,400	8.0	114,477	14,157	7.16	101,294
11	Albany Street between Traveler Street and East Berkeley Street	13,930	13,930	0.50	7,024	12.3	86,046	6,906	11.03	76,137
12	Albany Street - between East Berkeley Street and Albany Street	11,714	11,714	0.50	5,907	0.0	0	5,807	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	19,692	19,692	0.50	9,930	0.0	0	9,762	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,753	14,753	0.50	7,439	16.6	123,492	7,314	14.94	109,271
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	23,175	23,175	0.50	11,686	60.0	701,143	11,489	54.00	620,399
16	Mullins Way - between Washington Street and Harrison Ave	3,483	3,483	0.50	1,756	9.8	17,121	1,726	8.78	15,150
17	Traveler Street - between Washington Street and Harrison Ave	1,583	1,583	0.50	798	0.0	0	785	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	5,699	5,699	0.50	2,874	33.0	94,683	2,825	29.66	83,779
19	East Berkeley Street - between Harrison Ave and Albany Street	14,690	14,690	0.50	7,407	19.9	147,036	7,283	17.87	130,103
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	17,856	17,856	0.50	9,004	5.8	52,222	8,852	5.22	46,208
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	12,727	12,727	0.50	6,418	4.7	29,842	6,309	4.19	26,405
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	23,491	23,491	0.50	11,845	0.0	0	11,646	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	13,360	13,360	0.50	6,737	19.3	129,684	6,623	17.33	114,750
24	Harrison Ave- between East Berkeley Street and Mass. Ave	11,271	11,271	0.50	5,683	15.4	87,522	5,587	13.86	77,443
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,421	8,421	0.50	4,246	0.0	0	4,175	0.00	0
26	East Berkeley Street - west of Harrison Ave	12,474	12,474	0.50	6,290	0.0	0	6,184	0.00	0
27	Site Drive North - Albany Street	0	0	0.50	0	2.6	0	0	2.30	0
28	Site Drive South - Harrison Ave	0	0	0.50	0	0.0	0	0	0.00	0
29	Site Drive -Traveler Street	0	0	0.50	0	0.0	0	0	0.00	0
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,104,154	1,104,154	0.50	556,766	0.0	0	547,388	0.00	0
32	I-90 - east of 93	494,018	494,018	0.50	249,107	0.0	0	244,911	0.00	0
33	I-93 - north of 90	1,108,754	1,108,754	0.50	559,086	0.0	0	549,668	0.00	0
34	I-93 - south of 90	594,225	594,225	0.50	299,636	0.0	0	294,589	0.00	0

Freeway	0	0
Arterial	2,989,346	2,645,092

#### Idle Emission Parameters

Pollutant	Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)
Freeway VOC	0.0010	0	0.00	0.0010	0	0.00
Arterial VOC	0.0011	3,365	3.37	0.0011	2,978	2.98
Total			3.37			2.98

## Herald Square, Boston MA

### 2011 Existing Condition

Link No.	Roadway Description	Seasonal		PEAK PERIOD				OFF-PEAK PERIOD				
		Adjusted	VMT	Speed	E.M.F.	Emissions	VMT	Speed	E.M.F.	Emissions		
		Link Length Type (miles)	Volume (vehicles)	Peak (veh-miles)	Peak (mph)	VOC (g/veh-mi)	VOC (Kg/day)	Off-Peak (veh-miles)	Off-Peak (mph)	VOC (g/veh-mi)	VOC (Kg/day)	
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	17,539	3,626	20	0.42	1.54	3,565	30	0.36	1.29
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	7,915	1,237	20	0.42	0.52	1,216	30	0.36	0.44
3	Washington Street - between Herald Street and Mass Ave	2	0.97	7,915	3,871	20	0.42	1.64	3,806	30	0.36	1.38
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	17,539	708	20	0.42	0.30	696	30	0.36	0.25
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	4,559	1,011	20	0.42	0.43	994	30	0.36	0.36
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	7,662	232	20	0.42	0.10	228	30	0.36	0.08
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	18,869	951	20	0.42	0.40	935	30	0.36	0.34
8	Albany Street - north of Herald Street	2	0.21	18,616	1,971	20	0.42	0.84	1,938	30	0.36	0.70
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	37,485	567	20	0.42	0.24	557	30	0.36	0.20
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	26,277	1,458	20	0.42	0.62	1,433	30	0.36	0.52
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	12,347	436	20	0.42	0.18	428	30	0.36	0.16
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	10,701	1,133	20	0.42	0.48	1,114	30	0.36	0.40
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	18,299	738	20	0.42	0.31	726	30	0.36	0.26
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	13,487	544	20	0.42	0.23	535	30	0.36	0.19
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	21,212	5,669	20	0.42	2.40	5,573	30	0.36	2.02
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,229	114	20	0.42	0.05	112	30	0.36	0.04
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,456	59	20	0.42	0.02	58	30	0.36	0.02
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	4,432	223	20	0.42	0.09	220	30	0.36	0.08
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	13,487	680	20	0.42	0.29	669	30	0.36	0.24
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	16,589	502	20	0.42	0.21	493	30	0.36	0.18
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	11,841	299	20	0.42	0.13	294	30	0.36	0.11
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	22,098	2,340	20	0.42	0.99	2,301	30	0.36	0.83
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	12,474	1,572	20	0.42	0.67	1,546	30	0.36	0.56
24	Harrison Ave - between East Berkeley Street and Mass. Ave	2	0.81	10,384	4,241	20	0.42	1.80	4,170	30	0.36	1.51
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	7,662	309	20	0.42	0.13	304	30	0.36	0.11
26	East Berkeley Street - west of Harrison Ave	2	0.30	11,524	1,743	20	0.42	0.74	1,714	30	0.36	0.62
27	Site Drive North - Albany Street	2	0.02	0	0	20	0.42	0.00	0	30	0.36	0.00
28	Site Drive South - Harrison Ave	2	0.02	0	0	20	0.42	0.00	0	30	0.36	0.00
29	Site Drive -Traveler Street	2	0.02	0	0	20	0.42	0.00	0	30	0.36	0.00
30	Site Drive - No Data	2	0.02	0	0	20	0.42	0.00	0	30	0.36	0.00
31	I-90 - west of 93	1	1.41	1,000,066	711,035	55	0.32	225.40	699,058	65	0.32	220.90
32	I-90 - east of 93	1	1.22	447,447	275,261	55	0.32	87.26	270,624	65	0.32	85.52
33	I-93 - north of 90	1	1.38	1,004,233	698,806	55	0.32	221.52	687,035	65	0.32	217.10
34	I-93 - south of 90	1	0.80	538,208	217,112	55	0.32	68.82	213,455	65	0.32	67.45

**Mesoscale Emissions  
(kilograms/day)**

**1229.8**

**Peak Emissions Inventory**

<b>VMT Emissions (kg/day)</b>	<b>VOC</b>
VMT = 1,938,450	<b>618.4</b>

<b>Idle Emissions (kg/day)</b>	<b>VOC</b>
	<b>4.0</b>

**Off-Peak Emissions Inventory**

<b>VMT Emissions (kg/day)</b>	<b>VOC</b>
VMT = #####	<b>603.9</b>

<b>Idle Emissions (kg/day)</b>	<b>VOC</b>
	<b>3.5</b>



## Herald Square, Boston MA

### 2011 Existing Condition

Nox No.	Description	Seasonally			Peak Traffic Data			Off-Peak Traffic Data		
		Adjusted AADT (veh/day)	Adjusted ADT (veh/day)	Peak Period Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	17,539	17,539	0.50	8,844	20.5	180,862	8,695	18.41	160,034
2	Washington Street - between Herald Street and Kneeland Street	7,915	7,915	0.50	3,991	5.6	22,150	3,924	5.00	19,599
3	Washington Street - between Herald Street and Mass Ave	7,915	7,915	0.50	3,991	6.7	26,540	3,924	5.99	23,484
4	Herald Street - between Washington Street and Harrison Ave	17,539	17,539	0.50	8,844	14.8	130,451	8,695	13.28	115,428
5	Harrison Ave - between Herald Street and Kneeland Street	4,559	4,559	0.50	2,299	13.6	31,149	2,260	12.20	27,562
6	Harrison Ave - between Herald Street and Traveler Street	7,662	7,662	0.50	3,863	16.3	62,779	3,798	14.63	55,549
7	Herald Street - between Harrison Ave and Albany Street	18,869	18,869	0.50	9,515	47.8	454,322	9,354	42.98	402,002
8	Albany Street - north of Herald Street	18,616	18,616	0.50	9,387	12.3	115,459	9,229	11.07	102,162
9	Albany Street - between Herald Street and I-93 SB On-Ramp	37,485	37,485	0.50	18,901	2.4	44,419	18,583	2.12	39,303
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	26,277	26,277	0.50	13,250	5.8	76,851	13,027	5.22	68,001
11	Albany Street between Traveler Street and East Berkeley Street	12,347	12,347	0.50	6,226	12.0	74,401	6,121	10.76	65,833
12	Albany Street - between East Berkeley Street and Albany Street	10,701	10,701	0.50	5,396	0.0	0	5,305	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	18,299	18,299	0.50	9,227	0.0	0	9,072	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	13,487	13,487	0.50	6,801	16.1	109,151	6,686	14.45	96,581
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	21,212	21,212	0.50	10,696	57.4	613,947	10,516	51.66	543,245
16	Mullins Way - between Washington Street and Harrison Ave	3,229	3,229	0.50	1,628	8.8	14,248	1,601	7.88	12,607
17	Traveler Street - between Washington Street and Harrison Ave	1,456	1,456	0.50	734	0.0	0	722	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	4,432	4,432	0.50	2,235	33.1	73,978	2,197	29.79	65,458
19	East Berkeley Street - between Harrison Ave and Albany Street	13,487	13,487	0.50	6,801	17.3	117,652	6,686	15.57	104,103
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	16,589	16,589	0.50	8,365	5.6	46,845	8,224	5.04	41,450
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	11,841	11,841	0.50	5,971	4.0	23,882	5,870	3.60	21,132
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	22,098	22,098	0.50	11,143	0.0	0	10,955	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	12,474	12,474	0.50	6,290	18.7	117,620	6,184	16.83	104,075
24	Harrison Ave - between East Berkeley Street and Mass. Ave	10,384	10,384	0.50	5,236	13.3	69,642	5,148	11.97	61,622
25	I-90 EB On-Ramp - north of Traveler Street to I-90	7,662	7,662	0.50	3,863	0.0	0	3,798	0.00	0
26	East Berkeley Street - west of Harrison Ave	11,524	11,524	0.50	5,811	0.0	0	5,713	0.00	0
27	Site Drive North - Albany Street	0	0	0.50	0	2.4	0	0	2.12	0
28	Site Drive South - Harrison Ave	0	0	0.50	0	0.0	0	0	0.00	0
29	Site Drive -Traveler Street	0	0	0.50	0	0.0	0	0	0.00	0
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,000,066	1,000,066	0.50	504,280	0.0	0	495,786	0.00	0
32	I-90 - east of 93	447,447	447,447	0.50	225,624	0.0	0	221,823	0.00	0
33	I-93 - north of 90	1,004,233	1,004,233	0.50	506,381	0.0	0	497,851	0.00	0
34	I-93 - south of 90	538,208	538,208	0.50	271,390	0.0	0	266,818	0.00	0

Freeway	0	0
Arterial	2,406,348	2,129,233

#### Idle Emission Parameters

Pollutant	Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)
Freeway VOC	0.0015	0	<b>0.00</b>	0.0015	0	<b>0.00</b>
Arterial VOC	0.0017	4,011	<b>4.01</b>	0.0017	3,549	<b>3.55</b>
Total			<b>4.01</b>			<b>3.55</b>

## Herald Square, Boston MA

Link Roadway No. Description	Roadway Type	2011 Existing Condition				2016 No Build Condition				2016 Build Condition				2016 Build with Mitigation Condition			
		Peak		Off Peak		Peak		Off Peak		Peak		Off Peak		Peak		Off Peak	
		Average Speed (mph)	VOC EMF (g-veh/mi)	Average Speed (mph)	VOC EMF (g-veh/mi)	Average Speed (mph)	VOC EMF (g-veh/mi)	Average Speed (mph)	VOC EMF (g-veh/mi)	Average Speed (mph)	VOC EMF (g-veh/mi)	Average Speed (mph)	VOC EMF (g-veh/mi)	Average Speed (mph)	VOC EMF (g-veh/mi)	Average Speed (mph)	VOC EMF (g-veh/mi)
1 Herald Street - between Kneeland Street and Washington Street	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
2 Washington Street - between Herald Street and Kneeland Street	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
3 Washington Street - between Herald Street and Mass Ave	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
4 Herald Street - between Washington Street and Harrison Ave	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
5 Harrison Ave - between Herald Street and Kneeland Street	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
6 Harrison Ave - between Herald Street and Traveler Street	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
7 Herald Street - between Harrison Ave and Albany Street	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
8 Albany Street - north of Herald Street	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
9 Albany Street - between Herald Street and I-93 SB On-ramp	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
10 Albany Street - between I-93 SB On-Ramp and Traveler Street	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
11 Albany Street between Traveler Street and East Berkeley Street	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
12 Albany Street - between East Berkeley Street and Albany Street	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
13 I-93 NB On-Ramp - north of Traveler Street to I-93	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
14 I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
15 I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
16 Mullins Way - between Washington Street and Harrison Ave	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
17 Traveler Street - between Washington Street and Harrison Ave	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
18 Traveler Street - between Harrison Ave and Albany Street	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
19 East Berkeley Street - between Harrison Ave and Albany Street	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
20 Traveler Street - between Albany Street and I-93 NB On-Ramp	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
21 East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
22 Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
23 West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
24 Harrison Ave- between East Berkeley Street and Mass. Ave	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
25 I-90 EB On-Ramp - north of Traveler Street to I-90	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24
26 East Berkeley Street - west of Harrison Ave	2	20	0.42	30	0.36	20	0.29	30	0.24	20	0.29	30	0.24	20	0.29	30	0.24

## Herald Square, Boston MA

Link No.	Roadway Description	2011 Existing Condition			2016 No Build Condition			2016 Build Condition				2016 Build with Mitigation Condition			
		S.A.F.	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Traffic Increase (no-build)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Traffic Increase (no-build)
1	Herald Street - between Kneeland Street and Washington Street	100%	17,539	17,539	18,996	18,996	8.3%	19,122	19,122	9.0%	0.7%	19,118	19,118	9.0%	0.6%
2	Washington Street - between Herald Street and Kneeland Street	100%	7,915	7,915	8,358	8,358	5.6%	8,675	8,675	9.6%	3.8%	8,665	8,665	9.5%	3.7%
3	Washington Street - between Herald Street and Mass Ave	100%	7,915	7,915	8,358	8,358	5.6%	8,675	8,675	9.6%	3.8%	8,665	8,665	9.5%	3.7%
4	Herald Street - between Washington Street and Harrison Ave	100%	17,539	17,539	18,996	18,996	8.3%	19,122	19,122	9.0%	0.7%	19,118	19,118	9.0%	0.6%
5	Harrison Ave - between Herald Street and Kneeland Street	100%	4,559	4,559	5,065	5,065	11.1%	5,319	5,319	16.7%	5.0%	5,311	5,311	16.5%	4.8%
6	Harrison Ave - between Herald Street and Traveler Street	100%	7,662	7,662	8,485	8,485	10.7%	9,118	9,118	19.0%	7.5%	9,098	9,098	18.8%	7.2%
7	Herald Street - between Harrison Ave and Albany Street	100%	18,869	18,869	20,262	20,262	7.4%	20,262	20,262	7.4%	0.0%	20,262	20,262	7.4%	0.0%
8	Albany Street - north of Herald Street	100%	18,616	18,616	20,325	20,325	9.2%	21,528	21,528	15.6%	5.9%	21,491	21,491	15.4%	5.7%
9	Albany Street - between Herald Street and I-93 SB On-ramp	100%	37,485	37,485	40,587	40,587	8.3%	41,790	41,790	11.5%	3.0%	41,753	41,753	11.4%	2.9%
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	100%	26,277	26,277	28,557	28,557	8.7%	29,823	29,823	13.5%	4.4%	29,784	29,784	13.3%	4.3%
11	Albany Street between Traveler Street and East Berkeley Street	100%	12,347	12,347	13,930	13,930	12.8%	14,373	14,373	16.4%	3.2%	14,360	14,360	16.3%	3.1%
12	Albany Street - between East Berkeley Street and Albany Street	100%	10,701	10,701	11,714	11,714	9.5%	12,157	12,157	13.6%	3.8%	12,143	12,143	13.5%	3.7%
13	I-93 NB On-Ramp - north of Traveler Street to I-93	100%	18,299	18,299	19,692	19,692	7.6%	20,389	20,389	11.4%	3.5%	20,367	20,367	11.3%	3.4%
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	100%	13,487	13,487	14,753	14,753	9.4%	14,753	14,753	9.4%	0.0%	14,753	14,753	9.4%	0.0%
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	100%	21,212	21,212	23,175	23,175	9.3%	23,681	23,681	11.6%	2.2%	23,665	23,665	11.6%	2.1%
16	Mullins Way - between Washington Street and Harrison Ave	100%	3,229	3,229	3,483	3,483	7.8%	3,546	3,546	9.8%	1.8%	3,544	3,544	9.7%	1.8%
17	Traveler Street - between Washington Street and Harrison Ave	100%	1,456	1,456	1,583	1,583	8.7%	1,836	1,836	26.1%	16.0%	1,828	1,828	25.5%	15.5%
18	Traveler Street - between Harrison Ave and Albany Street	100%	4,432	4,432	5,699	5,699	28.6%	8,421	8,421	90.0%	47.8%	8,337	8,337	88.1%	46.3%
19	East Berkeley Street - between Harrison Ave and Albany Street	100%	13,487	13,487	14,690	14,690	8.9%	15,196	15,196	12.7%	3.4%	15,181	15,181	12.6%	3.3%
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	100%	16,589	16,589	17,856	17,856	7.6%	19,059	19,059	14.9%	6.7%	19,022	19,022	14.7%	6.5%
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	100%	11,841	11,841	12,727	12,727	7.5%	13,297	13,297	12.3%	4.5%	13,279	13,279	12.2%	4.3%
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	100%	22,098	22,098	23,491	23,491	6.3%	23,555	23,555	6.6%	0.3%	23,553	23,553	6.6%	0.3%
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	100%	12,474	12,474	13,360	13,360	7.1%	13,424	13,424	7.6%	0.5%	13,422	13,422	7.6%	0.5%
24	Harrison Ave- between East Berkeley Street and Mass. Ave	100%	10,384	10,384	11,271	11,271	8.5%	11,714	11,714	12.8%	3.9%	11,700	11,700	12.7%	3.8%
25	I-90 EB On-Ramp - north of Traveler Street to I-90	100%	7,662	7,662	8,421	8,421	9.9%	8,865	8,865	15.7%	5.3%	8,851	8,851	15.5%	5.1%
26	East Berkeley Street - west of Harrison Ave	100%	11,524	11,524	12,474	12,474	8.2%	12,854	12,854	11.5%	3.0%	12,842	12,842	11.4%	3.0%

# Herald Square, Boston MA

Pollutant **VOC**

## MOBILE 6.2 Emission Factors

2011			2016		
Vehicle Speed (mph)	VOC (g/veh-mile)		Vehicle Speed (mph)	VOC (g/veh-mile)	
	Freeway	Arterial		Freeway	Arterial
2.5	2.2290	2.4000	2.5	1.5050	1.6210
3	1.9800	1.9360	3	1.3400	1.3120
4	1.4000	1.3560	4	0.9530	0.9260
5	1.0520	1.0080	5	0.7220	0.6940
6	0.8750	0.8740	6	0.6020	0.6030
7	0.7750	0.7790	7	0.5330	0.5370
8	0.7000	0.7070	8	0.4820	0.4880
9	0.6410	0.6520	9	0.4420	0.4500
10	0.5950	0.6070	10	0.4100	0.4200
11	0.5580	0.5760	11	0.3850	0.3980
12	0.5310	0.5490	12	0.3650	0.3790
13	0.5080	0.5270	13	0.3490	0.3630
14	0.4880	0.5080	14	0.3350	0.3490
15	0.4710	0.4910	15	0.3230	0.3380
16	0.4560	0.4740	16	0.3120	0.3250
17	0.4440	0.4600	17	0.3030	0.3150
18	0.4330	0.4460	18	0.2950	0.3050
19	0.4240	0.4350	19	0.2880	0.2960
20	0.4150	0.4240	20	0.2820	0.2890
21	0.4070	0.4150	21	0.2760	0.2820
22	0.4010	0.4070	22	0.2710	0.2770
23	0.3950	0.4000	23	0.2670	0.2710
24	0.3890	0.3930	24	0.2630	0.2670
25	0.3840	0.3870	25	0.2600	0.2620
26	0.3790	0.3810	26	0.2560	0.2580
27	0.3750	0.3760	27	0.2530	0.2540
28	0.3710	0.3710	28	0.2500	0.2510
29	0.3670	0.3660	29	0.2470	0.2470
30	0.3630	0.3620	30	0.2440	0.2440
31	0.0359	0.3580	31	0.2420	0.2410
32	0.3560	0.3540	32	0.2390	0.2380
33	0.3520	0.3510	33	0.2370	0.2360
34	0.3490	0.3470	34	0.2340	0.2330
35	0.3460	0.3440	35	0.2320	0.2310
36	0.3440	0.3420	36	0.2300	0.2290
37	0.3410	0.3390	37	0.2290	0.2280
38	0.3390	0.3370	38	0.2270	0.2260
39	0.3370	0.3350	39	0.2260	0.2240
40	0.3350	0.3330	40	0.2240	0.2230
41	0.3330	0.3310	41	0.2230	0.2220
42	0.3320	0.3290	42	0.2210	0.2200
43	0.3300	0.3280	43	0.2200	0.2190
44	0.3280	0.3260	44	0.2190	0.2180
45	0.3270	0.3240	45	0.2180	0.2170
46	0.3250	0.3230	46	0.2170	0.2150
47	0.3240	0.3220	47	0.2160	0.2140
48	0.3220	0.3200	48	0.2150	0.2130
49	0.3210	0.3180	49	0.2140	0.2120
50	0.3200	0.3180	50	0.2130	0.2120
51	0.3190	0.3170	51	0.2120	0.2110
52	0.3180	0.3160	52	0.2120	0.2100
53	0.3170	0.3150	53	0.2110	0.2100
54	0.3170	0.3140	54	0.2110	0.2090
55	0.3170	0.3130	55	0.2110	0.2080
56	0.3160	0.3120	56	0.2110	0.2080
57	0.3160	0.3120	57	0.2110	0.2080
58	0.3160	0.3120	58	0.2110	0.2080
59	0.3160	0.3110	59	0.2110	0.2080
60	0.3160	0.3110	60	0.2110	0.2080
60.7	0.3160	0.3110	60.7	0.2110	0.2080

Factors were calculated	0.316	0.31	0.211	0.21
for each vehicle type during	0.316	0.31	0.211	0.21
	0.32	0.31	0.21	0.21
	0.32	0.31	0.21	0.21

Herald Square, Boston MA

Link No.	Description	2011 Existing Condition					2016 No Build Condition					2016 Build Condition					2016 Build with Mitigation Condition				
		Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)
		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)			
1	Herald Street - between Kneeland Street and Washington Street	40.9	0.0	40.9	0.0	20.5	56.2	0.0	56.2	0.0	28.1	58.1	0.0	58.1	0.0	29.1	58.1	0.0	58.1	0.0	29.1
2	Washington Street - between Herald Street and Kneeland Street	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6
3	Washington Street - between Herald Street and Mass Ave	13.3	0.0	13.3	0.0	6.7	13.5	0.0	13.5	0.0	6.8	13.7	0.0	13.7	0.0	6.9	13.7	0.0	13.7	0.0	6.9
4	Herald Street - between Washington Street and Harrison Ave	29.5	0.0	29.5	0.0	14.8	37.1	0.0	37.1	0.0	18.6	37.8	0.0	37.8	0.0	18.9	37.8	0.0	37.8	0.0	18.9
5	Harrison Ave - between Herald Street and Kneeland Street	0.0	27.1	0.0	27.1	13.6	0.0	27.5	0.0	27.5	13.8	0.0	27.5	0.0	27.5	13.8	0.0	27.5	0.0	27.5	13.8
6	Harrison Ave - between Herald Street and Traveler Street	32.5	0.0	32.5	0.0	16.3	32.6	0.0	32.6	0.0	16.3	32.7	0.0	32.7	0.0	16.4	32.7	0.0	32.7	0.0	16.4
7	Herald Street - between Harrison Ave and Albany Street	95.5	0.0	95.5	0.0	47.8	130.6	0.0	120.0	0.0	60.0	130.6	0.0	120.0	0.0	60.0	130.6	0.0	120.0	0.0	60.0
8	Albany Street - north of Herald Street	0.0	24.6	0.0	24.6	12.3	0.0	26.8	0.0	26.8	13.4	0.0	29.0	0.0	29.0	14.5	0.0	29.0	0.0	29.0	14.5
9	Albany Street - between Herald Street and I-93 SB On-ramp	0.0	4.7	0.0	4.7	2.4	0.0	5.1	0.0	5.1	2.6	0.0	4.5	0.0	4.5	2.3	0.0	4.5	0.0	4.5	2.3
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	0.0	11.6	0.0	11.6	5.8	0.0	15.9	0.0	15.9	8.0	0.0	25.9	0.0	25.9	13.0	0.0	25.9	0.0	25.9	13.0
11	Albany Street between Traveler Street and East Berkeley Street	0.0	23.9	0.0	23.9	12.0	0.0	24.5	0.0	24.5	12.3	0.0	22.8	0.0	22.8	11.4	0.0	22.8	0.0	22.8	11.4
12	Albany Street - between East Berkeley Street and Albany Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	32.1	0.0	32.1	0.0	16.1	33.2	0.0	33.2	0.0	16.6	33.2	0.0	33.2	0.0	16.6	33.2	0.0	33.2	0.0	16.6
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	114.8	0.0	114.8	0.0	57.4	153.4	0.0	120.0	0.0	60.0	150.8	0.0	120.0	0.0	60.0	150.8	0.0	120.0	0.0	60.0
16	Mullins Way - between Washington Street and Harrison Ave	17.5	0.0	17.5	0.0	8.8	19.5	0.0	19.5	0.0	9.8	14.5	0.0	14.5	0.0	7.3	14.5	0.0	14.5	0.0	7.3
17	Traveler Street - between Washington Street and Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	Traveler Street - between Harrison Ave and Albany Street	49.3	16.9	49.3	16.9	33.1	48.8	17.1	48.8	17.1	33.0	48.9	17.7	48.9	17.7	33.3	48.9	17.7	48.9	17.7	33.3
19	East Berkeley Street - between Harrison Ave and Albany Street	0.0	34.6	0.0	34.6	17.3	0.0	39.7	0.0	39.7	19.9	0.0	42.9	0.0	42.9	21.5	0.0	42.9	0.0	42.9	21.5
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	11.2	0.0	11.2	0.0	5.6	11.6	0.0	11.6	0.0	5.8	11.9	0.0	11.9	0.0	6.0	11.9	0.0	11.9	0.0	6.0
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	0.0	8.0	0.0	8.0	4.0	0.0	9.3	0.0	9.3	4.7	0.0	10.7	0.0	10.7	5.4	0.0	10.7	0.0	10.7	5.4
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	0.0	37.4	0.0	37.4	18.7	0.0	38.5	0.0	38.5	19.3	0.0	38.6	0.0	38.6	19.3	0.0	38.6	0.0	38.6	19.3
24	Harrison Ave - between East Berkeley Street and Mass. Ave	26.6	0.0	26.6	0.0	13.3	30.8	0.0	30.8	0.0	15.4	35.2	0.0	35.2	0.0	17.6	35.2	0.0	35.2	0.0	17.6
25	I-90 EB On-Ramp - north of Traveler Street to I-90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	East Berkeley Street - west of Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	Site Drive North - Albany Street	0.0	4.7	0.0	4.7	2.4	0.0	5.1	0.0	5.1	2.6	0.0	4.5	0.0	4.5	2.3	0.0	4.5	0.0	4.5	2.3
28	Site Drive South - Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.0	9.4	4.7	0.0	9.4	0.0	9.4	4.7
29	Site Drive -Traveler Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	54.4	2.0	54.4	28.2	2.0	54.4	2.0	54.4	28.2
30	Site Drive - No Data	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	I-90 - west of 93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	I-90 - east of 93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	I-93 - north of 90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	I-93 - south of 90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Herald Square, Boston MA  
PM Peak Condition

Int	Description	2011 Existing Condition Delay by Approach				2016 No Build Condition Delay by Approach				2016 Build Condition Delay by Approach				2016 Build with Mitigation Condition Delay by Approach			
		Northbound NB.EX	Southbound SB.EX	Eastbound EB.EX	Westbound WB.EX	Northbound NB.NB	Southbound SB.NB	Eastbound EB.NB	Westbound WB.NB	Northbound NB.BL	Southbound SB.BL	Eastbound EB.BL	Westbound WB.BL	Northbound NB.BLM	Southbound SB.BLM	Eastbound EB.BLM	Westbound WB.BLM
Int1	<a href="#">Herald Street and Washington Street</a>	13.3	11.1	40.9	0.0	13.5	11.1	56.2	0.0	13.7	11.1	58.1	0.0	13.7	11.1	58.1	0.0
Int2	<a href="#">Herald Street and Harrison Avenue</a>	32.5	27.1	29.5	0.0	32.6	27.5	37.1	0.0	32.7	27.5	37.8	0.0	32.7	27.5	37.8	0.0
Int3	<a href="#">Herald Street and Albany Street</a>	0.0	24.6	95.5	0.0	0.0	26.8	130.6	0.0	0.0	29.0	130.6	0.0	0.0	29.0	130.6	0.0
Int4	<a href="#">Traveler Street and Harrison Avenue</a>	40.1	41.8	0.0	16.9	41.6	62.5	0.0	17.1	45.5	176.5	0.0	17.7	45.5	176.5	0.0	17.7
Int5	<a href="#">Traveler Street and Albany Street</a>	0.0	11.6	49.3	0.0	0.0	15.9	48.8	0.0	0.0	25.9	48.9	0.0	0.0	25.9	48.9	0.0
Int6	<a href="#">Traveler Street and Frontage Road</a>	32.1	0.0	11.2	0.0	33.2	0.0	11.6	0.0	33.2	0.0	11.9	0.0	33.2	0.0	11.9	0.0
Int7	<a href="#">East Berkeley Street and Harrison Ave</a>	26.6	10.7	0.0	34.6	30.8	10.7	0.0	39.7	35.2	15.0	0.0	42.9	35.2	15.0	0.0	42.9
Int8	<a href="#">East Berkeley Street and Albany Street</a>	0.0	23.9	0.0	8.0	0.0	24.5	0.0	9.3	0.0	22.8	0.0	10.7	0.0	22.8	0.0	10.7
Int9	<a href="#">East Berkeley Street and Frontage Road</a>	114.8	0.0	0.0	37.4	153.4	0.0	0.0	38.5	150.8	0.0	0.0	38.6	150.8	0.0	0.0	38.6
Int10	<a href="#">William E. Mullins Way and Harrison Avenue</a>	4.4	0.0	17.5	16.6	4.7	0.0	19.5	18.1	4.5	0.0	14.5	0.0	4.5	0.0	14.5	0.0
Int11	<a href="#">Boston Herald Back and Albany Street</a>	0.0	4.7	Err	0.0	0.0	5.1	Err	0.0	0.0	4.5	10.2	0.0	0.0	4.5	10.2	0.0
Int12	<a href="#">South Site Driveway and Harrison Avenue</a>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.0	0.0	0.0	9.4
Int13	<a href="#">North Site Driveway and Harrison Avenue- No Data</a>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Int 14	<a href="#">Traveler Street and Site Driveway</a>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.4	2.0	0.5	0.0	54.4	2.0	0.5

# Herald Square, Boston MA

[Harrison Avenue, south of Herald Street](#)

Thursday 03/03/2011					Friday 03/04/2011					Weekday Average				
Begin Time	Volume	V/C Ratio	Peak Period Data		Begin Time	Volume	V/C Ratio	Peak Period Data		Begin Time	Volume	V/C Ratio	Peak Period Data	
			Hours	Volume				Hours	Volume				Hours	Volume
12:00 AM	70	0.06	0	0	12:00 AM	73	0.06	0	0	12:00 AM	72	0.06	0	0
1:00 AM	55	0.05	0	0	1:00 AM	71	0.06	0	0	1:00 AM	63	0.05	0	0
2:00 AM	41	0.03	0	0	2:00 AM	71	0.06	0	0	2:00 AM	56	0.05	0	0
3:00 AM	42	0.04	0	0	3:00 AM	49	0.04	0	0	3:00 AM	46	0.04	0	0
4:00 AM	57	0.05	0	0	4:00 AM	62	0.05	0	0	4:00 AM	60	0.05	0	0
5:00 AM	76	0.06	0	0	5:00 AM	74	0.06	0	0	5:00 AM	75	0.06	0	0
6:00 AM	151	0.13	0	0	6:00 AM	138	0.12	0	0	6:00 AM	145	0.12	0	0
7:00 AM	258	0.22	0	0	7:00 AM	288	0.24	0	0	7:00 AM	273	0.23	0	0
8:00 AM	361	0.30	1	361	8:00 AM	381	0.32	0	0	8:00 AM	371	0.31	0	0
9:00 AM	387	0.32	1	387	9:00 AM	395	0.33	0	0	9:00 AM	391	0.33	1	391
10:00 AM	341	0.28	0	0	10:00 AM	372	0.31	0	0	10:00 AM	357	0.30	0	0
11:00 AM	412	0.34	1	412	11:00 AM	412	0.34	0	0	11:00 AM	412	0.34	1	412
12:00 PM	350	0.29	0	0	12:00 PM	385	0.32	0	0	12:00 PM	368	0.31	0	0
1:00 PM	348	0.29	0	0	1:00 PM	423	0.35	1	423	1:00 PM	386	0.32	0	0
2:00 PM	419	0.35	1	419	2:00 PM	463	0.39	1	463	2:00 PM	441	0.37	1	441
3:00 PM	544	0.45	1	544	3:00 PM	528	0.44	1	528	3:00 PM	536	0.45	1	536
4:00 PM	555	0.46	1	555	4:00 PM	591	0.49	1	591	4:00 PM	573	0.48	1	573
5:00 PM	574	0.48	1	574	5:00 PM	589	0.49	1	589	5:00 PM	582	0.48	1	582
6:00 PM	322	0.27	0	0	6:00 PM	458	0.38	1	458	6:00 PM	390	0.33	1	390
7:00 PM	231	0.19	0	0	7:00 PM	306	0.26	0	0	7:00 PM	269	0.22	0	0
8:00 PM	169	0.14	0	0	8:00 PM	257	0.21	0	0	8:00 PM	213	0.18	0	0
9:00 PM	143	0.12	0	0	9:00 PM	182	0.15	0	0	9:00 PM	163	0.14	0	0
10:00 PM	155	0.13	0	0	10:00 PM	214	0.18	0	0	10:00 PM	185	0.15	0	0
11:00 PM	125	0.10	0	0	11:00 PM	218	0.18	0	0	11:00 PM	172	0.14	0	0
<b>Total</b>	<b>6,186</b>		<b>7</b>	<b>3,252</b>	<b>Total</b>	<b>7,000</b>		<b>6</b>	<b>3,052</b>	<b>Total</b>	<b>6,593</b>		<b>7</b>	<b>3,325</b>
<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>	<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>	<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>
		<b>30%</b>		<b>360</b>			<b>35%</b>		<b>420</b>			<b>33%</b>		<b>390</b>
<b>Peak Hour (K) Factor</b>		<b>0.093</b>	<b>(4:00-5:00 PM)</b>		<b>Peak Hour (K) Factor</b>		<b>0.084</b>	<b>(4:00-5:00 PM)</b>		<b>Peak Hour (K) Factor</b>		<b>0.088</b>	<b>(4:00-5:00 PM)</b>	
<b>Peak Period Volume Factor</b>			<b>0.526</b>		<b>Peak Period Volume Factor</b>			<b>0.436</b>		<b>Peak Period Volume Factor</b>			<b>0.504</b>	

**Herald Square, Boston MA**  
**Average Daily Traffic (ADT) for Mesoscale Roadway Network**

Estimated TDM Adjustment = 3.10%

Unadjusted PM Peak Hour

Roadway Segment	2011 Existing Condition	2016 No Build Condition	2016 Build Condition	2016 Build with Mitigation Condition	K Factor	Seasonal Adjustment Factor	2011 Existing Condition	2016 No Build Condition	2016 Build Condition	2016 Build with Mitigation Condition
	Volume (ADT)	Volume (ADT)	Volume (ADT)	Volume (ADT)			Volume (ADT)	Volume (ADT)	Volume (ADT)	Volume (ADT)
					8.8%	111.4%				
1 Herald Street - between Kneeland Street and Washington Street	17,539	18,996	19,122	19,118			1385	1500	1510	1510
2 Washington Street - between Herald Street and Kneeland Street	7,915	8,358	8,675	8,665			625	660	685	684
3 Washington Street - between Herald Street and Mass Ave	7,915	8,358	8,675	8,665			625	660	685	684
4 Herald Street - between Washington Street and Harrison Ave	17,539	18,996	19,122	19,118			1385	1500	1510	1510
5 Harrison Ave - between Herald Street and Kneeland Street	4,559	5,065	5,319	5,311			360	400	420	419
6 Harrison Ave - between Herald Street and Traveler Street	7,662	8,485	9,118	9,098			605	670	720	718
7 Herald Street - between Harrison Ave and Albany Street	18,869	20,262	20,262	20,262			1490	1600	1600	1600
8 Albany Street - north of Herald Street	18,616	20,325	21,528	21,491			1470	1605	1700	1697
9 Albany Street - between Herald Street and I-93 SB On-ramp	37,485	40,587	41,790	41,753			2960	3205	3300	3297
10 Albany Street - between I-93 SB On-Ramp and Traveler Street	26,277	28,557	29,823	29,784			2075	2255	2355	2352
11 Albany Street between Traveler Street and East Berkeley Street	12,347	13,930	14,373	14,360			975	1100	1135	1134
12 Albany Street - between East Berkeley Street and Albany Street	10,701	11,714	12,157	12,143			845	925	960	959
13 I-93 NB On-Ramp - north of Traveler Street to I-93	18,299	19,692	20,389	20,367			1445	1555	1610	1608
14 I-93 NB On-Ramp - between Traveler Street and West 4th Street	13,487	14,753	14,753	14,753			1065	1165	1165	1165
15 I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	21,212	23,175	23,681	23,665			1675	1830	1870	1869
16 Mullins Way - between Washington Street and Harrison Ave	3,229	3,483	3,546	3,544			255	275	280	280
17 Traveler Street - between Washington Street and Harrison Ave	1,456	1,583	1,836	1,828			115	125	145	144
18 Traveler Street - between Harrison Ave and Albany Street	4,432	5,699	8,421	8,337			350	450	665	658
19 East Berkeley Street - between Harrison Ave and Albany Street	13,487	14,690	15,196	15,181			1065	1160	1200	1199
20 Traveler Street - between Albany Street and I-93 NB On-Ramp	16,589	17,856	19,059	19,022			1310	1410	1505	1502
21 East Berkeley Street - between Albany Street and I-93 NB On-Ramp	11,841	12,727	13,297	13,279			935	1005	1050	1049
22 Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	22,098	23,491	23,555	23,553			1745	1855	1860	1860
23 West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	12,474	13,360	13,424	13,422			985	1055	1060	1060
24 Harrison Ave- between East Berkeley Street and Mass. Ave	10,384	11,271	11,714	11,700			820	890	925	924
25 I-90 EB On-Ramp - north of Traveler Street to I-90	7,662	8,421	8,865	8,851			605	665	700	699
26 East Berkeley Street - west of Harrison Ave	11,524	12,474	12,854	12,842			910	985	1015	1014
27 Site Drive North - Albany Street	0	0	127	123			0	0	10	10
28 Site Drive South - Harrison Ave	0	0	1,013	982			0	0	80	78
29 Site Drive -Traveler Street	0	0	5,103	4,945			0	0	403	391
30 Site Drive - No Data	0	0	0	0			0	0	0	0
31 I-90 - west of 93	1,000,066	1,104,154	1,104,154	1,104,154			78,971	87,190	87,190	87190
32 I-90 - east of 93	447,447	494,018	494,018	494,018			35,333	39,010	39,010	39010
33 I-93 - north of 90	1,004,233	1,108,754	1,108,754	1,108,754			79,300	87,554	87,554	87554
34 I-93 - south of 90	538,208	594,225	594,225	594,225			42,500	46,923	46,923	46923

# Herald Square, Boston MA

STATION 8932 - BOSTON - RTE.I-93 - NORTH OF GRANITE AVE. AT HALLET ST.

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
04	170,788	180,330	186,604	178,396	198,379	197,000	198,000	200,961	195,770	196,686	195,000	194,000	190,993
						August	-	February					111%



## Herald Square, Boston MA

### Mesoscale Roadway Data

Link No.	Description	Roadway Type 1=Freeway 2=Arterial	Link Length (miles)	Speed Limit (mph)	Existing		No Build		Build	
					Peak Speed (mph)	Off-Peak Speed (mph)	Peak Speed (mph)	Off-Peak Speed (mph)	Peak Speed (mph)	Off-Peak Speed (mph)
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	30	20	30	20	30	20	30
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	30	20	30	20	30	20	30
3	Washington Street - between Herald Street and Mass Ave	2	0.97	30	20	30	20	30	20	30
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	30	20	30	20	30	20	30
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	30	20	30	20	30	20	30
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	30	20	30	20	30	20	30
7	Herald Street - between Harrison Ave and Albany Street	2	0.1	30	20	30	20	30	20	30
8	Albany Street - north of Herald Street	2	0.21	30	20	30	20	30	20	30
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	30	20	30	20	30	20	30
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	30	20	30	20	30	20	30
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	30	20	30	20	30	20	30
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	30	20	30	20	30	20	30
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	30	20	30	20	30	20	30
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	30	20	30	20	30	20	30
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	30	20	30	20	30	20	30
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	30	20	30	20	30	20	30
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	30	20	30	20	30	20	30
18	Traveler Street - between Harrison Ave and Albany Street	2	0.1	30	20	30	20	30	20	30
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.1	30	20	30	20	30	20	30
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	30	20	30	20	30	20	30
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	30	20	30	20	30	20	30
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	30	20	30	20	30	20	30
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	30	20	30	20	30	20	30
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	30	20	30	20	30	20	30
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	30	20	30	20	30	20	30
26	East Berkeley Street - west of Harrison Ave	2	0.3	30	20	30	20	30	20	30
27	Site Drive North - Albany Street	2	0.02	30	20	30	20	30	20	30
28	Site Drive South - Harrison Ave	2	0.02	30	20	30	20	30	20	30
29	Site Drive -Traveler Street	2	0.02	30	20	30	20	30	20	30
30	Site Drive - No Data	2	0.02	30	20	30	20	30	20	30
31	I-90 - west of 93	1	1.41	65	55	65	55	65	55	65
32	I-90 - east of 93	1	1.22	65	55	65	55	65	55	65
33	I-93 - north of 90	1	1.38	65	55	65	55	65	55	65
34	I-93 - south of 90	1	0.8	65	55	65	55	65	55	65

## Particulate Matter<sub>2.5</sub> (PM<sub>2.5</sub>)

# Herald Square, Boston MA

## PM25 Emissions Inventory in Kilograms per Day

<u>Pollutant</u>	<u>2011 Existing Condition</u>	<u>2016 No Build Condition</u>	<u>2016 Build Condition</u>	<u>2016 Build with Mitigation Condition</u>
Particulate Matter 2.5 (PM2.5)	84.643	64.550	64.596	64.595
Project Emission			0.045	-
Difference with Build Condition				(0.001)
Percent Reduction from Mitigation				-3.0%

**Herald Square, Boston MA**  
**2016 Build with Mitigation Condition**

Link No.	Description	Seasonal			PEAK PERIOD			OFF-PEAK PERIOD				
		Roadway Link Length Type	Adjusted Volume (miles) (vehicles)	VMT Peak (veh-miles)	Speed Peak (mph)	E.M.F. PM25 (g/veh-mi)	Emissions PM25 (Kg/day)	VMT Off-Peak (veh-miles)	Speed Off-Peak (mph)	E.M.F. PM25 (g/veh-mi)	Emissions PM25 (Kg/day)	
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	19,118	3,953	20	0.02	0.06	3,886	30	0.02	0.06
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	8,665	1,354	20	0.02	0.02	1,332	30	0.02	0.02
3	Washington Street - between Herald Street and Mass Ave	2	0.97	8,665	4,238	20	0.02	0.06	4,167	30	0.02	0.06
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	19,118	771	20	0.02	0.01	758	30	0.02	0.01
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	5,311	1,178	20	0.02	0.02	1,158	30	0.02	0.02
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	9,098	275	20	0.02	0.00	271	30	0.02	0.00
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	20,262	1,022	20	0.02	0.02	1,004	30	0.02	0.02
8	Albany Street - north of Herald Street	2	0.21	21,491	2,276	20	0.02	0.03	2,237	30	0.02	0.03
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	41,753	632	20	0.02	0.01	621	30	0.02	0.01
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	29,784	1,652	20	0.02	0.03	1,624	30	0.02	0.02
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	14,360	507	20	0.02	0.01	498	30	0.02	0.01
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	12,143	1,286	20	0.02	0.02	1,264	30	0.02	0.02
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	20,367	822	20	0.02	0.01	808	30	0.02	0.01
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	14,753	595	20	0.02	0.01	585	30	0.02	0.01
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	23,665	6,325	20	0.02	0.10	6,218	30	0.02	0.09
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,544	125	20	0.02	0.00	123	30	0.02	0.00
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,828	74	20	0.02	0.00	73	30	0.02	0.00
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	8,337	420	20	0.02	0.01	413	30	0.02	0.01
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	15,181	765	20	0.02	0.01	753	30	0.02	0.01
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	19,022	575	20	0.02	0.01	566	30	0.02	0.01
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	13,279	335	20	0.02	0.01	329	30	0.02	0.01
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	23,553	2,494	20	0.02	0.04	2,452	30	0.02	0.04
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	13,422	1,692	20	0.02	0.03	1,663	30	0.02	0.03
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	11,700	4,779	20	0.02	0.07	4,698	30	0.02	0.07
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	8,851	357	20	0.02	0.01	351	30	0.02	0.01
26	East Berkeley Street - west of Harrison Ave	2	0.30	12,842	1,943	20	0.02	0.03	1,910	30	0.02	0.03
27	Site Drive North - Albany Street	2	0.02	123	1	20	0.02	0.00	1	30	0.02	0.00
28	Site Drive South - Harrison Ave	2	0.02	982	10	20	0.02	0.00	10	30	0.02	0.00
29	Site Drive -Traveler Street	2	0.02	4,945	50	20	0.02	0.00	49	30	0.02	0.00
30	Site Drive - No Data	2	0.02	0	0	20	0.02	0.00	0	30	0.02	0.00
31	I-90 - west of 93	1	1.41	1,104,154	785,040	55	0.02	11.93	771,817	65	0.02	11.73
32	I-90 - east of 93	1	1.22	494,018	303,910	55	0.02	4.62	298,791	65	0.02	4.54
33	I-93 - north of 90	1	1.38	1,108,754	771,538	55	0.02	11.73	758,542	65	0.02	11.53
34	I-93 - south of 90	1	0.80	594,225	239,709	55	0.02	3.64	235,671	65	0.02	3.58

**Mesoscale Emissions**  
(kilograms/day)

**64.6**

**Peak Emissions Inventory**

<b>VMT Emissions (kg/day)</b>	<b>PM25</b>
VMT = 2,140,704	<b>32.5</b>

<b>Idle Emissions (kg/day)</b>	<b>PM25</b>
	<b>0.0</b>

**Off-Peak Emissions Inventory**

<b>VMT Emissions (kg/day)</b>	<b>PM25</b>
VMT = 2,104,644	<b>32.0</b>

<b>Idle Emissions (kg/day)</b>	<b>PM25</b>
	<b>0.0</b>

**Herald Square, Boston MA**  
**2016 Build with Mitigation Condition**

Nox No.	Description	Seasonally Adjusted		Peak	Peak Traffic Data			Off-Peak Traffic Data		
		AADT (veh/day)	ADT (veh/day)	Period Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	19,118	19,118	0.50	9,640	29.1	280,052	9,478	26.15	247,801
2	Washington Street - between Herald Street and Kneeland Street	8,665	8,665	0.50	4,369	5.6	24,249	4,296	5.00	21,457
3	Washington Street - between Herald Street and Mass Ave	8,665	8,665	0.50	4,369	6.9	29,929	4,296	6.17	26,482
4	Herald Street - between Washington Street and Harrison Ave	19,118	19,118	0.50	9,640	18.9	182,202	9,478	17.01	161,220
5	Harrison Ave - between Herald Street and Kneeland Street	5,311	5,311	0.50	2,678	13.8	36,823	2,633	12.38	32,582
6	Harrison Ave - between Herald Street and Traveler Street	9,098	9,098	0.50	4,588	16.4	75,010	4,510	14.72	66,372
7	Herald Street - between Harrison Ave and Albany Street	20,262	20,262	0.50	10,217	60.0	613,021	10,045	54.00	542,426
8	Albany Street - north of Herald Street	21,491	21,491	0.50	10,837	14.5	157,133	10,654	13.05	139,038
9	Albany Street - between Herald Street and I-93 SB On-ramp	41,753	41,753	0.50	21,054	2.3	47,371	20,699	2.03	41,916
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	29,784	29,784	0.50	15,018	13.0	194,488	14,765	11.66	172,091
11	Albany Street between Traveler Street and East Berkeley Street	14,360	14,360	0.50	7,241	11.4	82,545	7,119	10.26	73,039
12	Albany Street - between East Berkeley Street and Albany Street	12,143	12,143	0.50	6,123	0.0	0	6,020	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	20,367	20,367	0.50	10,270	0.0	0	10,097	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,753	14,753	0.50	7,439	16.6	123,492	7,314	14.94	109,271
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	23,665	23,665	0.50	11,933	60.0	715,994	11,732	54.00	633,540
16	Mullins Way - between Washington Street and Harrison Ave	3,544	3,544	0.50	1,787	7.3	12,956	1,757	6.53	11,464
17	Traveler Street - between Washington Street and Harrison Ave	1,828	1,828	0.50	922	0.0	0	906	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	8,337	8,337	0.50	4,204	33.3	139,990	4,133	29.97	123,868
19	East Berkeley Street - between Harrison Ave and Albany Street	15,181	15,181	0.50	7,655	21.5	164,197	7,526	19.31	145,288
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	19,022	19,022	0.50	9,592	6.0	57,070	9,430	5.36	50,498
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	13,279	13,279	0.50	6,696	5.4	35,824	6,583	4.82	31,698
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	23,553	23,553	0.50	11,876	0.0	0	11,676	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	13,422	13,422	0.50	6,768	19.3	130,618	6,654	17.37	115,576
24	Harrison Ave- between East Berkeley Street and Mass. Ave	11,700	11,700	0.50	5,900	17.6	103,836	5,800	15.84	91,878
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,851	8,851	0.50	4,463	0.0	0	4,388	0.00	0
26	East Berkeley Street - west of Harrison Ave	12,842	12,842	0.50	6,475	0.0	0	6,366	0.00	0
27	Site Drive North - Albany Street	123	123	0.50	62	2.3	139	61	2.03	123
28	Site Drive South - Harrison Ave	982	982	0.50	495	4.7	2,327	487	4.23	2,059
29	Site Drive -Traveler Street	4,945	4,945	0.50	2,494	28.2	70,321	2,452	25.38	62,222
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,104,154	1,104,154	0.50	556,766	0.0	0	547,388	0.00	0
32	I-90 - east of 93	494,018	494,018	0.50	249,107	0.0	0	244,911	0.00	0
33	I-93 - north of 90	1,108,754	1,108,754	0.50	559,086	0.0	0	549,668	0.00	0
34	I-93 - south of 90	594,225	594,225	0.50	299,636	0.0	0	294,589	0.00	0

Freeway	0	0
Arterial	3,279,585	2,901,908

**Idle Emission Parameters**

Pollutant	Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)
Freeway	0.0000	0	0.00	0.0000	0	0.00
Arterial	0.0000	35	0.03	0.0000	31	0.03
Total			0.03			0.03

0.030%  
99.970%

## Herald Square, Boston MA

### 2016 Build Condition

Link No.	Description	Seasonal			PEAK PERIOD			OFF-PEAK PERIOD				
		Roadway	Adjusted	VMT	Speed	E.M.F.	Emissions	VMT	Speed	E.M.F.	Emissions	
		Link Length	Volume	Peak	Peak	PM25	PM25	Off-Peak	Off-Peak	PM25	PM25	
Type	(miles)	(vehicles)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)		
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	19,122	3,953	20	0.02	0.06	3,887	30	0.02	0.06
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	8,675	1,356	20	0.02	0.02	1,333	30	0.02	0.02
3	Washington Street - between Herald Street and Mass Ave	2	0.97	8,675	4,243	20	0.02	0.06	4,171	30	0.02	0.06
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	19,122	771	20	0.02	0.01	758	30	0.02	0.01
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	5,319	1,180	20	0.02	0.02	1,160	30	0.02	0.02
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	9,118	276	20	0.02	0.00	271	30	0.02	0.00
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	20,262	1,022	20	0.02	0.02	1,004	30	0.02	0.02
8	Albany Street - north of Herald Street	2	0.21	21,528	2,280	20	0.02	0.03	2,241	30	0.02	0.03
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	41,790	632	20	0.02	0.01	622	30	0.02	0.01
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	29,823	1,654	20	0.02	0.03	1,626	30	0.02	0.02
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	14,373	507	20	0.02	0.01	499	30	0.02	0.01
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	12,157	1,287	20	0.02	0.02	1,266	30	0.02	0.02
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	20,389	822	20	0.02	0.01	809	30	0.02	0.01
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	14,753	595	20	0.02	0.01	585	30	0.02	0.01
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	23,681	6,329	20	0.02	0.10	6,222	30	0.02	0.09
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,546	125	20	0.02	0.00	123	30	0.02	0.00
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,836	74	20	0.02	0.00	73	30	0.02	0.00
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	8,421	425	20	0.02	0.01	417	30	0.02	0.01
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	15,196	766	20	0.02	0.01	753	30	0.02	0.01
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	19,059	577	20	0.02	0.01	567	30	0.02	0.01
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	13,297	335	20	0.02	0.01	330	30	0.02	0.01
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	23,555	2,494	20	0.02	0.04	2,452	30	0.02	0.04
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	13,424	1,692	20	0.02	0.03	1,664	30	0.02	0.03
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	11,714	4,784	20	0.02	0.07	4,704	30	0.02	0.07
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	8,865	358	20	0.02	0.01	352	30	0.02	0.01
26	East Berkeley Street - west of Harrison Ave	2	0.30	12,854	1,944	20	0.02	0.03	1,912	30	0.02	0.03
27	Site Drive North - Albany Street	2	0.02	127	1	20	0.02	0.00	1	30	0.02	0.00
28	Site Drive South - Harrison Ave	2	0.02	1,013	10	20	0.02	0.00	10	30	0.02	0.00
29	Site Drive -Traveler Street	2	0.02	5,103	51	20	0.02	0.00	51	30	0.02	0.00
30	Site Drive - No Data	2	0.02	0	0	20	0.02	0.00	0	30	0.02	0.00
31	I-90 - west of 93	1	1.41	1,104,154	785,040	55	0.02	11.93	771,817	65	0.02	11.73
32	I-90 - east of 93	1	1.22	494,018	303,910	55	0.02	4.62	298,791	65	0.02	4.54
33	I-93 - north of 90	1	1.38	1,108,754	771,538	55	0.02	11.73	758,542	65	0.02	11.53
34	I-93 - south of 90	1	0.80	594,225	239,709	55	0.02	3.64	235,671	65	0.02	3.58

**Mesoscale NOx Emissions  
(kilograms/day)**

**64.6**

Peak Emissions Inventory		Off-Peak Emissions Inventory	
VMT Emissions (kg/day)	PM25	VMT Emissions (kg/day)	PM25
VMT = 2,140,744	<b>32.5</b>	VMT = 2,104,684	<b>32.0</b>
Idle Emissions (kg/day)	PM25	Idle Emissions (kg/day)	PM25
	<b>0.0</b>		<b>0.0</b>

## Herald Square, Boston MA

### 2016 Build Condition

Nox No.	Description	Seasonally		Peak	Peak Traffic Data			Off-Peak Traffic Data		
		Adjusted AADT (veh/day)	Period ADT (veh/day)	Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	19,122	19,122	0.50	9,642	29.1	280,109	9,480	26.15	247,852
2	Washington Street - between Herald Street and Kneeland Street	8,675	8,675	0.50	4,374	5.6	24,277	4,300	5.00	21,481
3	Washington Street - between Herald Street and Mass Ave	8,675	8,675	0.50	4,374	6.9	29,963	4,300	6.17	26,512
4	Herald Street - between Washington Street and Harrison Ave	19,122	19,122	0.50	9,642	18.9	182,240	9,480	17.01	161,253
5	Harrison Ave - between Herald Street and Kneeland Street	5,319	5,319	0.50	2,682	13.8	36,877	2,637	12.38	32,630
6	Harrison Ave - between Herald Street and Traveler Street	9,118	9,118	0.50	4,598	16.4	75,172	4,520	14.72	66,515
7	Herald Street - between Harrison Ave and Albany Street	20,262	20,262	0.50	10,217	60.0	613,021	10,045	54.00	542,426
8	Albany Street - north of Herald Street	21,528	21,528	0.50	10,856	14.5	157,406	10,673	13.05	139,279
9	Albany Street - between Herald Street and I-93 SB On-ramp	41,790	41,790	0.50	21,073	2.3	47,413	20,718	2.03	41,953
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	29,823	29,823	0.50	15,038	13.0	194,744	14,785	11.66	172,318
11	Albany Street between Traveler Street and East Berkeley Street	14,373	14,373	0.50	7,248	11.4	82,624	7,126	10.26	73,109
12	Albany Street - between East Berkeley Street and Albany Street	12,157	12,157	0.50	6,130	0.0	0	6,027	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	20,389	20,389	0.50	10,281	0.0	0	10,108	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,753	14,753	0.50	7,439	16.6	123,492	7,314	14.94	109,271
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	23,681	23,681	0.50	11,941	60.0	716,469	11,740	54.00	633,960
16	Mullins Way - between Washington Street and Harrison Ave	3,546	3,546	0.50	1,788	7.3	12,963	1,758	6.53	11,470
17	Traveler Street - between Washington Street and Harrison Ave	1,836	1,836	0.50	926	0.0	0	910	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	8,421	8,421	0.50	4,246	33.3	141,407	4,175	29.97	125,122
19	East Berkeley Street - between Harrison Ave and Albany Street	15,196	15,196	0.50	7,663	21.5	164,366	7,534	19.31	145,438
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	19,059	19,059	0.50	9,610	6.0	57,182	9,449	5.36	50,597
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	13,297	13,297	0.50	6,705	5.4	35,871	6,592	4.82	31,740
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	23,555	23,555	0.50	11,877	0.0	0	11,677	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	13,424	13,424	0.50	6,769	19.3	130,637	6,655	17.37	115,593
24	Harrison Ave- between East Berkeley Street and Mass. Ave	11,714	11,714	0.50	5,907	17.6	103,958	5,807	15.84	91,986
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,865	8,865	0.50	4,470	0.0	0	4,395	0.00	0
26	East Berkeley Street - west of Harrison Ave	12,854	12,854	0.50	6,481	0.0	0	6,372	0.00	0
27	Site Drive North - Albany Street	127	127	0.50	64	2.3	144	63	2.03	127
28	Site Drive South - Harrison Ave	1,013	1,013	0.50	511	4.7	2,401	502	4.23	2,125
29	Site Drive -Traveler Street	5,103	5,103	0.50	2,573	28.2	72,570	2,530	25.38	64,213
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,104,154	1,104,154	0.50	556,766	0.0	0	547,388	0.00	0
32	I-90 - east of 93	494,018	494,018	0.50	249,107	0.0	0	244,911	0.00	0
33	I-93 - north of 90	1,108,754	1,108,754	0.50	559,086	0.0	0	549,668	0.00	0
34	I-93 - south of 90	594,225	594,225	0.50	299,636	0.0	0	294,589	0.00	0

Freeway	0	0
Arterial	3,285,307	2,906,970

#### Idle Emission Parameters

Pollutant	Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)
Freeway PM25	0.0000	0	<b>0.00</b>	0.0000	0	<b>0.00</b>
Arterial PM25	0.0000	35	<b>0.03</b>	0.0000	31	<b>0.03</b>
<b>Total</b>			<b>0.03</b>			<b>0.03</b>

## Herald Square, Boston MA

### 2016 No Build Condition

Link No.	Description	Roadway		Seasonal		PEAK PERIOD			OFF-PEAK PERIOD			
		Link Length	Type	Adjusted	VMT	Speed	E.M.F.	Emissions	VMT	Speed	E.M.F.	Emissions
				Volume	Peak	Peak	PM25	PM25	Off-Peak	Off-Peak	PM25	PM25
(miles)	(vehicles)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)			
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	18,996	3,927	20	0.02	0.06	3,861	30	0.02	0.06
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	8,358	1,307	20	0.02	0.02	1,284	30	0.02	0.02
3	Washington Street - between Herald Street and Mass Ave	2	0.97	8,358	4,088	20	0.02	0.06	4,019	30	0.02	0.06
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	18,996	766	20	0.02	0.01	753	30	0.02	0.01
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	5,065	1,124	20	0.02	0.02	1,105	30	0.02	0.02
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	8,485	257	20	0.02	0.00	252	30	0.02	0.00
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	20,262	1,022	20	0.02	0.02	1,004	30	0.02	0.02
8	Albany Street - north of Herald Street	2	0.21	20,325	2,152	20	0.02	0.03	2,116	30	0.02	0.03
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	40,587	614	20	0.02	0.01	604	30	0.02	0.01
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	28,557	1,584	20	0.02	0.02	1,557	30	0.02	0.02
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	13,930	492	20	0.02	0.01	483	30	0.02	0.01
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	11,714	1,240	20	0.02	0.02	1,220	30	0.02	0.02
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	19,692	794	20	0.02	0.01	781	30	0.02	0.01
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	14,753	595	20	0.02	0.01	585	30	0.02	0.01
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	23,175	6,193	20	0.02	0.09	6,089	30	0.02	0.09
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,483	123	20	0.02	0.00	121	30	0.02	0.00
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,583	64	20	0.02	0.00	63	30	0.02	0.00
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	5,699	287	20	0.02	0.00	283	30	0.02	0.00
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	14,690	741	20	0.02	0.01	728	30	0.02	0.01
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	17,856	540	20	0.02	0.01	531	30	0.02	0.01
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	12,727	321	20	0.02	0.00	315	30	0.02	0.00
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	23,491	2,488	20	0.02	0.04	2,446	30	0.02	0.04
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	13,360	1,684	20	0.02	0.03	1,656	30	0.02	0.03
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	11,271	4,603	20	0.02	0.07	4,526	30	0.02	0.07
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	8,421	340	20	0.02	0.01	334	30	0.02	0.01
26	East Berkeley Street - west of Harrison Ave	2	0.30	12,474	1,887	20	0.02	0.03	1,855	30	0.02	0.03
27	Site Drive North - Albany Street	2	0.02	0	0	20	0.02	0.00	0	30	0.02	0.00
28	Site Drive South - Harrison Ave	2	0.02	0	0	20	0.02	0.00	0	30	0.02	0.00
29	Site Drive -Traveler Street	2	0.02	0	0	20	0.02	0.00	0	30	0.02	0.00
30	Site Drive - No Data	2	0.02	0	0	20	0.02	0.00	0	30	0.02	0.00
31	I-90 - west of 93	1	1.41	1,104,154	785,040	55	0.02	11.93	771,817	65	0.02	11.73
32	I-90 - east of 93	1	1.22	494,018	303,910	55	0.02	4.62	298,791	65	0.02	4.54
33	I-93 - north of 90	1	1.38	1,108,754	771,538	55	0.02	11.73	758,542	65	0.02	11.53
34	I-93 - south of 90	1	0.80	594,225	239,709	55	0.02	3.64	235,671	65	0.02	3.58

**Mesoscale NOx Emissions  
(kilograms/day)**

**64.6**

**Peak Emissions Inventory**

<b>VMT Emissions (kg/day)</b>	<b>PM25</b>	<b>VMT Emissions (kg/day)</b>	<b>PM25</b>
VMT = 2,139,431	<b>32.5</b>	VMT = 2,103,393	<b>32.0</b>

**Off-Peak Emissions Inventory**

<b>Idle Emissions (kg/day)</b>	<b>PM25</b>	<b>Idle Emissions (kg/day)</b>	<b>PM25</b>
	<b>0.0</b>		<b>0.0</b>



## Herald Square, Boston MA

### 2016 No Build Condition

Nox No.	Description	Seasonally Adjusted			Peak Traffic Data			Off-Peak Traffic Data		
		AAADT (veh/day)	ADT (veh/day)	Peak Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	18,996	18,996	0.50	9,578	28.1	269,155	9,417	25.29	238,159
2	Washington Street - between Herald Street and Kneeland Street	8,358	8,358	0.50	4,215	5.6	23,391	4,144	5.00	20,697
3	Washington Street - between Herald Street and Mass Ave	8,358	8,358	0.50	4,215	6.8	28,448	4,144	6.08	25,172
4	Herald Street - between Washington Street and Harrison Ave	18,996	18,996	0.50	9,578	18.6	177,680	9,417	16.70	157,219
5	Harrison Ave - between Herald Street and Kneeland Street	5,065	5,065	0.50	2,554	13.8	35,121	2,511	12.38	31,076
6	Harrison Ave - between Herald Street and Traveler Street	8,485	8,485	0.50	4,278	16.3	69,738	4,206	14.67	61,707
7	Herald Street - between Harrison Ave and Albany Street	20,262	20,262	0.50	10,217	60.0	613,021	10,045	54.00	542,426
8	Albany Street - north of Herald Street	20,325	20,325	0.50	10,249	13.4	137,336	10,076	12.06	121,520
9	Albany Street - between Herald Street and I-93 SB On-ramp	40,587	40,587	0.50	20,466	2.6	52,188	20,121	2.30	46,178
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	28,557	28,557	0.50	14,400	8.0	114,477	14,157	7.16	101,294
11	Albany Street between Traveler Street and East Berkeley Street	13,930	13,930	0.50	7,024	12.3	86,046	6,906	11.03	76,137
12	Albany Street - between East Berkeley Street and Albany Street	11,714	11,714	0.50	5,907	0.0	0	5,807	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	19,692	19,692	0.50	9,930	0.0	0	9,762	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,753	14,753	0.50	7,439	16.6	123,492	7,314	14.94	109,271
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	23,175	23,175	0.50	11,686	60.0	701,143	11,489	54.00	620,399
16	Mullins Way - between Washington Street and Harrison Ave	3,483	3,483	0.50	1,756	9.8	17,121	1,726	8.78	15,150
17	Traveler Street - between Washington Street and Harrison Ave	1,583	1,583	0.50	798	0.0	0	785	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	5,699	5,699	0.50	2,874	33.0	94,683	2,825	29.66	83,779
19	East Berkeley Street - between Harrison Ave and Albany Street	14,690	14,690	0.50	7,407	19.9	147,036	7,283	17.87	130,103
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	17,856	17,856	0.50	9,004	5.8	52,222	8,852	5.22	46,208
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	12,727	12,727	0.50	6,418	4.7	29,842	6,309	4.19	26,405
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	23,491	23,491	0.50	11,845	0.0	0	11,646	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	13,360	13,360	0.50	6,737	19.3	129,684	6,623	17.33	114,750
24	Harrison Ave- between East Berkeley Street and Mass. Ave	11,271	11,271	0.50	5,683	15.4	87,522	5,587	13.86	77,443
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,421	8,421	0.50	4,246	0.0	0	4,175	0.00	0
26	East Berkeley Street - west of Harrison Ave	12,474	12,474	0.50	6,290	0.0	0	6,184	0.00	0
27	Site Drive North - Albany Street	0	0	0.50	0	2.6	0	0	2.30	0
28	Site Drive South - Harrison Ave	0	0	0.50	0	0.0	0	0	0.00	0
29	Site Drive -Traveler Street	0	0	0.50	0	0.0	0	0	0.00	0
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,104,154	1,104,154	0.50	556,766	0.0	0	547,388	0.00	0
32	I-90 - east of 93	494,018	494,018	0.50	249,107	0.0	0	244,911	0.00	0
33	I-93 - north of 90	1,108,754	1,108,754	0.50	559,086	0.0	0	549,668	0.00	0
34	I-93 - south of 90	594,225	594,225	0.50	299,636	0.0	0	294,589	0.00	0

Freeway	0	0
Arterial	2,989,346	2,645,092

#### Idle Emission Parameters

Pollutant	Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)
Freeway PM25	0.0000	0	0.00	0.0000	0	0.00
Arterial PM25	0.0000	32	0.03	0.0000	28	0.03
<b>Total</b>			<b>0.03</b>			<b>0.03</b>

## Herald Square, Boston MA

### 2011 Existing Condition

Link No.	Roadway Description	Seasonal		PEAK PERIOD				OFF-PEAK PERIOD				
		Adjusted	VMT	Speed	E.M.F.	Emissions	VMT	Speed	E.M.F.	Emissions		
		Link Length	Volume	Peak	Peak	PM25	PM25	Off-Peak	Off-Peak	PM25	PM25	
Type	(miles)	(vehicles)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)		
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	17,539	3,626	20	0.02	0.08	3,565	30	0.02	0.08
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	7,915	1,237	20	0.02	0.03	1,216	30	0.02	0.03
3	Washington Street - between Herald Street and Mass Ave	2	0.97	7,915	3,871	20	0.02	0.09	3,806	30	0.02	0.08
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	17,539	708	20	0.02	0.02	696	30	0.02	0.02
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	4,559	1,011	20	0.02	0.02	994	30	0.02	0.02
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	7,662	232	20	0.02	0.01	228	30	0.02	0.01
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	18,869	951	20	0.02	0.02	935	30	0.02	0.02
8	Albany Street - north of Herald Street	2	0.21	18,616	1,971	20	0.02	0.04	1,938	30	0.02	0.04
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	37,485	567	20	0.02	0.01	557	30	0.02	0.01
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	26,277	1,458	20	0.02	0.03	1,433	30	0.02	0.03
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	12,347	436	20	0.02	0.01	428	30	0.02	0.01
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	10,701	1,133	20	0.02	0.02	1,114	30	0.02	0.02
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	18,299	738	20	0.02	0.02	726	30	0.02	0.02
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	13,487	544	20	0.02	0.01	535	30	0.02	0.01
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	21,212	5,669	20	0.02	0.12	5,573	30	0.02	0.12
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,229	114	20	0.02	0.00	112	30	0.02	0.00
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,456	59	20	0.02	0.00	58	30	0.02	0.00
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	4,432	223	20	0.02	0.00	220	30	0.02	0.00
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	13,487	680	20	0.02	0.01	669	30	0.02	0.01
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	16,589	502	20	0.02	0.01	493	30	0.02	0.01
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	11,841	299	20	0.02	0.01	294	30	0.02	0.01
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	22,098	2,340	20	0.02	0.05	2,301	30	0.02	0.05
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	12,474	1,572	20	0.02	0.03	1,546	30	0.02	0.03
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	10,384	4,241	20	0.02	0.09	4,170	30	0.02	0.09
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	7,662	309	20	0.02	0.01	304	30	0.02	0.01
26	East Berkeley Street - west of Harrison Ave	2	0.30	11,524	1,743	20	0.02	0.04	1,714	30	0.02	0.04
27	Site Drive North - Albany Street	2	0.02	0	0	20	0.02	0.00	0	30	0.02	0.00
28	Site Drive South - Harrison Ave	2	0.02	0	0	20	0.02	0.00	0	30	0.02	0.00
29	Site Drive -Traveler Street	2	0.02	0	0	20	0.02	0.00	0	30	0.02	0.00
30	Site Drive - No Data	2	0.02	0	0	20	0.02	0.00	0	30	0.02	0.00
31	I-90 - west of 93	1	1.41	1,000,066	711,035	55	0.02	15.64	699,058	65	0.02	15.38
32	I-90 - east of 93	1	1.22	447,447	275,261	55	0.02	6.06	270,624	65	0.02	5.95
33	I-93 - north of 90	1	1.38	1,004,233	698,806	55	0.02	15.37	687,035	65	0.02	15.11
34	I-93 - south of 90	1	0.80	538,208	217,112	55	0.02	4.78	213,455	65	0.02	4.70

**Mesoscale Emissions**  
(kilograms/day)

**84.6**

**Peak Emissions Inventory**

**VMT Emissions (kg/day)**  
VMT = 1,938,450

**PM25**  
**42.6**

**Idle Emissions (kg/day)**

**0.0**

**Off-Peak Emissions Inventory**

**VMT Emissions (kg/day)**  
VMT = #####

**PM25**  
**41.9**

**Idle Emissions (kg/day)**

**0.0**

## Herald Square, Boston MA

### 2011 Existing Condition

Nox No.	Description	Seasonally Adjusted		Peak	Peak Traffic Data			Off-Peak Traffic Data		
		AAADT (veh/day)	ADT (veh/day)	Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	17,539	17,539	0.50	8,844	20.5	180,862	8,695	18.41	160,034
2	Washington Street - between Herald Street and Kneeland Street	7,915	7,915	0.50	3,991	5.6	22,150	3,924	5.00	19,599
3	Washington Street - between Herald Street and Mass Ave	7,915	7,915	0.50	3,991	6.7	26,540	3,924	5.99	23,484
4	Herald Street - between Washington Street and Harrison Ave	17,539	17,539	0.50	8,844	14.8	130,451	8,695	13.28	115,428
5	Harrison Ave - between Herald Street and Kneeland Street	4,559	4,559	0.50	2,299	13.6	31,149	2,260	12.20	27,562
6	Harrison Ave - between Herald Street and Traveler Street	7,662	7,662	0.50	3,863	16.3	62,779	3,798	14.63	55,549
7	Herald Street - between Harrison Ave and Albany Street	18,869	18,869	0.50	9,515	47.8	454,322	9,354	42.98	402,002
8	Albany Street - north of Herald Street	18,616	18,616	0.50	9,387	12.3	115,459	9,229	11.07	102,162
9	Albany Street - between Herald Street and I-93 SB On-Ramp	37,485	37,485	0.50	18,901	2.4	44,419	18,583	2.12	39,303
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	26,277	26,277	0.50	13,250	5.8	76,851	13,027	5.22	68,001
11	Albany Street between Traveler Street and East Berkeley Street	12,347	12,347	0.50	6,226	12.0	74,401	6,121	10.76	65,833
12	Albany Street - between East Berkeley Street and Albany Street	10,701	10,701	0.50	5,396	0.0	0	5,305	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	18,299	18,299	0.50	9,227	0.0	0	9,072	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	13,487	13,487	0.50	6,801	16.1	109,151	6,686	14.45	96,581
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	21,212	21,212	0.50	10,696	57.4	613,947	10,516	51.66	543,245
16	Mullins Way - between Washington Street and Harrison Ave	3,229	3,229	0.50	1,628	8.8	14,248	1,601	7.88	12,607
17	Traveler Street - between Washington Street and Harrison Ave	1,456	1,456	0.50	734	0.0	0	722	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	4,432	4,432	0.50	2,235	33.1	73,978	2,197	29.79	65,458
19	East Berkeley Street - between Harrison Ave and Albany Street	13,487	13,487	0.50	6,801	17.3	117,652	6,686	15.57	104,103
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	16,589	16,589	0.50	8,365	5.6	46,845	8,224	5.04	41,450
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	11,841	11,841	0.50	5,971	4.0	23,882	5,870	3.60	21,132
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	22,098	22,098	0.50	11,143	0.0	0	10,955	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	12,474	12,474	0.50	6,290	18.7	117,620	6,184	16.83	104,075
24	Harrison Ave - between East Berkeley Street and Mass. Ave	10,384	10,384	0.50	5,236	13.3	69,642	5,148	11.97	61,622
25	I-90 EB On-Ramp - north of Traveler Street to I-90	7,662	7,662	0.50	3,863	0.0	0	3,798	0.00	0
26	East Berkeley Street - west of Harrison Ave	11,524	11,524	0.50	5,811	0.0	0	5,713	0.00	0
27	Site Drive North - Albany Street	0	0	0.50	0	2.4	0	0	2.12	0
28	Site Drive South - Harrison Ave	0	0	0.50	0	0.0	0	0	0.00	0
29	Site Drive -Traveler Street	0	0	0.50	0	0.0	0	0	0.00	0
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,000,066	1,000,066	0.50	504,280	0.0	0	495,786	0.00	0
32	I-90 - east of 93	447,447	447,447	0.50	225,624	0.0	0	221,823	0.00	0
33	I-93 - north of 90	1,004,233	1,004,233	0.50	506,381	0.0	0	497,851	0.00	0
34	I-93 - south of 90	538,208	538,208	0.50	271,390	0.0	0	266,818	0.00	0

Freeway	0	0
Arterial	2,406,348	2,129,233

#### Idle Emission Parameters

	Pollutant	Peak Period Emissions			Off-Peak Period Emissions		
		(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)
Freeway	PM25	0.0000	0	0.00	0.0000	0	0.00
Arterial	PM25	0.0000	37	0.04	0.0000	33	0.03
Total				0.04			0.03

## Herald Square, Boston MA

Link Roadway No. Description	Roadway Type	2011 Existing Condition				2016 No Build Condition				2016 Build Condition				2016 Build with Mitigation Condition			
		Peak		Off Peak		Peak		Off Peak		Peak		Off Peak		Peak		Off Peak	
		Average Speed (mph)	PM25 EMF (g-veh/mi)	Average Speed (mph)	PM25 EMF (g-veh/mi)	Average Speed (mph)	PM25 EMF (g-veh/mi)	Average Speed (mph)	PM25 EMF (g-veh/mi)	Average Speed (mph)	PM25 EMF (g-veh/mi)	Average Speed (mph)	PM25 EMF (g-veh/mi)	Average Speed (mph)	PM25 EMF (g-veh/mi)	Average Speed (mph)	PM25 EMF (g-veh/mi)
1 Herald Street - between Kneeland Street and Washington Street	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
2 Washington Street - between Herald Street and Kneeland Street	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
3 Washington Street - between Herald Street and Mass Ave	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
4 Herald Street - between Washington Street and Harrison Ave	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
5 Harrison Ave - between Herald Street and Kneeland Street	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
6 Harrison Ave - between Herald Street and Traveler Street	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
7 Herald Street - between Harrison Ave and Albany Street	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
8 Albany Street - north of Herald Street	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
9 Albany Street - between Herald Street and I-93 SB On-ramp	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
10 Albany Street - between I-93 SB On-Ramp and Traveler Street	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
11 Albany Street between Traveler Street and East Berkeley Street	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
12 Albany Street - between East Berkeley Street and Albany Street	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
13 I-93 NB On-Ramp - north of Traveler Street to I-93	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
14 I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
15 I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
16 Mullins Way - between Washington Street and Harrison Ave	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
17 Traveler Street - between Washington Street and Harrison Ave	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
18 Traveler Street - between Harrison Ave and Albany Street	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
19 East Berkeley Street - between Harrison Ave and Albany Street	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
20 Traveler Street - between Albany Street and I-93 NB On-Ramp	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
21 East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
22 Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
23 West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
24 Harrison Ave- between East Berkeley Street and Mass. Ave	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
25 I-90 EB On-Ramp - north of Traveler Street to I-90	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02
26 East Berkeley Street - west of Harrison Ave	2	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02	20	0.02	30	0.02

## Herald Square, Boston MA

Link No.	Roadway Description	2011 Existing Condition			2016 No Build Condition			2016 Build Condition				2016 Build with Mitigation Condition			
		S.A.F.	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Traffic Increase (no-build)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Traffic Increase (no-build)
1	Herald Street - between Kneeland Street and Washington Street	100%	17,539	17,539	18,996	18,996	8.3%	19,122	19,122	9.0%	0.7%	19,118	19,118	9.0%	0.6%
2	Washington Street - between Herald Street and Kneeland Street	100%	7,915	7,915	8,358	8,358	5.6%	8,675	8,675	9.6%	3.8%	8,665	8,665	9.5%	3.7%
3	Washington Street - between Herald Street and Mass Ave	100%	7,915	7,915	8,358	8,358	5.6%	8,675	8,675	9.6%	3.8%	8,665	8,665	9.5%	3.7%
4	Herald Street - between Washington Street and Harrison Ave	100%	17,539	17,539	18,996	18,996	8.3%	19,122	19,122	9.0%	0.7%	19,118	19,118	9.0%	0.6%
5	Harrison Ave - between Herald Street and Kneeland Street	100%	4,559	4,559	5,065	5,065	11.1%	5,319	5,319	16.7%	5.0%	5,311	5,311	16.5%	4.8%
6	Harrison Ave - between Herald Street and Traveler Street	100%	7,662	7,662	8,485	8,485	10.7%	9,118	9,118	19.0%	7.5%	9,098	9,098	18.8%	7.2%
7	Herald Street - between Harrison Ave and Albany Street	100%	18,869	18,869	20,262	20,262	7.4%	20,262	20,262	7.4%	0.0%	20,262	20,262	7.4%	0.0%
8	Albany Street - north of Herald Street	100%	18,616	18,616	20,325	20,325	9.2%	21,528	21,528	15.6%	5.9%	21,491	21,491	15.4%	5.7%
9	Albany Street - between Herald Street and I-93 SB On-ramp	100%	37,485	37,485	40,587	40,587	8.3%	41,790	41,790	11.5%	3.0%	41,753	41,753	11.4%	2.9%
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	100%	26,277	26,277	28,557	28,557	8.7%	29,823	29,823	13.5%	4.4%	29,784	29,784	13.3%	4.3%
11	Albany Street between Traveler Street and East Berkeley Street	100%	12,347	12,347	13,930	13,930	12.8%	14,373	14,373	16.4%	3.2%	14,360	14,360	16.3%	3.1%
12	Albany Street - between East Berkeley Street and Albany Street	100%	10,701	10,701	11,714	11,714	9.5%	12,157	12,157	13.6%	3.8%	12,143	12,143	13.5%	3.7%
13	I-93 NB On-Ramp - north of Traveler Street to I-93	100%	18,299	18,299	19,692	19,692	7.6%	20,389	20,389	11.4%	3.5%	20,367	20,367	11.3%	3.4%
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	100%	13,487	13,487	14,753	14,753	9.4%	14,753	14,753	9.4%	0.0%	14,753	14,753	9.4%	0.0%
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	100%	21,212	21,212	23,175	23,175	9.3%	23,681	23,681	11.6%	2.2%	23,665	23,665	11.6%	2.1%
16	Mullins Way - between Washington Street and Harrison Ave	100%	3,229	3,229	3,483	3,483	7.8%	3,546	3,546	9.8%	1.8%	3,544	3,544	9.7%	1.8%
17	Traveler Street - between Washington Street and Harrison Ave	100%	1,456	1,456	1,583	1,583	8.7%	1,836	1,836	26.1%	16.0%	1,828	1,828	25.5%	15.5%
18	Traveler Street - between Harrison Ave and Albany Street	100%	4,432	4,432	5,699	5,699	28.6%	8,421	8,421	90.0%	47.8%	8,337	8,337	88.1%	46.3%
19	East Berkeley Street - between Harrison Ave and Albany Street	100%	13,487	13,487	14,690	14,690	8.9%	15,196	15,196	12.7%	3.4%	15,181	15,181	12.6%	3.3%
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	100%	16,589	16,589	17,856	17,856	7.6%	19,059	19,059	14.9%	6.7%	19,022	19,022	14.7%	6.5%
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	100%	11,841	11,841	12,727	12,727	7.5%	13,297	13,297	12.3%	4.5%	13,279	13,279	12.2%	4.3%
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	100%	22,098	22,098	23,491	23,491	6.3%	23,555	23,555	6.6%	0.3%	23,553	23,553	6.6%	0.3%
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	100%	12,474	12,474	13,360	13,360	7.1%	13,424	13,424	7.6%	0.5%	13,422	13,422	7.6%	0.5%
24	Harrison Ave- between East Berkeley Street and Mass. Ave	100%	10,384	10,384	11,271	11,271	8.5%	11,714	11,714	12.8%	3.9%	11,700	11,700	12.7%	3.8%
25	I-90 EB On-Ramp - north of Traveler Street to I-90	100%	7,662	7,662	8,421	8,421	9.9%	8,865	8,865	15.7%	5.3%	8,851	8,851	15.5%	5.1%
26	East Berkeley Street - west of Harrison Ave	100%	11,524	11,524	12,474	12,474	8.2%	12,854	12,854	11.5%	3.0%	12,842	12,842	11.4%	3.0%

# Herald Square, Boston MA

Pollutant **PM25**

## MOBILE 6.2 Emission Factors

2011			2016		
Vehicle Speed (mph)	PM2.5 (g/veh-mile)		Vehicle Speed (mph)	PM2.5 (g/veh-mile)	
	Freeway	Arterial		Freeway	Arterial
2.5	0.0220	0.0220	2.5	0.0152	0.0152
3	0.0220	0.0220	3	0.0152	0.0152
4	0.0220	0.0220	4	0.0152	0.0152
5	0.0220	0.0220	5	0.0152	0.0152
6	0.0220	0.0220	6	0.0152	0.0152
7	0.0220	0.0220	7	0.0152	0.0152
8	0.0220	0.0220	8	0.0152	0.0152
9	0.0220	0.0220	9	0.0152	0.0152
10	0.0220	0.0220	10	0.0152	0.0152
11	0.0220	0.0220	11	0.0152	0.0152
12	0.0220	0.0220	12	0.0152	0.0152
13	0.0220	0.0220	13	0.0152	0.0152
14	0.0220	0.0220	14	0.0152	0.0152
15	0.0220	0.0220	15	0.0152	0.0152
16	0.0220	0.0220	16	0.0152	0.0152
17	0.0220	0.0220	17	0.0152	0.0152
18	0.0220	0.0220	18	0.0152	0.0152
19	0.0220	0.0220	19	0.0152	0.0152
20	0.0220	0.0220	20	0.0152	0.0152
21	0.0220	0.0220	21	0.0152	0.0152
22	0.0220	0.0220	22	0.0152	0.0152
23	0.0220	0.0220	23	0.0152	0.0152
24	0.0220	0.0220	24	0.0152	0.0152
25	0.0220	0.0220	25	0.0152	0.0152
26	0.0220	0.0220	26	0.0152	0.0152
27	0.0220	0.0220	27	0.0152	0.0152
28	0.0220	0.0220	28	0.0152	0.0152
29	0.0220	0.0220	29	0.0152	0.0152
30	0.0220	0.0220	30	0.0152	0.0152
31	0.0220	0.0220	31	0.0152	0.0152
32	0.0220	0.0220	32	0.0152	0.0152
33	0.0220	0.0220	33	0.0152	0.0152
34	0.0220	0.0220	34	0.0152	0.0152
35	0.0220	0.0220	35	0.0152	0.0152
36	0.0220	0.0220	36	0.0152	0.0152
37	0.0220	0.0220	37	0.0152	0.0152
38	0.0220	0.0220	38	0.0152	0.0152
39	0.0220	0.0220	39	0.0152	0.0152
40	0.0220	0.0220	40	0.0152	0.0152
41	0.0220	0.0220	41	0.0152	0.0152
42	0.0220	0.0220	42	0.0152	0.0152
43	0.0220	0.0220	43	0.0152	0.0152
44	0.0220	0.0220	44	0.0152	0.0152
45	0.0220	0.0220	45	0.0152	0.0152
46	0.0220	0.0220	46	0.0152	0.0152
47	0.0220	0.0220	47	0.0152	0.0152
48	0.0220	0.0220	48	0.0152	0.0152
49	0.0220	0.0220	49	0.0152	0.0152
50	0.0220	0.0220	50	0.0152	0.0152
51	0.0220	0.0220	51	0.0152	0.0152
52	0.0220	0.0220	52	0.0152	0.0152
53	0.0220	0.0220	53	0.0152	0.0152
54	0.0220	0.0220	54	0.0152	0.0152
55	0.0220	0.0220	55	0.0152	0.0152
56	0.0220	0.0220	56	0.0152	0.0152
57	0.0220	0.0220	57	0.0152	0.0152
58	0.0220	0.0220	58	0.0152	0.0152
59	0.0220	0.0220	59	0.0152	0.0152
60	0.0220	0.0220	60	0.0152	0.0152
60.7	0.0220	0.0220	60.7	0.0152	0.0152

ission factors were calculated by MOBILE 6.2 and composite vehicle type during summer conditions.

### Herald Square, Boston MA

Link No.	Description	2011 Existing Condition					2016 No Build Condition					2016 Build Condition					2016 Build with Mitigation Condition				
		Delay By Approach		Adjusted Delay *		Combined Delay	Delay By Approach		Adjusted Delay *		Combined Delay	Delay By Approach		Adjusted Delay *		Combined Delay	Delay By Approach		Adjusted Delay *		Combined Delay
		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)			
1	Herald Street - between Kneeland Street and Washington Street	40.9	0.0	40.9	0.0	20.5	56.2	0.0	56.2	0.0	28.1	58.1	0.0	58.1	0.0	29.1	58.1	0.0	58.1	0.0	29.1
2	Washington Street - between Herald Street and Kneeland Street	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6
3	Washington Street - between Herald Street and Mass Ave	13.3	0.0	13.3	0.0	6.7	13.5	0.0	13.5	0.0	6.8	13.7	0.0	13.7	0.0	6.9	13.7	0.0	13.7	0.0	6.9
4	Herald Street - between Washington Street and Harrison Ave	29.5	0.0	29.5	0.0	14.8	37.1	0.0	37.1	0.0	18.6	37.8	0.0	37.8	0.0	18.9	37.8	0.0	37.8	0.0	18.9
5	Harrison Ave - between Herald Street and Kneeland Street	0.0	27.1	0.0	27.1	13.6	0.0	27.5	0.0	27.5	13.8	0.0	27.5	0.0	27.5	13.8	0.0	27.5	0.0	27.5	13.8
6	Harrison Ave - between Herald Street and Traveler Street	32.5	0.0	32.5	0.0	16.3	32.6	0.0	32.6	0.0	16.3	32.7	0.0	32.7	0.0	16.4	32.7	0.0	32.7	0.0	16.4
7	Herald Street - between Harrison Ave and Albany Street	95.5	0.0	95.5	0.0	47.8	130.6	0.0	120.0	0.0	60.0	130.6	0.0	120.0	0.0	60.0	130.6	0.0	120.0	0.0	60.0
8	Albany Street - north of Herald Street	0.0	24.6	0.0	24.6	12.3	0.0	26.8	0.0	26.8	13.4	0.0	29.0	0.0	29.0	14.5	0.0	29.0	0.0	29.0	14.5
9	Albany Street - between Herald Street and I-93 SB On-ramp	0.0	4.7	0.0	4.7	2.4	0.0	5.1	0.0	5.1	2.6	0.0	4.5	0.0	4.5	2.3	0.0	4.5	0.0	4.5	2.3
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	0.0	11.6	0.0	11.6	5.8	0.0	15.9	0.0	15.9	8.0	0.0	25.9	0.0	25.9	13.0	0.0	25.9	0.0	25.9	13.0
11	Albany Street between Traveler Street and East Berkeley Street	0.0	23.9	0.0	23.9	12.0	0.0	24.5	0.0	24.5	12.3	0.0	22.8	0.0	22.8	11.4	0.0	22.8	0.0	22.8	11.4
12	Albany Street - between East Berkeley Street and Albany Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	32.1	0.0	32.1	0.0	16.1	33.2	0.0	33.2	0.0	16.6	33.2	0.0	33.2	0.0	16.6	33.2	0.0	33.2	0.0	16.6
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	114.8	0.0	114.8	0.0	57.4	153.4	0.0	120.0	0.0	60.0	150.8	0.0	120.0	0.0	60.0	150.8	0.0	120.0	0.0	60.0
16	Mullins Way - between Washington Street and Harrison Ave	17.5	0.0	17.5	0.0	8.8	19.5	0.0	19.5	0.0	9.8	14.5	0.0	14.5	0.0	7.3	14.5	0.0	14.5	0.0	7.3
17	Traveler Street - between Washington Street and Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	Traveler Street - between Harrison Ave and Albany Street	49.3	16.9	49.3	16.9	33.1	48.8	17.1	48.8	17.1	33.0	48.9	17.7	48.9	17.7	33.3	48.9	17.7	48.9	17.7	33.3
19	East Berkeley Street - between Harrison Ave and Albany Street	0.0	34.6	0.0	34.6	17.3	0.0	39.7	0.0	39.7	19.9	0.0	42.9	0.0	42.9	21.5	0.0	42.9	0.0	42.9	21.5
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	11.2	0.0	11.2	0.0	5.6	11.6	0.0	11.6	0.0	5.8	11.9	0.0	11.9	0.0	6.0	11.9	0.0	11.9	0.0	6.0
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	0.0	8.0	0.0	8.0	4.0	0.0	9.3	0.0	9.3	4.7	0.0	10.7	0.0	10.7	5.4	0.0	10.7	0.0	10.7	5.4
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	0.0	37.4	0.0	37.4	18.7	0.0	38.5	0.0	38.5	19.3	0.0	38.6	0.0	38.6	19.3	0.0	38.6	0.0	38.6	19.3
24	Harrison Ave- between East Berkeley Street and Mass. Ave	26.6	0.0	26.6	0.0	13.3	30.8	0.0	30.8	0.0	15.4	35.2	0.0	35.2	0.0	17.6	35.2	0.0	35.2	0.0	17.6
25	I-90 EB On-Ramp - north of Traveler Street to I-90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	East Berkeley Street - west of Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	Site Drive North - Albany Street	0.0	4.7	0.0	4.7	2.4	0.0	5.1	0.0	5.1	2.6	0.0	4.5	0.0	4.5	2.3	0.0	4.5	0.0	4.5	2.3
28	Site Drive South - Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.0	9.4	4.7	0.0	9.4	0.0	9.4	4.7
29	Site Drive -Traveler Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	54.4	2.0	54.4	28.2	2.0	54.4	2.0	54.4	28.2
30	Site Drive - No Data	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	I-90 - west of 93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	I-90 - east of 93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	I-93 - north of 90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	I-93 - south of 90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Herald Square, Boston MA  
PM Peak Condition**

Link	Description	2011 Existing Condition				2016 No Build Condition				2016 Build Condition				2016 Build with Mitigation Condition			
		Delay by Approach				Delay by Approach				Delay by Approach				Delay by Approach			
		Northbound	Southbound	Eastbound	Westbound	Northbound	Southbound	Eastbound	Westbound	Northbound	Southbound	Eastbound	Westbound	Northbound	Southbound	Eastbound	Westbound
Int1	<a href="#">Herald Street and Washington Street</a>	13.3	11.1	40.9	0.0	13.5	11.1	56.2	0.0	13.7	11.1	58.1	0.0	13.7	11.1	58.1	0.0
Int2	<a href="#">Herald Street and Harrison Avenue</a>	32.5	27.1	29.5	0.0	32.6	27.5	37.1	0.0	32.7	27.5	37.8	0.0	32.7	27.5	37.8	0.0
Int3	<a href="#">Herald Street and Albany Street</a>	0.0	24.6	95.5	0.0	0.0	26.8	130.6	0.0	0.0	29.0	130.6	0.0	0.0	29.0	130.6	0.0
Int4	<a href="#">Traveler Street and Harrison Avenue</a>	40.1	41.8	0.0	16.9	41.6	62.5	0.0	17.1	45.5	176.5	0.0	17.7	45.5	176.5	0.0	17.7
Int5	<a href="#">Traveler Street and Albany Street</a>	0.0	11.6	49.3	0.0	0.0	15.9	48.8	0.0	0.0	25.9	48.9	0.0	0.0	25.9	48.9	0.0
Int6	<a href="#">Traveler Street and Frontage Road</a>	32.1	0.0	11.2	0.0	33.2	0.0	11.6	0.0	33.2	0.0	11.9	0.0	33.2	0.0	11.9	0.0
Int7	<a href="#">East Berkeley Street and Harrison Ave</a>	26.6	10.7	0.0	34.6	30.8	10.7	0.0	39.7	35.2	15.0	0.0	42.9	35.2	15.0	0.0	42.9
Int8	<a href="#">East Berkeley Street and Albany Street</a>	0.0	23.9	0.0	8.0	0.0	24.5	0.0	9.3	0.0	22.8	0.0	10.7	0.0	22.8	0.0	10.7
Int9	<a href="#">East Berkeley Street and Frontage Road</a>	114.8	0.0	0.0	37.4	153.4	0.0	0.0	38.5	150.8	0.0	0.0	38.6	150.8	0.0	0.0	38.6
Int10	<a href="#">William E. Mullins Way and Harrison Avenue</a>	4.4	0.0	17.5	16.6	4.7	0.0	19.5	18.1	4.5	0.0	14.5	0.0	4.5	0.0	14.5	0.0
Int11	<a href="#">Boston Herald Back and Albany Street</a>	0.0	4.7	Err	0.0	0.0	5.1	Err	0.0	0.0	4.5	10.2	0.0	0.0	4.5	10.2	0.0
Int12	<a href="#">South Site Driveway and Harrison Avenue</a>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.0	0.0	0.0	9.4
Int13	<a href="#">North Site Driveway and Harrison Avenue- No Data</a>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Int 14	<a href="#">Traveler Street and Site Driveway</a>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.4	2.0	0.5	0.0	54.4	2.0	0.5

# Herald Square, Boston MA

[Harrison Avenue, south of Herald Street](#)

Thursday 03/03/2011					Friday 03/04/2011					Weekday Average				
Peak Period Data					Peak Period Data					Peak Period Data				
Begin Time	Volume	V/C Ratio	Hours	Volume	Begin Time	Volume	V/C Ratio	Hours	Volume	Begin Time	Volume	V/C Ratio	Hours	Volume
12:00 AM	70	0.06	0	0	12:00 AM	73	0.06	0	0	12:00 AM	72	0.06	0	0
1:00 AM	55	0.05	0	0	1:00 AM	71	0.06	0	0	1:00 AM	63	0.05	0	0
2:00 AM	41	0.03	0	0	2:00 AM	71	0.06	0	0	2:00 AM	56	0.05	0	0
3:00 AM	42	0.04	0	0	3:00 AM	49	0.04	0	0	3:00 AM	46	0.04	0	0
4:00 AM	57	0.05	0	0	4:00 AM	62	0.05	0	0	4:00 AM	60	0.05	0	0
5:00 AM	76	0.06	0	0	5:00 AM	74	0.06	0	0	5:00 AM	75	0.06	0	0
6:00 AM	151	0.13	0	0	6:00 AM	138	0.12	0	0	6:00 AM	145	0.12	0	0
7:00 AM	258	0.22	0	0	7:00 AM	288	0.24	0	0	7:00 AM	273	0.23	0	0
8:00 AM	361	0.30	1	361	8:00 AM	381	0.32	0	0	8:00 AM	371	0.31	0	0
9:00 AM	387	0.32	1	387	9:00 AM	395	0.33	0	0	9:00 AM	391	0.33	1	391
10:00 AM	341	0.28	0	0	10:00 AM	372	0.31	0	0	10:00 AM	357	0.30	0	0
11:00 AM	412	0.34	1	412	11:00 AM	412	0.34	0	0	11:00 AM	412	0.34	1	412
12:00 PM	350	0.29	0	0	12:00 PM	385	0.32	0	0	12:00 PM	368	0.31	0	0
1:00 PM	348	0.29	0	0	1:00 PM	423	0.35	1	423	1:00 PM	386	0.32	0	0
2:00 PM	419	0.35	1	419	2:00 PM	463	0.39	1	463	2:00 PM	441	0.37	1	441
3:00 PM	544	0.45	1	544	3:00 PM	528	0.44	1	528	3:00 PM	536	0.45	1	536
4:00 PM	555	0.46	1	555	4:00 PM	591	0.49	1	591	4:00 PM	573	0.48	1	573
5:00 PM	574	0.48	1	574	5:00 PM	589	0.49	1	589	5:00 PM	582	0.48	1	582
6:00 PM	322	0.27	0	0	6:00 PM	458	0.38	1	458	6:00 PM	390	0.33	1	390
7:00 PM	231	0.19	0	0	7:00 PM	306	0.26	0	0	7:00 PM	269	0.22	0	0
8:00 PM	169	0.14	0	0	8:00 PM	257	0.21	0	0	8:00 PM	213	0.18	0	0
9:00 PM	143	0.12	0	0	9:00 PM	182	0.15	0	0	9:00 PM	163	0.14	0	0
10:00 PM	155	0.13	0	0	10:00 PM	214	0.18	0	0	10:00 PM	185	0.15	0	0
11:00 PM	125	0.10	0	0	11:00 PM	218	0.18	0	0	11:00 PM	172	0.14	0	0
<b>Total</b>	<b>6,186</b>		<b>7</b>	<b>3,252</b>	<b>Total</b>	<b>7,000</b>		<b>6</b>	<b>3,052</b>	<b>Total</b>	<b>6,593</b>		<b>7</b>	<b>3,325</b>
<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>	<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>	<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>
		<b>30%</b>		<b>360</b>			<b>35%</b>		<b>420</b>			<b>33%</b>		<b>390</b>
<b>Peak Hour (K) Factor</b>		<b>0.093</b>	<b>(4:00-5:00 PM)</b>		<b>Peak Hour (K) Factor</b>		<b>0.084</b>	<b>(4:00-5:00 PM)</b>		<b>Peak Hour (K) Factor</b>		<b>0.088</b>	<b>(4:00-5:00 PM)</b>	
<b>Peak Period Volume Factor</b>			<b>0.526</b>		<b>Peak Period Volume Factor</b>			<b>0.436</b>		<b>Peak Period Volume Factor</b>			<b>0.504</b>	



**Herald Square, Boston MA**  
**Average Daily Traffic (ADT) for Mesoscale Roadway Network**

Estimated TDM Adjustment = 3.10%

Unadjusted PM Peak Hour

Roadway Segment	2011 Existing Condition	2016 No Build Condition	2016 Build Condition	2016 Build with Mitigation Condition	K Factor	Seasonal Adjustment Factor	2011 Existing Condition	2016 No Build Condition	2016 Build Condition	2016 Build with Mitigation Condition
	Volume (ADT)	Volume (ADT)	Volume (ADT)	Volume (ADT)			Volume (ADT)	Volume (ADT)	Volume (ADT)	Volume (ADT)
					8.8%	111.4%				
1 Herald Street - between Kneeland Street and Washington Street	17,539	18,996	19,122	19,118			1385	1500	1510	1510
2 Washington Street - between Herald Street and Kneeland Street	7,915	8,358	8,675	8,665			625	660	685	684
3 Washington Street - between Herald Street and Mass Ave	7,915	8,358	8,675	8,665			625	660	685	684
4 Herald Street - between Washington Street and Harrison Ave	17,539	18,996	19,122	19,118			1385	1500	1510	1510
5 Harrison Ave - between Herald Street and Kneeland Street	4,559	5,065	5,319	5,311			360	400	420	419
6 Harrison Ave - between Herald Street and Traveler Street	7,662	8,485	9,118	9,098			605	670	720	718
7 Herald Street - between Harrison Ave and Albany Street	18,869	20,262	20,262	20,262			1490	1600	1600	1600
8 Albany Street - north of Herald Street	18,616	20,325	21,528	21,491			1470	1605	1700	1697
9 Albany Street - between Herald Street and I-93 SB On-ramp	37,485	40,587	41,790	41,753			2960	3205	3300	3297
10 Albany Street - between I-93 SB On-Ramp and Traveler Street	26,277	28,557	29,823	29,784			2075	2255	2355	2352
11 Albany Street between Traveler Street and East Berkeley Street	12,347	13,930	14,373	14,360			975	1100	1135	1134
12 Albany Street - between East Berkeley Street and Albany Street	10,701	11,714	12,157	12,143			845	925	960	959
13 I-93 NB On-Ramp - north of Traveler Street to I-93	18,299	19,692	20,389	20,367			1445	1555	1610	1608
14 I-93 NB On-Ramp - between Traveler Street and West 4th Street	13,487	14,753	14,753	14,753			1065	1165	1165	1165
15 I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	21,212	23,175	23,681	23,665			1675	1830	1870	1869
16 Mullins Way - between Washington Street and Harrison Ave	3,229	3,483	3,546	3,544			255	275	280	280
17 Traveler Street - between Washington Street and Harrison Ave	1,456	1,583	1,836	1,828			115	125	145	144
18 Traveler Street - between Harrison Ave and Albany Street	4,432	5,699	8,421	8,337			350	450	665	658
19 East Berkeley Street - between Harrison Ave and Albany Street	13,487	14,690	15,196	15,181			1065	1160	1200	1199
20 Traveler Street - between Albany Street and I-93 NB On-Ramp	16,589	17,856	19,059	19,022			1310	1410	1505	1502
21 East Berkeley Street - between Albany Street and I-93 NB On-Ramp	11,841	12,727	13,297	13,279			935	1005	1050	1049
22 Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	22,098	23,491	23,555	23,553			1745	1855	1860	1860
23 West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	12,474	13,360	13,424	13,422			985	1055	1060	1060
24 Harrison Ave- between East Berkeley Street and Mass. Ave	10,384	11,271	11,714	11,700			820	890	925	924
25 I-90 EB On-Ramp - north of Traveler Street to I-90	7,662	8,421	8,865	8,851			605	665	700	699
26 East Berkeley Street - west of Harrison Ave	11,524	12,474	12,854	12,842			910	985	1015	1014
27 Site Drive North - Albany Street	0	0	127	123			0	0	10	10
28 Site Drive South - Harrison Ave	0	0	1,013	982			0	0	80	78
29 Site Drive -Traveler Street	0	0	5,103	4,945			0	0	403	391
30 Site Drive - No Data	0	0	0	0			0	0	0	0
31 I-90 - west of 93	1,000,066	1,104,154	1,104,154	1,104,154			78,971	87,190	87,190	87190
32 I-90 - east of 93	447,447	494,018	494,018	494,018			35,333	39,010	39,010	39010
33 I-93 - north of 90	1,004,233	1,108,754	1,108,754	1,108,754			79,300	87,554	87,554	87554
34 I-93 - south of 90	538,208	594,225	594,225	594,225			42,500	46,923	46,923	46923

# Herald Square, Boston MA

STATION 8932 - BOSTON - RTE.I-93 - NORTH OF GRANITE AVE. AT HALLET ST.

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
04	170,788	180,330	186,604	178,396	198,379	197,000	198,000	200,961	195,770	196,686	195,000	194,000	190,993
						August	-	February					111%

## Herald Square, Boston MA

### Mesoscale Roadway Data

Link No.	Description	Roadway Type 1=Freeway 2=Arterial	Link Length (miles)	Speed Limit (mph)	Existing		No Build		Build	
					Peak Speed (mph)	Off-Peak Speed (mph)	Peak Speed (mph)	Off-Peak Speed (mph)	Peak Speed (mph)	Off-Peak Speed (mph)
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	30	20	30	20	30	20	30
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	30	20	30	20	30	20	30
3	Washington Street - between Herald Street and Mass Ave	2	0.97	30	20	30	20	30	20	30
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	30	20	30	20	30	20	30
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	30	20	30	20	30	20	30
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	30	20	30	20	30	20	30
7	Herald Street - between Harrison Ave and Albany Street	2	0.1	30	20	30	20	30	20	30
8	Albany Street - north of Herald Street	2	0.21	30	20	30	20	30	20	30
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	30	20	30	20	30	20	30
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	30	20	30	20	30	20	30
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	30	20	30	20	30	20	30
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	30	20	30	20	30	20	30
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	30	20	30	20	30	20	30
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	30	20	30	20	30	20	30
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	30	20	30	20	30	20	30
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	30	20	30	20	30	20	30
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	30	20	30	20	30	20	30
18	Traveler Street - between Harrison Ave and Albany Street	2	0.1	30	20	30	20	30	20	30
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.1	30	20	30	20	30	20	30
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	30	20	30	20	30	20	30
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	30	20	30	20	30	20	30
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	30	20	30	20	30	20	30
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	30	20	30	20	30	20	30
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	30	20	30	20	30	20	30
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	30	20	30	20	30	20	30
26	East Berkeley Street - west of Harrison Ave	2	0.3	30	20	30	20	30	20	30
27	Site Drive North - Albany Street	2	0.02	30	20	30	20	30	20	30
28	Site Drive South - Harrison Ave	2	0.02	30	20	30	20	30	20	30
29	Site Drive -Traveler Street	2	0.02	30	20	30	20	30	20	30
30	Site Drive - No Data	2	0.02	30	20	30	20	30	20	30
31	I-90 - west of 93	1	1.41	65	55	65	55	65	55	65
32	I-90 - east of 93	1	1.22	65	55	65	55	65	55	65
33	I-93 - north of 90	1	1.38	65	55	65	55	65	55	65
34	I-93 - south of 90	1	0.8	65	55	65	55	65	55	65

## Particulate Matter<sub>10</sub> (PM<sub>10</sub>)

# Herald Square, Boston MA

## PM10 Emissions Inventory in Kilograms per Day

<u>Pollutant</u>	<u>2011 Existing</u> <u>Condition</u>	<u>2016 No Build</u> <u>Condition</u>	<u>2016 Build Condition</u>	<u>2016 Build with</u> <u>Mitigation Condition</u>
Particulate Matter 10 (PM10)	144.28	127.83	127.92	127.91
Project Emission			0.1	-
Difference with Build Condition				(0.003)
Percent Reduction from Mitigation				-3.0%

**Herald Square, Boston MA**  
**2016 Build with Mitigation Condition**

Link No.	Description	Seasonal			PEAK PERIOD			OFF-PEAK PERIOD				
		Link Length Type	Adjusted Volume (miles) (vehicles)	VMT Peak (veh-miles)	Speed Peak (mph)	E.M.F. PM10 (g/veh-mi)	Emissions PM10 (Kg/day)	VMT Off-Peak (veh-miles)	Speed Off-Peak (mph)	E.M.F. PM10 (g/veh-mi)	Emissions PM10 (Kg/day)	
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	19,118	3,953	20	0.03	0.12	3,886	30	0.03	0.12
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	8,665	1,354	20	0.03	0.04	1,332	30	0.03	0.04
3	Washington Street - between Herald Street and Mass Ave	2	0.97	8,665	4,238	20	0.03	0.13	4,167	30	0.03	0.13
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	19,118	771	20	0.03	0.02	758	30	0.03	0.02
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	5,311	1,178	20	0.03	0.04	1,158	30	0.03	0.03
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	9,098	275	20	0.03	0.01	271	30	0.03	0.01
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	20,262	1,022	20	0.03	0.03	1,004	30	0.03	0.03
8	Albany Street - north of Herald Street	2	0.21	21,491	2,276	20	0.03	0.07	2,237	30	0.03	0.07
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	41,753	632	20	0.03	0.02	621	30	0.03	0.02
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	29,784	1,652	20	0.03	0.05	1,624	30	0.03	0.05
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	14,360	507	20	0.03	0.02	498	30	0.03	0.01
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	12,143	1,286	20	0.03	0.04	1,264	30	0.03	0.04
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	20,367	822	20	0.03	0.02	808	30	0.03	0.02
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	14,753	595	20	0.03	0.02	585	30	0.03	0.02
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	23,665	6,325	20	0.03	0.19	6,218	30	0.03	0.19
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,544	125	20	0.03	0.00	123	30	0.03	0.00
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,828	74	20	0.03	0.00	73	30	0.03	0.00
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	8,337	420	20	0.03	0.01	413	30	0.03	0.01
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	15,181	765	20	0.03	0.02	753	30	0.03	0.02
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	19,022	575	20	0.03	0.02	566	30	0.03	0.02
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	13,279	335	20	0.03	0.01	329	30	0.03	0.01
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	23,553	2,494	20	0.03	0.08	2,452	30	0.03	0.07
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	13,422	1,692	20	0.03	0.05	1,663	30	0.03	0.05
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	11,700	4,779	20	0.03	0.14	4,698	30	0.03	0.14
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	8,851	357	20	0.03	0.01	351	30	0.03	0.01
26	East Berkeley Street - west of Harrison Ave	2	0.30	12,842	1,943	20	0.03	0.06	1,910	30	0.03	0.06
27	Site Drive North - Albany Street	2	0.02	123	1	20	0.03	0.00	1	30	0.03	0.00
28	Site Drive South - Harrison Ave	2	0.02	982	10	20	0.03	0.00	10	30	0.03	0.00
29	Site Drive -Traveler Street	2	0.02	4,945	50	20	0.03	0.00	49	30	0.03	0.00
30	Site Drive - No Data	2	0.02	0	0	20	0.03	0.00	0	30	0.03	0.00
31	I-90 - west of 93	1	1.41	1,104,154	785,040	55	0.03	23.63	771,817	65	0.03	23.23
32	I-90 - east of 93	1	1.22	494,018	303,910	55	0.03	9.15	298,791	65	0.03	8.99
33	I-93 - north of 90	1	1.38	1,108,754	771,538	55	0.03	23.22	758,542	65	0.03	22.83
34	I-93 - south of 90	1	0.80	594,225	239,709	55	0.03	7.22	235,671	65	0.03	7.09

**Mesoscale Emissions**  
**(kilograms/day)**

**127.9**

**Peak Emissions Inventory**

**VMT Emissions (kg/day) PM10**

VMT = 2,140,704 **64.4**

**Idle Emissions (kg/day) PM10**

**0.1**

**Off-Peak Emissions Inventory**

**VMT Emissions (kg/day) PM10**

VMT = 2,104,644 **63.3**

**Idle Emissions (kg/day) PM10**

**0.1**

**Herald Square, Boston MA**  
**2016 Build with Mitigation Condition**

Nox No.	Description	Seasonally Adjusted		Peak	Peak Traffic Data			Off-Peak Traffic Data		
		AADT (veh/day)	ADT (veh/day)	Period Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	19,118	19,118	0.50	9,640	29.1	280,052	9,478	26.15	247,801
2	Washington Street - between Herald Street and Kneeland Street	8,665	8,665	0.50	4,369	5.6	24,249	4,296	5.00	21,457
3	Washington Street - between Herald Street and Mass Ave	8,665	8,665	0.50	4,369	6.9	29,929	4,296	6.17	26,482
4	Herald Street - between Washington Street and Harrison Ave	19,118	19,118	0.50	9,640	18.9	182,202	9,478	17.01	161,220
5	Harrison Ave - between Herald Street and Kneeland Street	5,311	5,311	0.50	2,678	13.8	36,823	2,633	12.38	32,582
6	Harrison Ave - between Herald Street and Traveler Street	9,098	9,098	0.50	4,588	16.4	75,010	4,510	14.72	66,372
7	Herald Street - between Harrison Ave and Albany Street	20,262	20,262	0.50	10,217	60.0	613,021	10,045	54.00	542,426
8	Albany Street - north of Herald Street	21,491	21,491	0.50	10,837	14.5	157,133	10,654	13.05	139,038
9	Albany Street - between Herald Street and I-93 SB On-ramp	41,753	41,753	0.50	21,054	2.3	47,371	20,699	2.03	41,916
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	29,784	29,784	0.50	15,018	13.0	194,488	14,765	11.66	172,091
11	Albany Street between Traveler Street and East Berkeley Street	14,360	14,360	0.50	7,241	11.4	82,545	7,119	10.26	73,039
12	Albany Street - between East Berkeley Street and Albany Street	12,143	12,143	0.50	6,123	0.0	0	6,020	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	20,367	20,367	0.50	10,270	0.0	0	10,097	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,753	14,753	0.50	7,439	16.6	123,492	7,314	14.94	109,271
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	23,665	23,665	0.50	11,933	60.0	715,994	11,732	54.00	633,540
16	Mullins Way - between Washington Street and Harrison Ave	3,544	3,544	0.50	1,787	7.3	12,956	1,757	6.53	11,464
17	Traveler Street - between Washington Street and Harrison Ave	1,828	1,828	0.50	922	0.0	0	906	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	8,337	8,337	0.50	4,204	33.3	139,990	4,133	29.97	123,868
19	East Berkeley Street - between Harrison Ave and Albany Street	15,181	15,181	0.50	7,655	21.5	164,197	7,526	19.31	145,288
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	19,022	19,022	0.50	9,592	6.0	57,070	9,430	5.36	50,498
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	13,279	13,279	0.50	6,696	5.4	35,824	6,583	4.82	31,698
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	23,553	23,553	0.50	11,876	0.0	0	11,676	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	13,422	13,422	0.50	6,768	19.3	130,618	6,654	17.37	115,576
24	Harrison Ave- between East Berkeley Street and Mass. Ave	11,700	11,700	0.50	5,900	17.6	103,836	5,800	15.84	91,878
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,851	8,851	0.50	4,463	0.0	0	4,388	0.00	0
26	East Berkeley Street - west of Harrison Ave	12,842	12,842	0.50	6,475	0.0	0	6,366	0.00	0
27	Site Drive North - Albany Street	123	123	0.50	62	2.3	139	61	2.03	123
28	Site Drive South - Harrison Ave	982	982	0.50	495	4.7	2,327	487	4.23	2,059
29	Site Drive -Traveler Street	4,945	4,945	0.50	2,494	28.2	70,321	2,452	25.38	62,222
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,104,154	1,104,154	0.50	556,766	0.0	0	547,388	0.00	0
32	I-90 - east of 93	494,018	494,018	0.50	249,107	0.0	0	244,911	0.00	0
33	I-93 - north of 90	1,108,754	1,108,754	0.50	559,086	0.0	0	549,668	0.00	0
34	I-93 - south of 90	594,225	594,225	0.50	299,636	0.0	0	294,589	0.00	0

Freeway	0	0
Arterial	3,279,585	2,901,908

**Idle Emission Parameters**

Pollutant	Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)
Freeway	0.0000	0	<b>0.00</b>	0.0000	0	<b>0.00</b>
Arterial	0.0000	69	<b>0.07</b>	0.0000	61	<b>0.06</b>
Total			<b>0.07</b>			<b>0.06</b>

0.030%  
99.970%

## Herald Square, Boston MA

### 2016 Build Condition

Link No.	Description	Seasonal			PEAK PERIOD			OFF-PEAK PERIOD				
		Roadway	Adjusted	VMT	Speed	E.M.F.	Emissions	VMT	Speed	E.M.F.	Emissions	
		Link Length	Volume	Peak	Peak	PM10	PM10	Off-Peak	Off-Peak	PM10	PM10	
Type	(miles)	(vehicles)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)		
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	19,122	3,953	20	0.03	0.12	3,887	30	0.03	0.12
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	8,675	1,356	20	0.03	0.04	1,333	30	0.03	0.04
3	Washington Street - between Herald Street and Mass Ave	2	0.97	8,675	4,243	20	0.03	0.13	4,171	30	0.03	0.13
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	19,122	771	20	0.03	0.02	758	30	0.03	0.02
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	5,319	1,180	20	0.03	0.04	1,160	30	0.03	0.03
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	9,118	276	20	0.03	0.01	271	30	0.03	0.01
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	20,262	1,022	20	0.03	0.03	1,004	30	0.03	0.03
8	Albany Street - north of Herald Street	2	0.21	21,528	2,280	20	0.03	0.07	2,241	30	0.03	0.07
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	41,790	632	20	0.03	0.02	622	30	0.03	0.02
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	29,823	1,654	20	0.03	0.05	1,626	30	0.03	0.05
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	14,373	507	20	0.03	0.02	499	30	0.03	0.02
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	12,157	1,287	20	0.03	0.04	1,266	30	0.03	0.04
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	20,389	822	20	0.03	0.02	809	30	0.03	0.02
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	14,753	595	20	0.03	0.02	585	30	0.03	0.02
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	23,681	6,329	20	0.03	0.19	6,222	30	0.03	0.19
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,546	125	20	0.03	0.00	123	30	0.03	0.00
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,836	74	20	0.03	0.00	73	30	0.03	0.00
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	8,421	425	20	0.03	0.01	417	30	0.03	0.01
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	15,196	766	20	0.03	0.02	753	30	0.03	0.02
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	19,059	577	20	0.03	0.02	567	30	0.03	0.02
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	13,297	335	20	0.03	0.01	330	30	0.03	0.01
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	23,555	2,494	20	0.03	0.08	2,452	30	0.03	0.07
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	13,424	1,692	20	0.03	0.05	1,664	30	0.03	0.05
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	11,714	4,784	20	0.03	0.14	4,704	30	0.03	0.14
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	8,865	358	20	0.03	0.01	352	30	0.03	0.01
26	East Berkeley Street - west of Harrison Ave	2	0.30	12,854	1,944	20	0.03	0.06	1,912	30	0.03	0.06
27	Site Drive North - Albany Street	2	0.02	127	1	20	0.03	0.00	1	30	0.03	0.00
28	Site Drive South - Harrison Ave	2	0.02	1,013	10	20	0.03	0.00	10	30	0.03	0.00
29	Site Drive -Traveler Street	2	0.02	5,103	51	20	0.03	0.00	51	30	0.03	0.00
30	Site Drive - No Data	2	0.02	0	0	20	0.03	0.00	0	30	0.03	0.00
31	I-90 - west of 93	1	1.41	1,104,154	785,040	55	0.03	23.63	771,817	65	0.03	23.23
32	I-90 - east of 93	1	1.22	494,018	303,910	55	0.03	9.15	298,791	65	0.03	8.99
33	I-93 - north of 90	1	1.38	1,108,754	771,538	55	0.03	23.22	758,542	65	0.03	22.83
34	I-93 - south of 90	1	0.80	594,225	239,709	55	0.03	7.22	235,671	65	0.03	7.09

**Mesoscale NOx Emissions  
(kilograms/day)**

**127.9**

Peak Emissions Inventory		Off-Peak Emissions Inventory	
VMT Emissions (kg/day)	PM10	VMT Emissions (kg/day)	PM10
VMT = 2,140,744	<b>64.4</b>	VMT = 2,104,684	<b>63.4</b>
Idle Emissions (kg/day)	PM10	Idle Emissions (kg/day)	PM10
	<b>0.1</b>		<b>0.1</b>



## Herald Square, Boston MA

### 2016 Build Condition

Nox No.	Description	Seasonally		Peak	Peak Traffic Data			Off-Peak Traffic Data		
		Adjusted AADT (veh/day)	Period ADT (veh/day)	Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	19,122	19,122	0.50	9,642	29.1	280,109	9,480	26.15	247,852
2	Washington Street - between Herald Street and Kneeland Street	8,675	8,675	0.50	4,374	5.6	24,277	4,300	5.00	21,481
3	Washington Street - between Herald Street and Mass Ave	8,675	8,675	0.50	4,374	6.9	29,963	4,300	6.17	26,512
4	Herald Street - between Washington Street and Harrison Ave	19,122	19,122	0.50	9,642	18.9	182,240	9,480	17.01	161,253
5	Harrison Ave - between Herald Street and Kneeland Street	5,319	5,319	0.50	2,682	13.8	36,877	2,637	12.38	32,630
6	Harrison Ave - between Herald Street and Traveler Street	9,118	9,118	0.50	4,598	16.4	75,172	4,520	14.72	66,515
7	Herald Street - between Harrison Ave and Albany Street	20,262	20,262	0.50	10,217	60.0	613,021	10,045	54.00	542,426
8	Albany Street - north of Herald Street	21,528	21,528	0.50	10,856	14.5	157,406	10,673	13.05	139,279
9	Albany Street - between Herald Street and I-93 SB On-ramp	41,790	41,790	0.50	21,073	2.3	47,413	20,718	2.03	41,953
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	29,823	29,823	0.50	15,038	13.0	194,744	14,785	11.66	172,318
11	Albany Street between Traveler Street and East Berkeley Street	14,373	14,373	0.50	7,248	11.4	82,624	7,126	10.26	73,109
12	Albany Street - between East Berkeley Street and Albany Street	12,157	12,157	0.50	6,130	0.0	0	6,027	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	20,389	20,389	0.50	10,281	0.0	0	10,108	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,753	14,753	0.50	7,439	16.6	123,492	7,314	14.94	109,271
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	23,681	23,681	0.50	11,941	60.0	716,469	11,740	54.00	633,960
16	Mullins Way - between Washington Street and Harrison Ave	3,546	3,546	0.50	1,788	7.3	12,963	1,758	6.53	11,470
17	Traveler Street - between Washington Street and Harrison Ave	1,836	1,836	0.50	926	0.0	0	910	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	8,421	8,421	0.50	4,246	33.3	141,407	4,175	29.97	125,122
19	East Berkeley Street - between Harrison Ave and Albany Street	15,196	15,196	0.50	7,663	21.5	164,366	7,534	19.31	145,438
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	19,059	19,059	0.50	9,610	6.0	57,182	9,449	5.36	50,597
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	13,297	13,297	0.50	6,705	5.4	35,871	6,592	4.82	31,740
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	23,555	23,555	0.50	11,877	0.0	0	11,677	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	13,424	13,424	0.50	6,769	19.3	130,637	6,655	17.37	115,593
24	Harrison Ave- between East Berkeley Street and Mass. Ave	11,714	11,714	0.50	5,907	17.6	103,958	5,807	15.84	91,986
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,865	8,865	0.50	4,470	0.0	0	4,395	0.00	0
26	East Berkeley Street - west of Harrison Ave	12,854	12,854	0.50	6,481	0.0	0	6,372	0.00	0
27	Site Drive North - Albany Street	127	127	0.50	64	2.3	144	63	2.03	127
28	Site Drive South - Harrison Ave	1,013	1,013	0.50	511	4.7	2,401	502	4.23	2,125
29	Site Drive -Traveler Street	5,103	5,103	0.50	2,573	28.2	72,570	2,530	25.38	64,213
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,104,154	1,104,154	0.50	556,766	0.0	0	547,388	0.00	0
32	I-90 - east of 93	494,018	494,018	0.50	249,107	0.0	0	244,911	0.00	0
33	I-93 - north of 90	1,108,754	1,108,754	0.50	559,086	0.0	0	549,668	0.00	0
34	I-93 - south of 90	594,225	594,225	0.50	299,636	0.0	0	294,589	0.00	0

Freeway	0	0
Arterial	3,285,307	2,906,970

#### Idle Emission Parameters

Pollutant	Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)
Freeway <b>PM10</b>	0.0000	0	<b>0.00</b>	0.0000	0	<b>0.00</b>
Arterial <b>PM10</b>	0.0000	69	<b>0.07</b>	0.0000	61	<b>0.06</b>
<b>Total</b>			<b>0.07</b>			<b>0.06</b>

## Herald Square, Boston MA

### 2016 No Build Condition

Link No.	Description	Roadway		Seasonal		PEAK PERIOD			OFF-PEAK PERIOD			
		Link Length	Type	Adjusted	VMT	Speed	E.M.F.	Emissions	VMT	Speed	E.M.F.	Emissions
				Volume	Peak	Peak	PM10	PM10	Off-Peak	Off-Peak	PM10	PM10
(miles)	(vehicles)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)			
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	18,996	3,927	20	0.03	0.12	3,861	30	0.03	0.12
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	8,358	1,307	20	0.03	0.04	1,284	30	0.03	0.04
3	Washington Street - between Herald Street and Mass Ave	2	0.97	8,358	4,088	20	0.03	0.12	4,019	30	0.03	0.12
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	18,996	766	20	0.03	0.02	753	30	0.03	0.02
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	5,065	1,124	20	0.03	0.03	1,105	30	0.03	0.03
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	8,485	257	20	0.03	0.01	252	30	0.03	0.01
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	20,262	1,022	20	0.03	0.03	1,004	30	0.03	0.03
8	Albany Street - north of Herald Street	2	0.21	20,325	2,152	20	0.03	0.06	2,116	30	0.03	0.06
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	40,587	614	20	0.03	0.02	604	30	0.03	0.02
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	28,557	1,584	20	0.03	0.05	1,557	30	0.03	0.05
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	13,930	492	20	0.03	0.01	483	30	0.03	0.01
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	11,714	1,240	20	0.03	0.04	1,220	30	0.03	0.04
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	19,692	794	20	0.03	0.02	781	30	0.03	0.02
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	14,753	595	20	0.03	0.02	585	30	0.03	0.02
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	23,175	6,193	20	0.03	0.19	6,089	30	0.03	0.18
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,483	123	20	0.03	0.00	121	30	0.03	0.00
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,583	64	20	0.03	0.00	63	30	0.03	0.00
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	5,699	287	20	0.03	0.01	283	30	0.03	0.01
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	14,690	741	20	0.03	0.02	728	30	0.03	0.02
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	17,856	540	20	0.03	0.02	531	30	0.03	0.02
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	12,727	321	20	0.03	0.01	315	30	0.03	0.01
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	23,491	2,488	20	0.03	0.07	2,446	30	0.03	0.07
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	13,360	1,684	20	0.03	0.05	1,656	30	0.03	0.05
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	11,271	4,603	20	0.03	0.14	4,526	30	0.03	0.14
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	8,421	340	20	0.03	0.01	334	30	0.03	0.01
26	East Berkeley Street - west of Harrison Ave	2	0.30	12,474	1,887	20	0.03	0.06	1,855	30	0.03	0.06
27	Site Drive North - Albany Street	2	0.02	0	0	20	0.03	0.00	0	30	0.03	0.00
28	Site Drive South - Harrison Ave	2	0.02	0	0	20	0.03	0.00	0	30	0.03	0.00
29	Site Drive -Traveler Street	2	0.02	0	0	20	0.03	0.00	0	30	0.03	0.00
30	Site Drive - No Data	2	0.02	0	0	20	0.03	0.00	0	30	0.03	0.00
31	I-90 - west of 93	1	1.41	1,104,154	785,040	55	0.03	23.63	771,817	65	0.03	23.23
32	I-90 - east of 93	1	1.22	494,018	303,910	55	0.03	9.15	298,791	65	0.03	8.99
33	I-93 - north of 90	1	1.38	1,108,754	771,538	55	0.03	23.22	758,542	65	0.03	22.83
34	I-93 - south of 90	1	0.80	594,225	239,709	55	0.03	7.22	235,671	65	0.03	7.09

**Mesoscale NOx Emissions  
(kilograms/day)**

**127.8**

**Peak Emissions Inventory**

<b>VMT Emissions (kg/day)</b>	<b>PM10</b>	<b>VMT Emissions (kg/day)</b>	<b>PM10</b>
VMT = 2,139,431	<b>64.4</b>	VMT = 2,103,393	<b>63.3</b>

**Off-Peak Emissions Inventory**

<b>Idle Emissions (kg/day)</b>	<b>PM10</b>	<b>Idle Emissions (kg/day)</b>	<b>PM10</b>
	<b>0.1</b>		<b>0.1</b>

## Herald Square, Boston MA

### 2016 No Build Condition

Nox No.	Description	Seasonally			Peak			Peak Traffic Data			Off-Peak Traffic Data		
		Adjusted	Peak	Period	Period	Average	Adjusted	Period	Average	Adjusted			
		ADDT (veh/day)	ADT (veh/day)	Factor	Volume (vehicles)	Delay (sec)	Delay (veh-sec)	Volume (vehicles)	Delay (sec)	Delay (veh-sec)			
1	Herald Street - between Kneeland Street and Washington Street	18,996	18,996	0.50	9,578	28.1	269,155	9,417	25.29	238,159			
2	Washington Street - between Herald Street and Kneeland Street	8,358	8,358	0.50	4,215	5.6	23,391	4,144	5.00	20,697			
3	Washington Street - between Herald Street and Mass Ave	8,358	8,358	0.50	4,215	6.8	28,448	4,144	6.08	25,172			
4	Herald Street - between Washington Street and Harrison Ave	18,996	18,996	0.50	9,578	18.6	177,680	9,417	16.70	157,219			
5	Harrison Ave - between Herald Street and Kneeland Street	5,065	5,065	0.50	2,554	13.8	35,121	2,511	12.38	31,076			
6	Harrison Ave - between Herald Street and Traveler Street	8,485	8,485	0.50	4,278	16.3	69,738	4,206	14.67	61,707			
7	Herald Street - between Harrison Ave and Albany Street	20,262	20,262	0.50	10,217	60.0	613,021	10,045	54.00	542,426			
8	Albany Street - north of Herald Street	20,325	20,325	0.50	10,249	13.4	137,336	10,076	12.06	121,520			
9	Albany Street - between Herald Street and I-93 SB On-ramp	40,587	40,587	0.50	20,466	2.6	52,188	20,121	2.30	46,178			
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	28,557	28,557	0.50	14,400	8.0	114,477	14,157	7.16	101,294			
11	Albany Street between Traveler Street and East Berkeley Street	13,930	13,930	0.50	7,024	12.3	86,046	6,906	11.03	76,137			
12	Albany Street - between East Berkeley Street and Albany Street	11,714	11,714	0.50	5,907	0.0	0	5,807	0.00	0			
13	I-93 NB On-Ramp - north of Traveler Street to I-93	19,692	19,692	0.50	9,930	0.0	0	9,762	0.00	0			
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,753	14,753	0.50	7,439	16.6	123,492	7,314	14.94	109,271			
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	23,175	23,175	0.50	11,686	60.0	701,143	11,489	54.00	620,399			
16	Mullins Way - between Washington Street and Harrison Ave	3,483	3,483	0.50	1,756	9.8	17,121	1,726	8.78	15,150			
17	Traveler Street - between Washington Street and Harrison Ave	1,583	1,583	0.50	798	0.0	0	785	0.00	0			
18	Traveler Street - between Harrison Ave and Albany Street	5,699	5,699	0.50	2,874	33.0	94,683	2,825	29.66	83,779			
19	East Berkeley Street - between Harrison Ave and Albany Street	14,690	14,690	0.50	7,407	19.9	147,036	7,283	17.87	130,103			
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	17,856	17,856	0.50	9,004	5.8	52,222	8,852	5.22	46,208			
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	12,727	12,727	0.50	6,418	4.7	29,842	6,309	4.19	26,405			
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	23,491	23,491	0.50	11,845	0.0	0	11,646	0.00	0			
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	13,360	13,360	0.50	6,737	19.3	129,684	6,623	17.33	114,750			
24	Harrison Ave- between East Berkeley Street and Mass. Ave	11,271	11,271	0.50	5,683	15.4	87,522	5,587	13.86	77,443			
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,421	8,421	0.50	4,246	0.0	0	4,175	0.00	0			
26	East Berkeley Street - west of Harrison Ave	12,474	12,474	0.50	6,290	0.0	0	6,184	0.00	0			
27	Site Drive North - Albany Street	0	0	0.50	0	2.6	0	0	2.30	0			
28	Site Drive South - Harrison Ave	0	0	0.50	0	0.0	0	0	0.00	0			
29	Site Drive -Traveler Street	0	0	0.50	0	0.0	0	0	0.00	0			
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0			
31	I-90 - west of 93	1,104,154	1,104,154	0.50	556,766	0.0	0	547,388	0.00	0			
32	I-90 - east of 93	494,018	494,018	0.50	249,107	0.0	0	244,911	0.00	0			
33	I-93 - north of 90	1,108,754	1,108,754	0.50	559,086	0.0	0	549,668	0.00	0			
34	I-93 - south of 90	594,225	594,225	0.50	299,636	0.0	0	294,589	0.00	0			

Freeway	0	0
Arterial	2,989,346	2,645,092

#### Idle Emission Parameters

Pollutant	Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)
Freeway	0.0000	0	0.00	0.0000	0	0.00
Arterial	0.0000	62	0.06	0.0000	55	0.06
<b>Total</b>			<b>0.06</b>			<b>0.06</b>

## Herald Square, Boston MA

### 2011 Existing Condition

Link No.	Roadway Description	Seasonal		VMT Peak	Speed Peak	PEAK PERIOD		OFF-PEAK PERIOD				
		Adjusted	VMT			E.M.F.	Emissions	VMT	Speed	E.M.F.	Emissions	
		Link Length	Volume			PM10	PM10	Off-Peak	Off-Peak	PM10	PM10	
Type	(miles)	(vehicles)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)	(veh-miles)	(mph)	(g/veh-mi)	(Kg/day)		
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	17,539	3,626	20	0.04	0.14	3,565	30	0.04	0.13
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	7,915	1,237	20	0.04	0.05	1,216	30	0.04	0.05
3	Washington Street - between Herald Street and Mass Ave	2	0.97	7,915	3,871	20	0.04	0.15	3,806	30	0.04	0.14
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	17,539	708	20	0.04	0.03	696	30	0.04	0.03
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	4,559	1,011	20	0.04	0.04	994	30	0.04	0.04
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	7,662	232	20	0.04	0.01	228	30	0.04	0.01
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	18,869	951	20	0.04	0.04	935	30	0.04	0.04
8	Albany Street - north of Herald Street	2	0.21	18,616	1,971	20	0.04	0.07	1,938	30	0.04	0.07
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	37,485	567	20	0.04	0.02	557	30	0.04	0.02
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	26,277	1,458	20	0.04	0.05	1,433	30	0.04	0.05
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	12,347	436	20	0.04	0.02	428	30	0.04	0.02
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	10,701	1,133	20	0.04	0.04	1,114	30	0.04	0.04
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	18,299	738	20	0.04	0.03	726	30	0.04	0.03
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	13,487	544	20	0.04	0.02	535	30	0.04	0.02
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	21,212	5,669	20	0.04	0.21	5,573	30	0.04	0.21
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	3,229	114	20	0.04	0.00	112	30	0.04	0.00
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	1,456	59	20	0.04	0.00	58	30	0.04	0.00
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	4,432	223	20	0.04	0.01	220	30	0.04	0.01
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	13,487	680	20	0.04	0.03	669	30	0.04	0.03
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	16,589	502	20	0.04	0.02	493	30	0.04	0.02
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	11,841	299	20	0.04	0.01	294	30	0.04	0.01
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	22,098	2,340	20	0.04	0.09	2,301	30	0.04	0.09
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	12,474	1,572	20	0.04	0.06	1,546	30	0.04	0.06
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	10,384	4,241	20	0.04	0.16	4,170	30	0.04	0.16
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	7,662	309	20	0.04	0.01	304	30	0.04	0.01
26	East Berkeley Street - west of Harrison Ave	2	0.30	11,524	1,743	20	0.04	0.07	1,714	30	0.04	0.06
27	Site Drive North - Albany Street	2	0.02	0	0	20	0.04	0.00	0	30	0.04	0.00
28	Site Drive South - Harrison Ave	2	0.02	0	0	20	0.04	0.00	0	30	0.04	0.00
29	Site Drive -Traveler Street	2	0.02	0	0	20	0.04	0.00	0	30	0.04	0.00
30	Site Drive - No Data	2	0.02	0	0	20	0.04	0.00	0	30	0.04	0.00
31	I-90 - west of 93	1	1.41	1,000,066	711,035	55	0.04	26.66	699,058	65	0.04	26.21
32	I-90 - east of 93	1	1.22	447,447	275,261	55	0.04	10.32	270,624	65	0.04	10.15
33	I-93 - north of 90	1	1.38	1,004,233	698,806	55	0.04	26.21	687,035	65	0.04	25.76
34	I-93 - south of 90	1	0.80	538,208	217,112	55	0.04	8.14	213,455	65	0.04	8.00

**Mesoscale Emissions  
(kilograms/day)**

**144.3**

**Peak Emissions Inventory**

<b>VMT Emissions (kg/day)</b>	<b>PM10</b>
VMT = 1,938,450	<b>72.7</b>

<b>Idle Emissions (kg/day)</b>	<b>PM10</b>
	<b>0.1</b>

**Off-Peak Emissions Inventory**

<b>VMT Emissions (kg/day)</b>	<b>PM10</b>
VMT = 1,905,797	<b>71.5</b>

<b>Idle Emissions (kg/day)</b>	<b>PM10</b>
	<b>0.1</b>

## Herald Square, Boston MA

### 2011 Existing Condition

Nox No.	Description	Seasonally		Peak	Peak Traffic Data			Off-Peak Traffic Data		
		Adjusted AADT (veh/day)	ADT (veh/day)	Period Factor	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	17,539	17,539	0.50	8,844	20.5	180,862	8,695	18.41	160,034
2	Washington Street - between Herald Street and Kneeland Street	7,915	7,915	0.50	3,991	5.6	22,150	3,924	5.00	19,599
3	Washington Street - between Herald Street and Mass Ave	7,915	7,915	0.50	3,991	6.7	26,540	3,924	5.99	23,484
4	Herald Street - between Washington Street and Harrison Ave	17,539	17,539	0.50	8,844	14.8	130,451	8,695	13.28	115,428
5	Harrison Ave - between Herald Street and Kneeland Street	4,559	4,559	0.50	2,299	13.6	31,149	2,260	12.20	27,562
6	Harrison Ave - between Herald Street and Traveler Street	7,662	7,662	0.50	3,863	16.3	62,779	3,798	14.63	55,549
7	Herald Street - between Harrison Ave and Albany Street	18,869	18,869	0.50	9,515	47.8	454,322	9,354	42.98	402,002
8	Albany Street - north of Herald Street	18,616	18,616	0.50	9,387	12.3	115,459	9,229	11.07	102,162
9	Albany Street - between Herald Street and I-93 SB On-Ramp	37,485	37,485	0.50	18,901	2.4	44,419	18,583	2.12	39,303
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	26,277	26,277	0.50	13,250	5.8	76,851	13,027	5.22	68,001
11	Albany Street between Traveler Street and East Berkeley Street	12,347	12,347	0.50	6,226	12.0	74,401	6,121	10.76	65,833
12	Albany Street - between East Berkeley Street and Albany Street	10,701	10,701	0.50	5,396	0.0	0	5,305	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	18,299	18,299	0.50	9,227	0.0	0	9,072	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	13,487	13,487	0.50	6,801	16.1	109,151	6,686	14.45	96,581
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	21,212	21,212	0.50	10,696	57.4	613,947	10,516	51.66	543,245
16	Mullins Way - between Washington Street and Harrison Ave	3,229	3,229	0.50	1,628	8.8	14,248	1,601	7.88	12,607
17	Traveler Street - between Washington Street and Harrison Ave	1,456	1,456	0.50	734	0.0	0	722	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	4,432	4,432	0.50	2,235	33.1	73,978	2,197	29.79	65,458
19	East Berkeley Street - between Harrison Ave and Albany Street	13,487	13,487	0.50	6,801	17.3	117,652	6,686	15.57	104,103
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	16,589	16,589	0.50	8,365	5.6	46,845	8,224	5.04	41,450
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	11,841	11,841	0.50	5,971	4.0	23,882	5,870	3.60	21,132
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	22,098	22,098	0.50	11,143	0.0	0	10,955	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	12,474	12,474	0.50	6,290	18.7	117,620	6,184	16.83	104,075
24	Harrison Ave - between East Berkeley Street and Mass. Ave	10,384	10,384	0.50	5,236	13.3	69,642	5,148	11.97	61,622
25	I-90 EB On-Ramp - north of Traveler Street to I-90	7,662	7,662	0.50	3,863	0.0	0	3,798	0.00	0
26	East Berkeley Street - west of Harrison Ave	11,524	11,524	0.50	5,811	0.0	0	5,713	0.00	0
27	Site Drive North - Albany Street	0	0	0.50	0	2.4	0	0	2.12	0
28	Site Drive South - Harrison Ave	0	0	0.50	0	0.0	0	0	0.00	0
29	Site Drive -Traveler Street	0	0	0.50	0	0.0	0	0	0.00	0
30	Site Drive - No Data	0	0	0.50	0	0.0	0	0	0.00	0
31	I-90 - west of 93	1,000,066	1,000,066	0.50	504,280	0.0	0	495,786	0.00	0
32	I-90 - east of 93	447,447	447,447	0.50	225,624	0.0	0	221,823	0.00	0
33	I-93 - north of 90	1,004,233	1,004,233	0.50	506,381	0.0	0	497,851	0.00	0
34	I-93 - south of 90	538,208	538,208	0.50	271,390	0.0	0	266,818	0.00	0

Freeway	0	0
Arterial	2,406,348	2,129,233

#### Idle Emission Parameters

	Pollutant	Peak Period Emissions			Off-Peak Period Emissions		
		(g/sec)	(g/day)	(kg/day)	(g/sec)	(g/day)	(kg/day)
Freeway	PM10	0.0000	0	0.00	0.0000	0	0.00
Arterial	PM10	0.0000	63	0.06	0.0000	55	0.06
Total				0.06			0.06

## Herald Square, Boston MA

Link Roadway No. Description	Roadway Type	2011 Existing Condition				2016 No Build Condition				2016 Build Condition				2016 Build with Mitigation Condition			
		Peak		Off Peak		Peak		Off Peak		Peak		Off Peak		Peak		Off Peak	
		Average Speed (mph)	PM10 EMF (g-veh/mi)	Average Speed (mph)	PM10 EMF (g-veh/mi)	Average Speed (mph)	PM10 EMF (g-veh/mi)	Average Speed (mph)	PM10 EMF (g-veh/mi)	Average Speed (mph)	PM10 EMF (g-veh/mi)	Average Speed (mph)	PM10 EMF (g-veh/mi)	Average Speed (mph)	PM10 EMF (g-veh/mi)	Average Speed (mph)	PM10 EMF (g-veh/mi)
1 Herald Street - between Kneeland Street and Washington Street	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
2 Washington Street - between Herald Street and Kneeland Street	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
3 Washington Street - between Herald Street and Mass Ave	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
4 Herald Street - between Washington Street and Harrison Ave	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
5 Harrison Ave - between Herald Street and Kneeland Street	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
6 Harrison Ave - between Herald Street and Traveler Street	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
7 Herald Street - between Harrison Ave and Albany Street	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
8 Albany Street - north of Herald Street	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
9 Albany Street - between Herald Street and I-93 SB On-ramp	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
10 Albany Street - between I-93 SB On-Ramp and Traveler Street	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
11 Albany Street between Traveler Street and East Berkeley Street	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
12 Albany Street - between East Berkeley Street and Albany Street	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
13 I-93 NB On-Ramp - north of Traveler Street to I-93	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
14 I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
15 I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
16 Mullins Way - between Washington Street and Harrison Ave	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
17 Traveler Street - between Washington Street and Harrison Ave	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
18 Traveler Street - between Harrison Ave and Albany Street	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
19 East Berkeley Street - between Harrison Ave and Albany Street	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
20 Traveler Street - between Albany Street and I-93 NB On-Ramp	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
21 East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
22 Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
23 West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
24 Harrison Ave- between East Berkeley Street and Mass. Ave	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
25 I-90 EB On-Ramp - north of Traveler Street to I-90	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03
26 East Berkeley Street - west of Harrison Ave	2	20	0.04	30	0.04	20	0.03	30	0.03	20	0.03	30	0.03	20	0.03	30	0.03

## Herald Square, Boston MA

Link No.	Roadway Description	2011 Existing Condition			2016 No Build Condition			2016 Build Condition				2016 Build with Mitigation Condition			
		Roadway S.A.F.	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Traffic Increase (no-build)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Traffic Increase (no-build)
1	Herald Street - between Kneeland Street and Washington Street	100%	17,539	17,539	18,996	18,996	8.3%	19,122	19,122	9.0%	0.7%	19,118	19,118	9.0%	0.6%
2	Washington Street - between Herald Street and Kneeland Street	100%	7,915	7,915	8,358	8,358	5.6%	8,675	8,675	9.6%	3.8%	8,665	8,665	9.5%	3.7%
3	Washington Street - between Herald Street and Mass Ave	100%	7,915	7,915	8,358	8,358	5.6%	8,675	8,675	9.6%	3.8%	8,665	8,665	9.5%	3.7%
4	Herald Street - between Washington Street and Harrison Ave	100%	17,539	17,539	18,996	18,996	8.3%	19,122	19,122	9.0%	0.7%	19,118	19,118	9.0%	0.6%
5	Harrison Ave - between Herald Street and Kneeland Street	100%	4,559	4,559	5,065	5,065	11.1%	5,319	5,319	16.7%	5.0%	5,311	5,311	16.5%	4.8%
6	Harrison Ave - between Herald Street and Traveler Street	100%	7,662	7,662	8,485	8,485	10.7%	9,118	9,118	19.0%	7.5%	9,098	9,098	18.8%	7.2%
7	Herald Street - between Harrison Ave and Albany Street	100%	18,869	18,869	20,262	20,262	7.4%	20,262	20,262	7.4%	0.0%	20,262	20,262	7.4%	0.0%
8	Albany Street - north of Herald Street	100%	18,616	18,616	20,325	20,325	9.2%	21,528	21,528	15.6%	5.9%	21,491	21,491	15.4%	5.7%
9	Albany Street - between Herald Street and I-93 SB On-ramp	100%	37,485	37,485	40,587	40,587	8.3%	41,790	41,790	11.5%	3.0%	41,753	41,753	11.4%	2.9%
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	100%	26,277	26,277	28,557	28,557	8.7%	29,823	29,823	13.5%	4.4%	29,784	29,784	13.3%	4.3%
11	Albany Street between Traveler Street and East Berkeley Street	100%	12,347	12,347	13,930	13,930	12.8%	14,373	14,373	16.4%	3.2%	14,360	14,360	16.3%	3.1%
12	Albany Street - between East Berkeley Street and Albany Street	100%	10,701	10,701	11,714	11,714	9.5%	12,157	12,157	13.6%	3.8%	12,143	12,143	13.5%	3.7%
13	I-93 NB On-Ramp - north of Traveler Street to I-93	100%	18,299	18,299	19,692	19,692	7.6%	20,389	20,389	11.4%	3.5%	20,367	20,367	11.3%	3.4%
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	100%	13,487	13,487	14,753	14,753	9.4%	14,753	14,753	9.4%	0.0%	14,753	14,753	9.4%	0.0%
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	100%	21,212	21,212	23,175	23,175	9.3%	23,681	23,681	11.6%	2.2%	23,665	23,665	11.6%	2.1%
16	Mullins Way - between Washington Street and Harrison Ave	100%	3,229	3,229	3,483	3,483	7.8%	3,546	3,546	9.8%	1.8%	3,544	3,544	9.7%	1.8%
17	Traveler Street - between Washington Street and Harrison Ave	100%	1,456	1,456	1,583	1,583	8.7%	1,836	1,836	26.1%	16.0%	1,828	1,828	25.5%	15.5%
18	Traveler Street - between Harrison Ave and Albany Street	100%	4,432	4,432	5,699	5,699	28.6%	8,421	8,421	90.0%	47.8%	8,337	8,337	88.1%	46.3%
19	East Berkeley Street - between Harrison Ave and Albany Street	100%	13,487	13,487	14,690	14,690	8.9%	15,196	15,196	12.7%	3.4%	15,181	15,181	12.6%	3.3%
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	100%	16,589	16,589	17,856	17,856	7.6%	19,059	19,059	14.9%	6.7%	19,022	19,022	14.7%	6.5%
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	100%	11,841	11,841	12,727	12,727	7.5%	13,297	13,297	12.3%	4.5%	13,279	13,279	12.2%	4.3%
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	100%	22,098	22,098	23,491	23,491	6.3%	23,555	23,555	6.6%	0.3%	23,553	23,553	6.6%	0.3%
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	100%	12,474	12,474	13,360	13,360	7.1%	13,424	13,424	7.6%	0.5%	13,422	13,422	7.6%	0.5%
24	Harrison Ave- between East Berkeley Street and Mass. Ave	100%	10,384	10,384	11,271	11,271	8.5%	11,714	11,714	12.8%	3.9%	11,700	11,700	12.7%	3.8%
25	I-90 EB On-Ramp - north of Traveler Street to I-90	100%	7,662	7,662	8,421	8,421	9.9%	8,865	8,865	15.7%	5.3%	8,851	8,851	15.5%	5.1%
26	East Berkeley Street - west of Harrison Ave	100%	11,524	11,524	12,474	12,474	8.2%	12,854	12,854	11.5%	3.0%	12,842	12,842	11.4%	3.0%

# Herald Square, Boston MA

Pollutant **PM10**

## MOBILE 6.2 Emission Factors

2011			2016		
Vehicle Speed (mph)	PM10 (g/veh-mile)		Vehicle Speed (mph)	PM10 (g/veh-mile)	
	Freeway	Arterial		Freeway	Arterial
2.5	0.0375	0.0375	2.5	0.0301	0.0301
3	0.0375	0.0375	3	0.0301	0.0301
4	0.0375	0.0375	4	0.0301	0.0301
5	0.0375	0.0375	5	0.0301	0.0301
6	0.0375	0.0375	6	0.0301	0.0301
7	0.0375	0.0375	7	0.0301	0.0301
8	0.0375	0.0375	8	0.0301	0.0301
9	0.0375	0.0375	9	0.0301	0.0301
10	0.0375	0.0375	10	0.0301	0.0301
11	0.0375	0.0375	11	0.0301	0.0301
12	0.0375	0.0375	12	0.0301	0.0301
13	0.0375	0.0375	13	0.0301	0.0301
14	0.0375	0.0375	14	0.0301	0.0301
15	0.0375	0.0375	15	0.0301	0.0301
16	0.0375	0.0375	16	0.0301	0.0301
17	0.0375	0.0375	17	0.0301	0.0301
18	0.0375	0.0375	18	0.0301	0.0301
19	0.0375	0.0375	19	0.0301	0.0301
20	0.0375	0.0375	20	0.0301	0.0301
21	0.0375	0.0375	21	0.0301	0.0301
22	0.0375	0.0375	22	0.0301	0.0301
23	0.0375	0.0375	23	0.0301	0.0301
24	0.0375	0.0375	24	0.0301	0.0301
25	0.0375	0.0375	25	0.0301	0.0301
26	0.0375	0.0375	26	0.0301	0.0301
27	0.0375	0.0375	27	0.0301	0.0301
28	0.0375	0.0375	28	0.0301	0.0301
29	0.0375	0.0375	29	0.0301	0.0301
30	0.0375	0.0375	30	0.0301	0.0301
31	0.0375	0.0375	31	0.0301	0.0301
32	0.0375	0.0375	32	0.0301	0.0301
33	0.0375	0.0375	33	0.0301	0.0301
34	0.0375	0.0375	34	0.0301	0.0301
35	0.0375	0.0375	35	0.0301	0.0301
36	0.0375	0.0375	36	0.0301	0.0301
37	0.0375	0.0375	37	0.0301	0.0301
38	0.0375	0.0375	38	0.0301	0.0301
39	0.0375	0.0375	39	0.0301	0.0301
40	0.0375	0.0375	40	0.0301	0.0301
41	0.0375	0.0375	41	0.0301	0.0301
42	0.0375	0.0375	42	0.0301	0.0301
43	0.0375	0.0375	43	0.0301	0.0301
44	0.0375	0.0375	44	0.0301	0.0301
45	0.0375	0.0375	45	0.0301	0.0301
46	0.0375	0.0375	46	0.0301	0.0301
47	0.0375	0.0375	47	0.0301	0.0301
48	0.0375	0.0375	48	0.0301	0.0301
49	0.0375	0.0375	49	0.0301	0.0301
50	0.0375	0.0375	50	0.0301	0.0301
51	0.0375	0.0375	51	0.0301	0.0301
52	0.0375	0.0375	52	0.0301	0.0301
53	0.0375	0.0375	53	0.0301	0.0301
54	0.0375	0.0375	54	0.0301	0.0301
55	0.0375	0.0375	55	0.0301	0.0301
56	0.0375	0.0375	56	0.0301	0.0301
57	0.0375	0.0375	57	0.0301	0.0301
58	0.0375	0.0375	58	0.0301	0.0301
59	0.0375	0.0375	59	0.0301	0.0301
60	0.0375	0.0375	60	0.0301	0.0301
60.7	0.0375	0.0375	60.7	0.0301	0.0301

ission factors were calculated by MOBILE 6.2 and composite vehicle type during summer conditions.



Herald Square, Boston MA

Link No.	Description	2011 Existing Condition					2016 No Build Condition					2016 Build Condition					2016 Build with Mitigation Condition				
		Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)
		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)			
1	Herald Street - between Kneeland Street and Washington Street	40.9	0.0	40.9	0.0	20.5	56.2	0.0	56.2	0.0	28.1	58.1	0.0	58.1	0.0	29.1	58.1	0.0	58.1	0.0	29.1
2	Washington Street - between Herald Street and Kneeland Street	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6
3	Washington Street - between Herald Street and Mass Ave	13.3	0.0	13.3	0.0	6.7	13.5	0.0	13.5	0.0	6.8	13.7	0.0	13.7	0.0	6.9	13.7	0.0	13.7	0.0	6.9
4	Herald Street - between Washington Street and Harrison Ave	29.5	0.0	29.5	0.0	14.8	37.1	0.0	37.1	0.0	18.6	37.8	0.0	37.8	0.0	18.9	37.8	0.0	37.8	0.0	18.9
5	Harrison Ave - between Herald Street and Kneeland Street	0.0	27.1	0.0	27.1	13.6	0.0	27.5	0.0	27.5	13.8	0.0	27.5	0.0	27.5	13.8	0.0	27.5	0.0	27.5	13.8
6	Harrison Ave - between Herald Street and Traveler Street	32.5	0.0	32.5	0.0	16.3	32.6	0.0	32.6	0.0	16.3	32.7	0.0	32.7	0.0	16.4	32.7	0.0	32.7	0.0	16.4
7	Herald Street - between Harrison Ave and Albany Street	95.5	0.0	95.5	0.0	47.8	130.6	0.0	120.0	0.0	60.0	130.6	0.0	120.0	0.0	60.0	130.6	0.0	120.0	0.0	60.0
8	Albany Street - north of Herald Street	0.0	24.6	0.0	24.6	12.3	0.0	26.8	0.0	26.8	13.4	0.0	29.0	0.0	29.0	14.5	0.0	29.0	0.0	29.0	14.5
9	Albany Street - between Herald Street and I-93 SB On-Ramp	0.0	4.7	0.0	4.7	2.4	0.0	5.1	0.0	5.1	2.6	0.0	4.5	0.0	4.5	2.3	0.0	4.5	0.0	4.5	2.3
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	0.0	11.6	0.0	11.6	5.8	0.0	15.9	0.0	15.9	8.0	0.0	25.9	0.0	25.9	13.0	0.0	25.9	0.0	25.9	13.0
11	Albany Street between Traveler Street and East Berkeley Street	0.0	23.9	0.0	23.9	12.0	0.0	24.5	0.0	24.5	12.3	0.0	22.8	0.0	22.8	11.4	0.0	22.8	0.0	22.8	11.4
12	Albany Street - between East Berkeley Street and Albany Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	32.1	0.0	32.1	0.0	16.1	33.2	0.0	33.2	0.0	16.6	33.2	0.0	33.2	0.0	16.6	33.2	0.0	33.2	0.0	16.6
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	114.8	0.0	114.8	0.0	57.4	153.4	0.0	120.0	0.0	60.0	150.8	0.0	120.0	0.0	60.0	150.8	0.0	120.0	0.0	60.0
16	Mullins Way - between Washington Street and Harrison Ave	17.5	0.0	17.5	0.0	8.8	19.5	0.0	19.5	0.0	9.8	14.5	0.0	14.5	0.0	7.3	14.5	0.0	14.5	0.0	7.3
17	Traveler Street - between Washington Street and Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	Traveler Street - between Harrison Ave and Albany Street	49.3	16.9	49.3	16.9	33.1	48.8	17.1	48.8	17.1	33.0	48.9	17.7	48.9	17.7	33.3	48.9	17.7	48.9	17.7	33.3
19	East Berkeley Street - between Harrison Ave and Albany Street	0.0	34.6	0.0	34.6	17.3	0.0	39.7	0.0	39.7	19.9	0.0	42.9	0.0	42.9	21.5	0.0	42.9	0.0	42.9	21.5
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	11.2	0.0	11.2	0.0	5.6	11.6	0.0	11.6	0.0	5.8	11.9	0.0	11.9	0.0	6.0	11.9	0.0	11.9	0.0	6.0
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	0.0	8.0	0.0	8.0	4.0	0.0	9.3	0.0	9.3	4.7	0.0	10.7	0.0	10.7	5.4	0.0	10.7	0.0	10.7	5.4
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	0.0	37.4	0.0	37.4	18.7	0.0	38.5	0.0	38.5	19.3	0.0	38.6	0.0	38.6	19.3	0.0	38.6	0.0	38.6	19.3
24	Harrison Ave - between East Berkeley Street and Mass. Ave	26.6	0.0	26.6	0.0	13.3	30.8	0.0	30.8	0.0	15.4	35.2	0.0	35.2	0.0	17.6	35.2	0.0	35.2	0.0	17.6
25	I-90 EB On-Ramp - north of Traveler Street to I-90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	East Berkeley Street - west of Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	Site Drive North - Albany Street	0.0	4.7	0.0	4.7	2.4	0.0	5.1	0.0	5.1	2.6	0.0	4.5	0.0	4.5	2.3	0.0	4.5	0.0	4.5	2.3
28	Site Drive South - Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.0	9.4	4.7	0.0	9.4	0.0	9.4	4.7
29	Site Drive -Traveler Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	54.4	2.0	54.4	28.2	2.0	54.4	2.0	54.4	28.2
30	Site Drive - No Data	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	I-90 - west of 93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	I-90 - east of 93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	I-93 - north of 90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	I-93 - south of 90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Herald Square, Boston MA  
PM Peak Condition

Link No.	Description	2011 Existing Condition				2016 No Build Condition				2016 Build Condition				2016 Build with Mitigation Condition			
		Delay by Approach				Delay by Approach				Delay by Approach				Delay by Approach			
		Northbound NB.EX	Southbound SB.EX	Eastbound EB.EX	Westbound WB.EX	Northbound NB.NB	Southbound SB.NB	Eastbound EB.NB	Westbound WB.NB	Northbound NB.BL	Southbound SB.BL	Eastbound EB.BL	Westbound WB.BL	Northbound NB.BLM	Southbound SB.BLM	Eastbound EB.BLM	Westbound WB.BLM
Int1	<a href="#">Herald Street and Washington Street</a>	13.3	11.1	40.9	0.0	13.5	11.1	56.2	0.0	13.7	11.1	58.1	0.0	13.7	11.1	58.1	0.0
Int2	<a href="#">Herald Street and Harrison Avenue</a>	32.5	27.1	29.5	0.0	32.6	27.5	37.1	0.0	32.7	27.5	37.8	0.0	32.7	27.5	37.8	0.0
Int3	<a href="#">Herald Street and Albany Street</a>	0.0	24.6	95.5	0.0	0.0	26.8	130.6	0.0	0.0	29.0	130.6	0.0	0.0	29.0	130.6	0.0
Int4	<a href="#">Traveler Street and Harrison Avenue</a>	40.1	41.8	0.0	16.9	41.6	62.5	0.0	17.1	45.5	176.5	0.0	17.7	45.5	176.5	0.0	17.7
Int5	<a href="#">Traveler Street and Albany Street</a>	0.0	11.6	49.3	0.0	0.0	15.9	48.8	0.0	0.0	25.9	48.9	0.0	0.0	25.9	48.9	0.0
Int6	<a href="#">Traveler Street and Frontage Road</a>	32.1	0.0	11.2	0.0	33.2	0.0	11.6	0.0	33.2	0.0	11.9	0.0	33.2	0.0	11.9	0.0
Int7	<a href="#">East Berkeley Street and Harrison Ave</a>	26.6	10.7	0.0	34.6	30.8	10.7	0.0	39.7	35.2	15.0	0.0	42.9	35.2	15.0	0.0	42.9
Int8	<a href="#">East Berkeley Street and Albany Street</a>	0.0	23.9	0.0	8.0	0.0	24.5	0.0	9.3	0.0	22.8	0.0	10.7	0.0	22.8	0.0	10.7
Int9	<a href="#">East Berkeley Street and Frontage Road</a>	114.8	0.0	0.0	37.4	153.4	0.0	0.0	38.5	150.8	0.0	0.0	38.6	150.8	0.0	0.0	38.6
Int10	<a href="#">William E. Mullins Way and Harrison Avenue</a>	4.4	0.0	17.5	16.6	4.7	0.0	19.5	18.1	4.5	0.0	14.5	0.0	4.5	0.0	14.5	0.0
Int11	<a href="#">Boston Herald Back and Albany Street</a>	0.0	4.7	Err	0.0	0.0	5.1	Err	0.0	0.0	4.5	10.2	0.0	0.0	4.5	10.2	0.0
Int12	<a href="#">South Site Driveway and Harrison Avenue</a>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.0	0.0	9.4	0.0
Int13	<a href="#">North Site Driveway and Harrison Avenue- No Data</a>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Int 14	<a href="#">Traveler Street and Site Driveway</a>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.4	2.0	0.5	0.0	54.4	2.0	0.5

# Herald Square, Boston MA

[Harrison Avenue, south of Herald Street](#)

Thursday 03/03/2011					Friday 03/04/2011					Weekday Average				
Begin Time	Volume	V/C Ratio	Peak Period Data		Begin Time	Volume	V/C Ratio	Peak Period Data		Begin Time	Total Volume	V/C Ratio	Peak Period Data	
			Hours	Volume				Hours	Volume				Hours	Volume
12:00 AM	70	0.06	0	0	12:00 AM	73	0.06	0	0	12:00 AM	72	0.06	0	0
1:00 AM	55	0.05	0	0	1:00 AM	71	0.06	0	0	1:00 AM	63	0.05	0	0
2:00 AM	41	0.03	0	0	2:00 AM	71	0.06	0	0	2:00 AM	56	0.05	0	0
3:00 AM	42	0.04	0	0	3:00 AM	49	0.04	0	0	3:00 AM	46	0.04	0	0
4:00 AM	57	0.05	0	0	4:00 AM	62	0.05	0	0	4:00 AM	60	0.05	0	0
5:00 AM	76	0.06	0	0	5:00 AM	74	0.06	0	0	5:00 AM	75	0.06	0	0
6:00 AM	151	0.13	0	0	6:00 AM	138	0.12	0	0	6:00 AM	145	0.12	0	0
7:00 AM	258	0.22	0	0	7:00 AM	288	0.24	0	0	7:00 AM	273	0.23	0	0
8:00 AM	361	0.30	1	361	8:00 AM	381	0.32	0	0	8:00 AM	371	0.31	0	0
9:00 AM	387	0.32	1	387	9:00 AM	395	0.33	0	0	9:00 AM	391	0.33	1	391
10:00 AM	341	0.28	0	0	10:00 AM	372	0.31	0	0	10:00 AM	357	0.30	0	0
11:00 AM	412	0.34	1	412	11:00 AM	412	0.34	0	0	11:00 AM	412	0.34	1	412
12:00 PM	350	0.29	0	0	12:00 PM	385	0.32	0	0	12:00 PM	368	0.31	0	0
1:00 PM	348	0.29	0	0	1:00 PM	423	0.35	1	423	1:00 PM	386	0.32	0	0
2:00 PM	419	0.35	1	419	2:00 PM	463	0.39	1	463	2:00 PM	441	0.37	1	441
3:00 PM	544	0.45	1	544	3:00 PM	528	0.44	1	528	3:00 PM	536	0.45	1	536
4:00 PM	555	0.46	1	555	4:00 PM	591	0.49	1	591	4:00 PM	573	0.48	1	573
5:00 PM	574	0.48	1	574	5:00 PM	589	0.49	1	589	5:00 PM	582	0.48	1	582
6:00 PM	322	0.27	0	0	6:00 PM	458	0.38	1	458	6:00 PM	390	0.33	1	390
7:00 PM	231	0.19	0	0	7:00 PM	306	0.26	0	0	7:00 PM	269	0.22	0	0
8:00 PM	169	0.14	0	0	8:00 PM	257	0.21	0	0	8:00 PM	213	0.18	0	0
9:00 PM	143	0.12	0	0	9:00 PM	182	0.15	0	0	9:00 PM	163	0.14	0	0
10:00 PM	155	0.13	0	0	10:00 PM	214	0.18	0	0	10:00 PM	185	0.15	0	0
11:00 PM	125	0.10	0	0	11:00 PM	218	0.18	0	0	11:00 PM	172	0.14	0	0
<b>Total</b>	<b>6,186</b>		<b>7</b>	<b>3,252</b>	<b>Total</b>	<b>7,000</b>		<b>6</b>	<b>3,052</b>	<b>Total</b>	<b>6,593</b>		<b>7</b>	<b>3,325</b>
<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>	<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>	<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>
		<b>30%</b>		<b>360</b>			<b>35%</b>		<b>420</b>			<b>33%</b>		<b>390</b>
<b>Peak Hour (K) Factor</b>		<b>0.093</b>		<b>(4:00-5:00 PM)</b>	<b>Peak Hour (K) Factor</b>		<b>0.084</b>		<b>(4:00-5:00 PM)</b>	<b>Peak Hour (K) Factor</b>		<b>0.088</b>		<b>(4:00-5:00 PM)</b>
<b>Peak Period Volume Factor</b>			<b>0.526</b>		<b>Peak Period Volume Factor</b>			<b>0.436</b>		<b>Peak Period Volume Factor</b>			<b>0.504</b>	

**Herald Square, Boston MA**  
**Average Daily Traffic (ADT) for Mesoscale Roadway Network**

Estimated TDM Adjustment = 3.10%

Unadjusted PM Peak Hour

Roadway Segment	2011 Existing Condition	2016 No Build Condition	2016 Build Condition	2016 Build with Mitigation Condition	K Factor	Seasonal Adjustment Factor	2011 Existing Condition	2016 No Build Condition	2016 Build Condition	2016 Build with Mitigation Condition
	Volume (ADT)	Volume (ADT)	Volume (ADT)	Volume (ADT)			Volume (ADT)	Volume (ADT)	Volume (ADT)	Volume (ADT)
					8.8%	111.4%				
1 Herald Street - between Kneeland Street and Washington Street	17,539	18,996	19,122	19,118			1385	1500	1510	1510
2 Washington Street - between Herald Street and Kneeland Street	7,915	8,358	8,675	8,665			625	660	685	684
3 Washington Street - between Herald Street and Mass Ave	7,915	8,358	8,675	8,665			625	660	685	684
4 Herald Street - between Washington Street and Harrison Ave	17,539	18,996	19,122	19,118			1385	1500	1510	1510
5 Harrison Ave - between Herald Street and Kneeland Street	4,559	5,065	5,319	5,311			360	400	420	419
6 Harrison Ave - between Herald Street and Traveler Street	7,662	8,485	9,118	9,098			605	670	720	718
7 Herald Street - between Harrison Ave and Albany Street	18,869	20,262	20,262	20,262			1490	1600	1600	1600
8 Albany Street - north of Herald Street	18,616	20,325	21,528	21,491			1470	1605	1700	1697
9 Albany Street - between Herald Street and I-93 SB On-ramp	37,485	40,587	41,790	41,753			2960	3205	3300	3297
10 Albany Street - between I-93 SB On-Ramp and Traveler Street	26,277	28,557	29,823	29,784			2075	2255	2355	2352
11 Albany Street between Traveler Street and East Berkeley Street	12,347	13,930	14,373	14,360			975	1100	1135	1134
12 Albany Street - between East Berkeley Street and Albany Street	10,701	11,714	12,157	12,143			845	925	960	959
13 I-93 NB On-Ramp - north of Traveler Street to I-93	18,299	19,692	20,389	20,367			1445	1555	1610	1608
14 I-93 NB On-Ramp - between Traveler Street and West 4th Street	13,487	14,753	14,753	14,753			1065	1165	1165	1165
15 I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	21,212	23,175	23,681	23,665			1675	1830	1870	1869
16 Mullins Way - between Washington Street and Harrison Ave	3,229	3,483	3,546	3,544			255	275	280	280
17 Traveler Street - between Washington Street and Harrison Ave	1,456	1,583	1,836	1,828			115	125	145	144
18 Traveler Street - between Harrison Ave and Albany Street	4,432	5,699	8,421	8,337			350	450	665	658
19 East Berkeley Street - between Harrison Ave and Albany Street	13,487	14,690	15,196	15,181			1065	1160	1200	1199
20 Traveler Street - between Albany Street and I-93 NB On-Ramp	16,589	17,856	19,059	19,022			1310	1410	1505	1502
21 East Berkeley Street - between Albany Street and I-93 NB On-Ramp	11,841	12,727	13,297	13,279			935	1005	1050	1049
22 Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	22,098	23,491	23,555	23,553			1745	1855	1860	1860
23 West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	12,474	13,360	13,424	13,422			985	1055	1060	1060
24 Harrison Ave- between East Berkeley Street and Mass. Ave	10,384	11,271	11,714	11,700			820	890	925	924
25 I-90 EB On-Ramp - north of Traveler Street to I-90	7,662	8,421	8,865	8,851			605	665	700	699
26 East Berkeley Street - west of Harrison Ave	11,524	12,474	12,854	12,842			910	985	1015	1014
27 Site Drive North - Albany Street	0	0	127	123			0	0	10	10
28 Site Drive South - Harrison Ave	0	0	1,013	982			0	0	80	78
29 Site Drive -Traveler Street	0	0	5,103	4,945			0	0	403	391
30 Site Drive - No Data	0	0	0	0			0	0	0	0
31 I-90 - west of 93	1,000,066	1,104,154	1,104,154	1,104,154			78,971	87,190	87,190	87190
32 I-90 - east of 93	447,447	494,018	494,018	494,018			35,333	39,010	39,010	39010
33 I-93 - north of 90	1,004,233	1,108,754	1,108,754	1,108,754			79,300	87,554	87,554	87554
34 I-93 - south of 90	538,208	594,225	594,225	594,225			42,500	46,923	46,923	46923

# Herald Square, Boston MA

STATION 8932 - BOSTON - RTE.I-93 - NORTH OF GRANITE AVE. AT HALLET ST.

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
04	170,788	180,330	186,604	178,396	198,379	197,000	198,000	200,961	195,770	196,686	195,000	194,000	190,993
						August	-	February					111%

## Herald Square, Boston MA

### Mesoscale Roadway Data

Link No.	Description	Roadway Type 1=Freeway 2=Arterial	Link Length (miles)	Speed Limit (mph)	Existing		No Build		Build	
					Peak Speed (mph)	Off-Peak Speed (mph)	Peak Speed (mph)	Off-Peak Speed (mph)	Peak Speed (mph)	Off-Peak Speed (mph)
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	30	20	30	20	30	20	30
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	30	20	30	20	30	20	30
3	Washington Street - between Herald Street and Mass Ave	2	0.97	30	20	30	20	30	20	30
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	30	20	30	20	30	20	30
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	30	20	30	20	30	20	30
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	30	20	30	20	30	20	30
7	Herald Street - between Harrison Ave and Albany Street	2	0.1	30	20	30	20	30	20	30
8	Albany Street - north of Herald Street	2	0.21	30	20	30	20	30	20	30
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	30	20	30	20	30	20	30
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	30	20	30	20	30	20	30
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	30	20	30	20	30	20	30
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	30	20	30	20	30	20	30
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	30	20	30	20	30	20	30
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	30	20	30	20	30	20	30
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	30	20	30	20	30	20	30
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	30	20	30	20	30	20	30
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	30	20	30	20	30	20	30
18	Traveler Street - between Harrison Ave and Albany Street	2	0.1	30	20	30	20	30	20	30
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.1	30	20	30	20	30	20	30
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	30	20	30	20	30	20	30
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	30	20	30	20	30	20	30
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	30	20	30	20	30	20	30
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	30	20	30	20	30	20	30
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	30	20	30	20	30	20	30
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	30	20	30	20	30	20	30
26	East Berkeley Street - west of Harrison Ave	2	0.3	30	20	30	20	30	20	30
27	Site Drive North - Albany Street	2	0.02	30	20	30	20	30	20	30
28	Site Drive South - Harrison Ave	2	0.02	30	20	30	20	30	20	30
29	Site Drive -Traveler Street	2	0.02	30	20	30	20	30	20	30
30	Site Drive - No Data	2	0.02	30	20	30	20	30	20	30
31	I-90 - west of 93	1	1.41	65	55	65	55	65	55	65
32	I-90 - east of 93	1	1.22	65	55	65	55	65	55	65
33	I-93 - north of 90	1	1.38	65	55	65	55	65	55	65
34	I-93 - south of 90	1	0.8	65	55	65	55	65	55	65

# Appendix F

## Noise Supporting Documentation



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### Noise Monitoring Data Summary

#### Mechanical Equipment Data

- Caterpillar 500 kW Generator
- Caterpillar 250 kW Generator
- Baltimore Aircoil Company Cooling Tower Series 3000 – 775 tons
- Baltimore Aircoil Company Cooling Tower Series 3000 – 375 tons
- AAON Roof Top Unit

#### Mechanical Equipment Sound Level Calculations

#### Traffic Input

#### Traffic Noise Model Results

# Noise Monitoring Data Summary

**Herald Square Development  
Boston, Massachusetts  
Noise Monitoring Sound Levels**

April 29, 2011

**Monitoring Location**

Property Line  
South Cove Manor Nursing Home/Trinity Church  
406 Harrison Ave

**Sound Level, L90 dB(A)**

65  
57  
65



# Mechanical Equipment Data

# Caterpillar 500 kW Generator

**PACKAGE DATA [C15DE6X]**

**APRIL 29, 2010**

For Help Desk Phone Numbers [Click here](#)

Feature Code: C15DE6X Rating Type: STANDBY Sales model Package: PGS500  
 Engine Sales Model: C15 Engine Arrangement Number: 2864924 Hertz: 60  
 EKW W/F: 500.0 Noise Reduction: 0 dBA Back Pressure: 0.0 inH2O

**Engine Package Information**

Engine Package Data

**Package Cooling Information**

Data not available.

**Package Sound Information**

**Open Sound Data**

Distance: 3.3 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 63HZ DB	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
500.0	100.0	104.9	101.5	95.8	102.8	98.8	101.1	98.0	92.4	89.5
375.0	75.0	104.4	100.3	94.8	102.9	98.8	100.7	97.2	91.8	87.6
250.0	50.0	104.0	98.7	93.9	103.2	98.8	100.3	96.4	91.2	85.8
125.0	25.0	104.0	97.7	93.6	103.4	98.8	100.4	96.3	91.1	85.2

Distance: 23.0 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 63HZ DB	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
500.0	100.0	94.9	91.5	85.8	92.8	88.8	91.1	88.0	92.4	79.5
375.0	75.0	94.4	90.3	84.8	92.9	88.8	90.7	87.2	81.8	77.6
250.0	50.0	94.0	88.7	83.9	93.2	88.8	90.3	86.4	81.2	75.8
125.0	25.0	94.0	87.7	83.6	93.4	88.8	90.4	86.3	81.1	75.2

Distance: 49.2 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 63HZ DB	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
500.0	100.0	88.9	85.5	79.8	86.8	82.8	85.1	82.0	76.4	73.5
375.0	75.0	88.4	84.3	78.8	86.9	82.8	84.7	81.2	75.8	71.6
250.0	50.0	88.0	82.7	77.9	87.2	82.8	84.3	80.4	75.2	69.8
125.0	25.0	88.0	81.7	77.6	87.4	82.8	84.4	80.3	75.1	69.2

### SA Canopy Sound Data

Distance: 3.3 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 63HZ DB	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
500.0	100.0	87.0	90.5	91.2	91.4	83.0	80.7	76.4	71.3	68.5
375.0	75.0	85.8	88.9	89.8	90.5	81.6	79.6	75.1	70.0	66.5
250.0	50.0	84.8	87.3	88.2	89.8	80.3	79.6	74.0	68.8	64.3
125.0	25.0	84.7	86.6	87.5	89.7	80.0	78.5	73.8	68.6	83.5

Distance: 23.0 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 63HZ DB	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
500.0	100.0	75.8	83.4	81.8	80.3	72.9	68.2	63.9	59.4	55.0
375.0	75.0	74.5	81.9	80.4	79.2	71.4	66.7	62.3	57.4	51.9
250.0	50.0	73.2	80.2	78.9	78.3	70.0	65.3	60.9	55.8	49.2
125.0	25.0	72.9	79.6	78.3	78.1	69.6	65.0	60.6	55.5	48.6

Distance: 49.2 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 63HZ DB	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
500.0	100.0	69.8	77.4	75.8	74.3	66.9	62.2	57.9	53.4	49.0
375.0	75.0	68.5	75.9	74.4	73.2	65.4	60.7	56.3	51.4	45.9
250.0	50.0	67.2	74.2	72.9	72.3	64.0	59.3	54.9	49.8	43.2
125.0	25.0	66.9	73.6	72.3	72.1	63.6	59.0	54.6	49.5	42.6

### Open Exhaust Sound Data

Distance: 3.3 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 63HZ DB	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
500.0	100.0	121.2	118.1	115.4	119.8	114.0	109.5	105.6	100.2	92.7
375.0	75.0	120.8	118.2	115.0	119.4	113.6	109.8	105.4	99.8	90.7
250.0	50.0	118.2	110.5	110.5	115.6	111.3	105.1	103.5	96.4	83.9
125.0	25.0	111.6	89.4	92.9	108.1	104.2	101.4	99.0	88.1	60.2

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Caterpillar Confidential: **Green**  
 Content Owner: Shane Gilles  
 Web Master(s): [PSG Web Based Systems Support](#)

Current Date: Thursday, April 29, 2010 11:52:17 AM  
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[Data Privacy Statement.](#)

# Caterpillar 250 kW Generator

## PACKAGE DATA

<b>Feature Code:</b>	C09DE02	<b>Rating Type:</b>	STANDBY	<b>Sales model Package:</b>	PGS250
<b>Engine Sales Model:</b>	C9	<b>Engine Arrangement Number:</b>	2575707	<b>Hertz:</b>	60
<b>EKW W/F:</b>	250.0	<b>Noise Reduction:</b>	0 dBA	<b>Back Pressure:</b>	0.0 inH2O

### Package Sound Information

#### Open Sound Data

**Distance:** 3.3 Feet

<b>EKW W/F</b>	<b>% LOAD</b>	<b>OVERALL SOUND DB(A)</b>	<b>OBCF 63HZ DB</b>	<b>OBCF 125HZ DB</b>	<b>OBCF 250HZ DB</b>	<b>OBCF 500HZ DB</b>	<b>OBCF 1000HZ DB</b>	<b>OBCF 2000HZ DB</b>	<b>OBCF 4000HZ DB</b>	<b>OBCF 8000HZ DB</b>
250.0	100.0	100.7	98.5	91.9	98.3	93.9	97.3	93.8	88.7	82.3
187.5	75.0	100.4	97.5	90.9	98.4	93.2	97.3	93.3	88.0	81.0
125.0	50.0	100.2	96.0	89.7	98.3	92.7	97.3	93.0	87.4	79.8
62.5	25.0	100.2	95.1	89.0	98.1	92.8	97.3	93.0	87.5	79.5

**Distance:** 23.0 Feet

<b>EKW W/F</b>	<b>% LOAD</b>	<b>OVERALL SOUND DB(A)</b>	<b>OBCF 63HZ DB</b>	<b>OBCF 125HZ DB</b>	<b>OBCF 250HZ DB</b>	<b>OBCF 500HZ DB</b>	<b>OBCF 1000HZ DB</b>	<b>OBCF 2000HZ DB</b>	<b>OBCF 4000HZ DB</b>	<b>OBCF 8000HZ DB</b>
250.0	100.0	90.7	88.5	81.9	88.3	83.9	87.3	83.8	78.7	72.3
187.5	75.0	90.4	87.5	80.9	88.4	83.2	87.3	83.3	78.0	71.0
125.0	50.0	90.3	86.5	80.1	88.3	82.8	87.3	83.0	77.5	70.1
62.5	25.0	90.2	85.1	79.0	88.1	82.8	87.3	83.0	77.5	69.54

**Distance:** 49.2 Feet

<b>EKW W/F</b>	<b>% LOAD</b>	<b>OVERALL SOUND DB(A)</b>	<b>OBCF 63HZ DB</b>	<b>OBCF 125HZ DB</b>	<b>OBCF 250HZ DB</b>	<b>OBCF 500HZ DB</b>	<b>OBCF 1000HZ DB</b>	<b>OBCF 2000HZ DB</b>	<b>OBCF 4000HZ DB</b>	<b>OBCF 8000HZ DB</b>
250.0	100.0	84.7	82.5	75.9	82.3	77.9	81.3	77.8	72.7	66.3
187.5	75.0	84.4	81.5	74.9	82.4	77.2	81.3	77.3	72.0	65.0
125.0	50.0	84.2	80.0	73.7	82.3	76.7	81.3	77.0	71.4	63.8
62.5	25.0	84.2	79.1	73.0	82.1	76.8	81.3	77.0	71.5	63.5

# PACKAGE DATA

**Feature Code:** C09DE02    **Rating Type:** STANDBY    **Sales model Package:** PGS250  
**Engine Sales Model:** C9    **Engine Arrangement Number:** 2575707    **Hertz:** 60  
**EKW W/F:** 250.0    **Noise Reduction:** 0 dBA    **Back Pressure:** 0.0 inH2O

## Package Sound Information

### WP Canopy Sound Data

**Distance:** 3.3 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 63HZ DB	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
250.0	100.0	95.2	97.3	93.6	93.5	91.0	90.3	88.5	84.0	82.5
187.5	75.0	94.7	96.1	92.5	93.1	90.2	90.0	88.2	83.7	81.5
125.0	50.0	94.4	94.0	90.7	92.5	89.5	89.9	87.9	83.4	79.8
62.5	25.0	94.3	92.5	89.3	92.3	89.6	90.0	88.0	83.2	78.4

**Distance:** 23.0 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 63HZ DB	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
250.0	100.0	83.6	87.6	84.7	84.5	80.1	77.9	76.1	71.5	71.7
187.5	75.0	83.3	86.4	83.9	84.2	78.9	78.0	76.2	71.3	70.7
125.0	50.0	83.2	84.7	82.6	83.9	77.9	78.5	76.7	71.2	68.7
62.5	25.0	83.5	83.5	81.6	83.7	77.7	79.1	77.1	71.4	67.3

**Distance:** 49.2 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 63HZ DB	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
250.0	100.0	77.6	81.6	78.7	78.5	74.1	71.9	70.1	65.5	65.7
187.5	75.0	77.3	80.4	77.9	78.2	72.9	72.0	70.2	65.3	64.7
125.0	50.0	77.2	78.7	76.6	77.9	71.9	72.5	70.7	65.2	62.7
62.5	25.0	77.5	77.5	75.6	77.7	71.7	73.1	71.1	65.4	61.3



# PACKAGE DATA

<b>Feature Code:</b>	C09DF02	<b>Rating Type:</b>	STANDBY	<b>Sales model Package:</b>	PGS250
<b>Engine Sales Model:</b>	C9	<b>Engine Arrangement Number:</b>	2575707	<b>Hertz:</b>	60
<b>EKW W/F:</b>	250.0	<b>Noise Reduction:</b>	0 dBA	<b>Back Pressure:</b>	0.0 inH2O

## Package Sound Information

### SA Canopy Sound Data

**Distance:** 3.3 Feet

<b>EKW W/F</b>	<b>% LOAD</b>	<b>OVERALL SOUND DB(A)</b>	<b>OBCF 63HZ DB</b>	<b>OBCF 125HZ DB</b>	<b>OBCF 250HZ DB</b>	<b>OBCF 500HZ DB</b>	<b>OBCF 1000HZ DB</b>	<b>OBCF 2000HZ DB</b>	<b>OBCF 4000HZ DB</b>	<b>OBCF 8000HZ DB</b>
250.0	100.0	82.7	91.1	87.9	85.1	79.9	75.3	72.6	70.4	67.6
187.5	75.0	82.1	90.0	86.7	84.8	79.8	74.7	72.2	68.7	65.9
125.0	50.0	81.4	88.2	84.8	84.2	79.5	74.2	71.7	66.8	63.5
62.5	25.0	81.0	86.9	83.5	83.7	79.1	74.1	71.6	66.0	62.0

**Distance:** 23.0 Feet

<b>EKW W/F</b>	<b>% LOAD</b>	<b>OVERALL SOUND DB(A)</b>	<b>OBCF 63HZ DB</b>	<b>OBCF 125HZ DB</b>	<b>OBCF 250HZ DB</b>	<b>OBCF 500HZ DB</b>	<b>OBCF 1000HZ DB</b>	<b>OBCF 2000HZ DB</b>	<b>OBCF 4000HZ DB</b>	<b>OBCF 8000HZ DB</b>
250.0	100.0	71.0	82.1	77.6	74.8	68.5	61.8	57.5	56.2	51.3
187.5	75.0	70.1	80.9	76.4	74.2	67.5	61.5	56.8	54.8	49.3
125.0	50.0	69.3	79.3	74.5	73.5	66.7	61.3	55.9	53.1	46.6
62.5	25.0	68.9	78.4	73.4	73.2	66.5	61.3	55.5	52.3	45.1

**Distance:** 49.2 Feet

<b>EKW W/F</b>	<b>% LOAD</b>	<b>OVERALL SOUND DB(A)</b>	<b>OBCF 63HZ DB</b>	<b>OBCF 125HZ DB</b>	<b>OBCF 250HZ DB</b>	<b>OBCF 500HZ DB</b>	<b>OBCF 1000HZ DB</b>	<b>OBCF 2000HZ DB</b>	<b>OBCF 4000HZ DB</b>	<b>OBCF 8000HZ DB</b>
250.0	100.0	65.0	76.1	71.6	68.8	62.5	55.8	51.5	50.2	45.3
187.5	75.0	64.1	74.9	70.4	68.2	61.5	55.5	50.8	48.8	43.3
125.0	50.0	63.3	73.3	68.5	67.5	60.7	55.3	49.9	47.1	40.6
62.5	25.0	62.9	72.4	67.4	67.2	60.5	55.3	49.5	46.3	39.1

**Baltimore Aircoil Company  
Cooling Tower Series 3000 – 775 tons**

**Baltimore Aircoil Company**  
**Cooling Tower Selection Program**

Version: 7.2.4 NA  
 Product data correct as of: November 29, 2011

Project Name: HERALD PRELIMINARY 775 TON  
 Selection Name:  
 Project State/Province:  
 Project Country: United States  
 Date: December 27, 2011

**Selection Parameters**

Product Line: Series 3000

**Design Conditions**

Flow Rate: 2325.00 USGPM  
 Hot Water Temp.: 95.00 ° F  
 Cold Water Temp.: 85.00 ° F  
 Wet Bulb Temp.: 76.00 ° F

**Selection Requirements**

Number of Units: 1 to 9  
 Reserve Capability: -2% minimum  
 Max. Total Fan Motor Power: 999 HP  
 Max. Length (All): 999 ft  
 Max. Width: 999 ft  
 Max. Height: 999 ft  
 Intake Derate Options: None  
 Internal Derate Options: None  
 Discharge Derate Options: None  
 Fan Type: Low Sound

**User-Chosen Selection**

Thermal performance for this selection is certified by the Cooling Tower Institute (CTI).

<u>Qty</u>	<u>Model</u>	<u>Total Fan Motor (HP)</u>	<u>Tower Pumping Head (psi)</u>	<u>Reserve Capability (%)</u>
1	3872C-OM	30.00	7.85	2.51

This selection assumes an open and unobstructed installation; no external static pressure unless specified above; and, unless specified above no accessories which may affect airflow through the unit, such as capacity control dampers, solid bottom panels, discharge hood, and sound attenuation. If one or more of these assumptions do not apply to this project, please use the program to compute the applicable performance derate or contact your local BAC sales representative.

**Baltimore Aircoil Company**  
**Cooling Tower Selection Program**  
**Series 3000**

Version: 7.2.4 NA  
 Product data correct as of: November 29, 2011

Project Name: HERALD PRELIMINARY 775 TON  
 Selection Name:  
 Project State/Province:  
 Project Country: United States  
 Date: December 27, 2011

**Model: 3872C-OM**      **Intake Option: None**  
**Number of Units: 1**    **Internal Option: None**  
**No. of Fans/Unit: 1**    **Discharge Option: None**  
                                  **Fan Type: Low Sound**

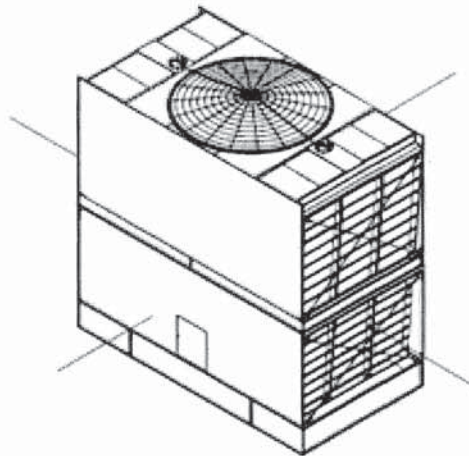
**Total Standard Fan Power per Unit: 30.00 HP**  
**Fan Motor Alternative: Full Speed**

Octave band and A-weighted sound pressure levels (Lp) are expressed in decibels (dB) reference 0.0002 microbar. Sound power levels (Lw) are expressed in decibels (dB) reference one picowatt. Octave band 1 has a center frequency of 63 Hertz.

Top Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	79	68
2	79	69
3	78	68
4	75	62
5	72	58
6	66	53
7	62	49
8	60	46
A-wgtd	77	65

Air Inlet Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	78	65
2	79	64
3	78	66
4	72	63
5	66	58
6	60	50
7	55	44
8	52	41
A-wgtd	74	64

End Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	75	69
2	75	63
3	73	65
4	66	59
5	62	55
6	55	47
7	48	41
8	46	37
A-wgtd	69	61



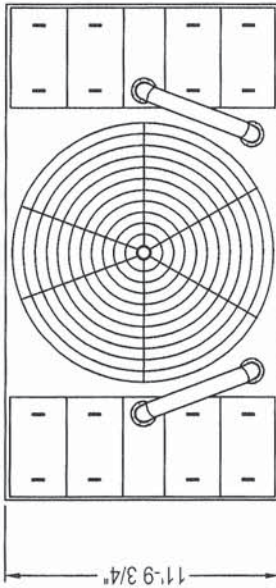
End Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	75	69
2	75	63
3	73	65
4	66	59
5	62	55
6	55	47
7	48	41
8	46	37
A-wgtd	69	61

Air Inlet Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	78	65
2	79	64
3	78	66
4	72	63
5	66	58
6	60	50
7	55	44
8	52	41
A-wgtd	74	64

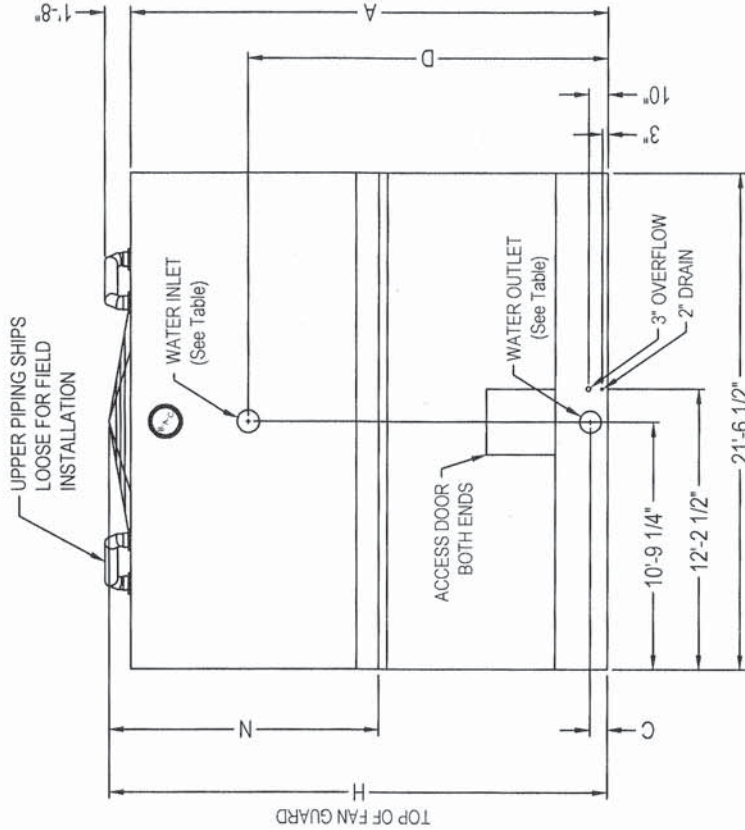
Sound Power (dB)		
Octave Band	Center Frequency (Hertz)	Lw
1	63	100
2	125	97
3	250	98
4	500	94
5	1000	89
6	2000	82
7	4000	77
8	8000	74

**Note:** The use of frequency inverters (Variable Frequency Drives) can increase sound levels.

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PLAN VIEW



SIDE ELEVATION

Model Number	Shipping Weight	Heaviest Section	Operating Weight	"A" Dimension	"D" Dimension	"H"		"N"	
						Standard Fan	Low Sound Fan	Standard Fan	Low Sound Fan
3872C	15380	8600	33700	18-1 1/2"	13-0 1/2"	19'-0 7/8"	10'-3 1/8"	10'-3 1/8"	10'-3 1/8"
3923C	15590	8810	33910	18-1 1/2"	13-0 1/2"	19'-6 7/8"	10'-3 1/8"	10'-3 1/8"	10'-9 1/8"
3970C	16550	9770	34870	18-1 1/2"	13-0 1/2"	19'-6 7/8"	10'-3 1/8"	10'-3 1/8"	10'-9 1/8"
3985C-PM	16360	9210	36500	20-9 1/2"	15-8 1/2"	21'-8 7/8"	11'-7 1/8"	11'-7 1/8"	11'-7 1/8"
3985C-QM	16360	9210	36500	20-9 1/2"	15-8 1/2"	21'-8 7/8"	11'-7 1/8"	11'-7 1/8"	11'-7 1/8"
3985C	16360	9210	36500	20-9 1/2"	15-8 1/2"	22'-2 7/8"	11'-7 1/8"	11'-7 1/8"	12-1 1/8"
31056C	16440	9290	36590	20-9 1/2"	15-8 1/2"	22'-2 7/8"	11'-7 1/8"	11'-7 1/8"	12-1 1/8"

Water Inlet and Outlet Sizing			
Flow Range	End Inlet Size	End Outlet Size	"C" Dimension
556 - 3200	12"	12"	9 1/8"
3201 - 3700	14"	14"	9 5/8"

NOTES:

- Unless otherwise indicated, connections 3" and smaller are MPT. Connections 4" and larger are grooved to suit a mechanical coupling and beveled for welding.
- All dimensions are in feet and inches. Weights are in pounds and represent the standard unit configuration. Some accessories require weight adds that are shown on the respective accessory drawings.
- For weight loadings and support requirements, refer to the suggested steel support drawing.
- The area above the fan discharge must be unobstructed.
- Piping must not be supported by the lower inlet or outlet connections.
- Refer to make-up valve drawing for location and size of make-up valve connections.
- Top of Fan Guard dimension may include cowl extension which may not be shown.
- Some accessories require height adds that are shown on the respective accessory drawings.

\* Due to height limitations on truck shipments, the fan guard may ship unmounted.

PRELIMINARY ONLY - VERIFY ALL INFORMATION WITH A BAC SUBMITTAL PACKAGE.

END ELEVATION (FACE A)

ORDER NO:

DATE:



Baltimore Aircoil

Series 3000 Unit Print  
End Inlet Easy Connection / End Outlet / Pump Suction

DRAWING NUMBER:

BAC-CA0GE0C100

**Baltimore Aircoil Company  
Cooling Tower Series 3000 – 375 tons**

**Baltimore Aircoil Company**  
**Cooling Tower Selection Program**

Version: 7.2.4 NA  
 Product data correct as of: November 29, 2011

Project Name: HERALD PRELIMINARY 375 TONS  
 Selection Name:  
 Project State/Province:  
 Project Country: United States  
 Date: December 27, 2011

**Selection Parameters**

Product Line: Series 3000

**Design Conditions**

Flow Rate: 1125.00 USGPM  
 Hot Water Temp.: 95.00 ° F  
 Cold Water Temp.: 85.00 ° F  
 Wet Bulb Temp.: 76.00 ° F

**Selection Requirements**

Number of Units: 1 to 9  
 Reserve Capability: -2% minimum  
 Max. Total Fan Motor Power: 999 HP  
 Max. Length (All): 999 ft  
 Max. Width: 999 ft  
 Max. Height: 999 ft  
 Intake Derate Options: None  
 Internal Derate Options: None  
 Discharge Derate Options: None  
 Fan Type: Low Sound

**User-Chosen Selection**

Thermal performance for this selection is certified by the Cooling Tower Institute (CTI).

<u>Qty</u>	<u>Model</u>	<u>Total Fan Motor (HP)</u>	<u>Tower Pumping Head (psi)</u>	<u>Reserve Capability (%)</u>
1	3412C-LM	15.00	4.32	0.84

This selection assumes an open and unobstructed installation; no external static pressure unless specified above; and, unless specified above no accessories which may affect airflow through the unit, such as capacity control dampers, solid bottom panels, discharge hood, and sound attenuation. If one or more of these assumptions do not apply to this project, please use the program to compute the applicable performance derate or contact your local BAC sales representative.

**Baltimore Aircoil Company**  
**Cooling Tower Selection Program**  
**Series 3000**

Version: 7.2.4 NA  
 Product data correct as of: November 29, 2011

Project Name: HERALD PRELIMINARY 375 TONS  
 Selection Name:  
 Project State/Province:  
 Project Country: United States  
 Date: December 27, 2011

**Model: 3412C-LM**      **Intake Option: None**  
**Number of Units: 1**    **Internal Option: None**  
**No. of Fans/Unit: 1**    **Discharge Option: None**  
                                  **Fan Type: Low Sound**

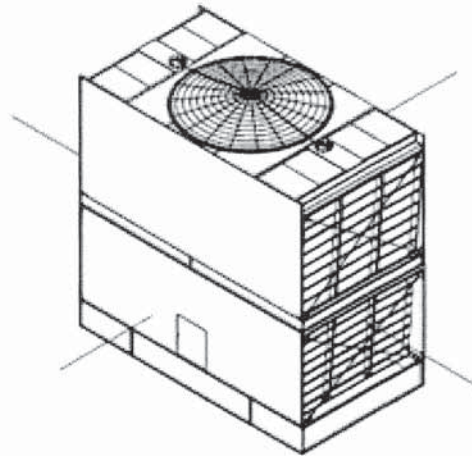
**Total Standard Fan Power per Unit: 15.00 HP**  
**Fan Motor Alternative: Full Speed**

Octave band and A-weighted sound pressure levels (Lp) are expressed in decibels (dB) reference 0.0002 microbar. Sound power levels (Lw) are expressed in decibels (dB) reference one picowatt. Octave band 1 has a center frequency of 63 Hertz.

Top Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	75	65
2	76	66
3	75	65
4	71	59
5	68	55
6	62	50
7	58	46
8	57	43
A-wgtd	73	62

Air Inlet Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	76	62
2	78	61
3	77	63
4	71	59
5	65	55
6	60	47
7	55	42
8	52	39
A-wgtd	73	60

End Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	70	63
2	71	58
3	68	59
4	62	54
5	58	49
6	51	41
7	45	36
8	42	34
A-wgtd	64	55



End Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	70	63
2	71	58
3	68	59
4	62	54
5	58	49
6	51	41
7	45	36
8	42	34
A-wgtd	64	55

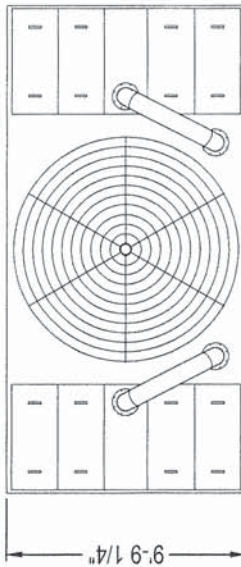
Air Inlet Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	76	62
2	78	61
3	77	63
4	71	59
5	65	55
6	60	47
7	55	42
8	52	39
A-wgtd	73	60

Sound Power (dB)		
Octave Band	Center Frequency (Hertz)	Lw
1	63	95
2	125	94
3	250	94
4	500	90
5	1000	85
6	2000	79
7	4000	74
8	8000	71

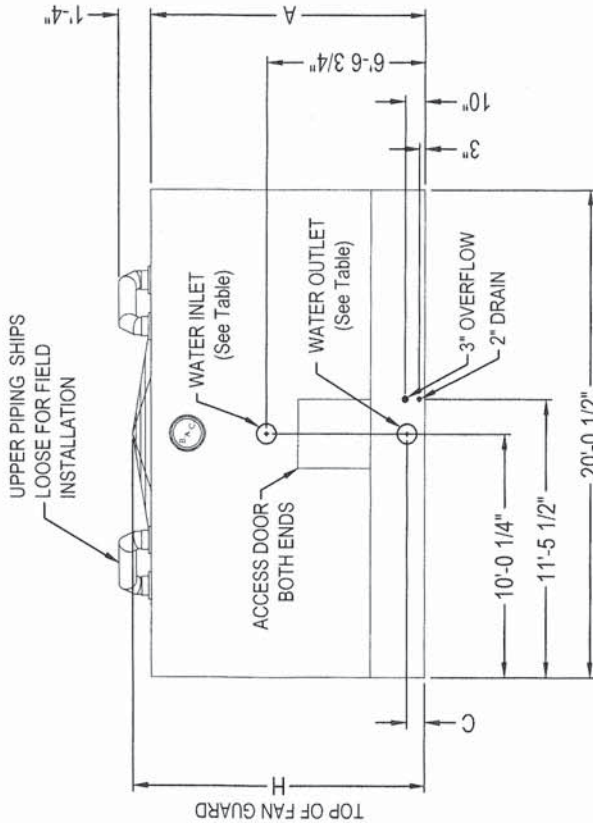
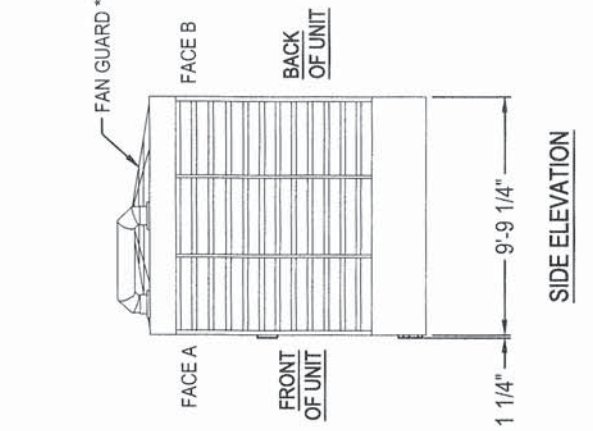
**Note:** The use of frequency inverters (Variable Frequency Drives) can increase sound levels.



Model Number	Shipping Weight	Operating Weight	"A" Dimension	"H"	Low Sound Fan
3412C	9390	19000	9'-11 3/4"	10'-9 1/8"	11'-3 1/8"
3436C	9440	19050	9'-11 3/4"	10'-9 1/8"	11'-3 1/8"
3455C	9710	19770	11'-3 3/4"	12'-1 1/8"	12'-7 1/8"
3482C	9760	19820	11'-3 3/4"	12'-1 1/8"	12'-7 1/8"
3527C	9920	19980	11'-3 3/4"	12'-1 1/8"	12'-7 1/8"



Water Inlet and Outlet Sizing			
Flow Range	End Inlet Size	End Outlet Size	"C" Dimension
286 - 1300	8"	8"	8 1/16"
1301 - 2300	10"	10"	9 1/8"
2301 - 2600	10"	12"	9 1/8"



- NOTES:**
- Unless otherwise indicated, connections 3" and smaller are MPT. Connections 4" and larger are grooved to suit a mechanical coupling and beveled for welding.
  - All dimensions are in feet and inches. Weights are in pounds and represent the standard unit configuration. Some accessories require weight adds that are shown on the respective accessory drawings.
  - For weight loadings and support requirements, refer to the suggested steel support drawing.
  - The area above the fan discharge must be unobstructed.
  - Piping must not be supported by the tower inlet or outlet connections.
  - Refer to make-up valve drawing for location and size of make-up valve connections.
  - Top of Fan Guard dimension may include cowl extensions which may not be shown.
  - Some accessories require height adds that are shown on the respective accessory drawings.
- \* Due to height limitations on truck shipments, the fan guard may ship unmounted.

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**Baltimore Aircoil**

Series 3000 Unit Print

End Inlet Easy Connection / End Outlet / Pump Suction

DRAWING NUMBER:  
**BAC-CA0GB0B100**

ORDER NO:

DATE:

# AAON Roof Top Unit



# Unit Rating

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094  
AAONEcat32 Ver. 4.165 (SN: 5770512-JHVDV4ZQ)

1A 1B 1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23

**RN-020-3-0-EB0A-3C9:M000-U0B-DER-AGA-CJAAH0F-00-00E0000AB**

Tag: RTU# 1

## Job Information

Job Name: *Herald Sq*  
Job Number: *AHA*  
Site Altitude: *0 ft*  
Refrigerant: *R-410A*

## Static Pressure

External: *1.50 in. wg.*  
Evaporator: *0.25 in. wg.*  
Filters Clean: *0.21 in. wg.*  
Dirt Allowance: *0.35 in. wg.*

## Cooling Section

	Gross	Net
Total Capacity:	<i>235.78</i>	<i>225.71 MBH</i>
Sensible Capacity:	<i>155.70</i>	<i>145.63 MBH</i>
Latent Capacity:	<i>80.09 MBH</i>	
Mixed Air Temp:	<i>80.00 °F DB</i>	<i>67.00 °F WB</i>
Entering Air Temp:	<i>80.00 °F DB</i>	<i>67.00 °F WB</i>
Lv Air Temp (Coil):	<i>50.75 °F DB</i>	<i>50.55 °F WB</i>
Lv Air Temp (Unit):	<i>52.59 °F DB</i>	<i>51.35 °F WB</i>
Digital Comp. Capacity Ratio:	<i>100%</i>	
Supply Air Fan:	<i>1 x 270 @ 3.54 BHP</i>	
SA Fan RPM / Width:	<i>1087 / 4.659"</i>	
Evaporator Coil:	<i>19.9 ft² / 6 Rows / 12 FPI</i>	
Evaporator Face Velocity:	<i>251.7 fpm</i>	

## AHRI Listing Information

Cooling Capacity (MBH): *238.0*  
Cooling EER: *12.3*  
Cooling IEER: *14.8*  
Application EER @ Op. Conditions: *11.2*

## Electrical Data

Rating: *460/3/60*  
Unit FLA: *46*

Minimum Circuit Amp: *50*  
Maximum Overcurrent: *60*

	Qty	HP	VAC	Phase	RPM	FLA	RLA
Compressor 1:	1		460	3			16.7
Compressor 2:	1		460	3			16.7
Condenser Fans:	2	0.75	460	1	1075	2.3	
Supply Fan:	1	5.00	460	3	1170	8.1	
Combustion:	2	0.25	460	1	3200	0.9	

## Cabinet Sound Power Levels\*

Octave Bands:	63	125	250	500	1000	2000	4000	8000
Discharge LW(dB):	84	83	86	84	80	82	80	75
Return LW(dB):	72	70	68	62	63	59	48	40

\*Sound power levels are given for informational purposes only. The sound levels are not guaranteed.

## Unit Information

Approx. Op./Ship Weights: *2761 / 2761 lbs.*  
Supply CFM/ESP: *5000 / 1.5 in. wg.*  
Pre-Filter FV / Qty: *240.00 fpm / 6*  
Final-Filter FV / Qty: *240.00 fpm / 6*  
Outside CFM: *5000*  
Ambient Temperature: *91 °F DB / 74 °F WB*

Economizer: *0.00 in. wg.*  
Heating: *0.14 in. wg.*  
Cabinet: *0.03 in. wg.*  
Re-Heat Coil: *0.03 in. wg.*  
Total: *2.51 in. wg.*

## Heating Section

PreHeat Type: *Std (No Preheat)*  
Heating Type: *Nat. Gas Heat*  
Heating CFM: *5000*  
Total Capacity: *432.0 MBH*  
OA Temp: *6.0 DB / 4.0°F WB*  
RA Temp: *75.0 °F DB / 62.0 °F WB*  
Entering Air Temp: *6.0 °F DB / 4.0 °F WB*  
Leaving Air Temp: *86.0 °F DB / 51.9 °F WB*  
Input: *540.0 MBH*  
Heater Qty: *1*  
Consumption: *540.0 MBH*

## Re-Heat Coil:

Capacity: *104 MBH*  
LA DB / WB: *70.00 °F / 58.36 °F*  
RH: *50%*



# 27.0" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094  
AAONEcat32 Ver. 4.165 (SN: 5770512-JHVDV4ZQ)

## JOB INFORMATION:

Job Name: *Herald Sq*  
 Job Tag: *RTU# 1*  
 Rep Firm:  
 Date: *03/30/2011*

## WHEEL SPECIFICATION:

Max RPM: *1,800*  
 Diameter x Qty: *27.4 in. x 1*  
 Width%: *76*  
 Tip Speed: *7,797 FPM*  
 Inertia: *16 WR<sup>2</sup>*

## OPERATING CONDITIONS:

Air Flow: *5,000 CFM*  
 Static Pressure: *2.51 in. Wg.*  
 Plenum DP: *0.00 in. Wg.*  
 Inlet Grill DP: *0.00 in. Wg.*  
 TSP: *2.51 in. Wg.*  
 Site Altitude: *0.00 Ft*  
 TSP @ Sea Level: *2.51 in. Wg.*

## MOTOR SELECTION:

Rated HP / Bypass: *5 / No*  
 Frame Size: *215T*  
 Nominal RPM: *1170*  
 VAC/PH/HZ: *460/3/60*  
 Efficiency: *Premium / 0.895*  
 Enclosure Type: *ODP*  
 Max Inertial Load: *117 WR<sup>2</sup>*

## FAN PERFORMANCE:

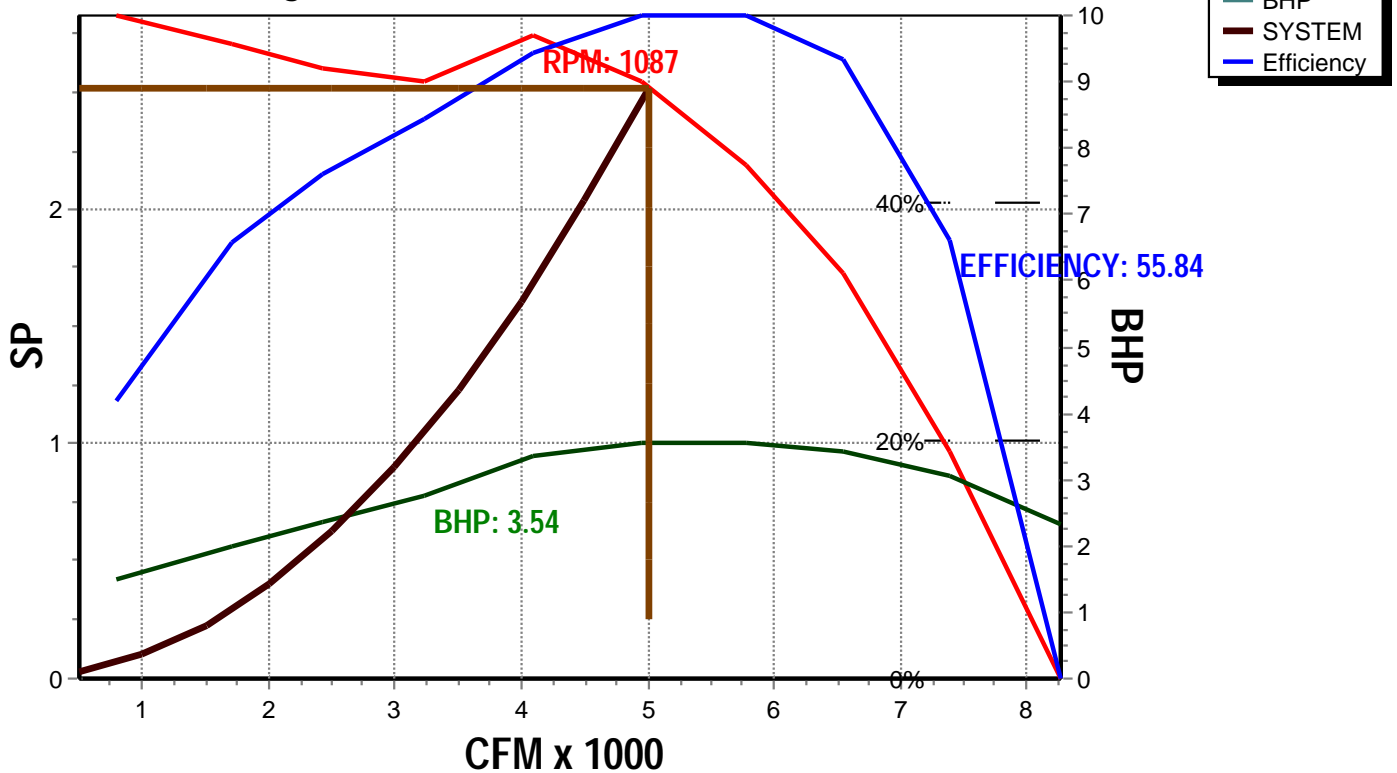
RPM: *1087*  
 BHP: *3.54*  
 Efficiency: *55.8%*  
 In/Out Velocity: *1305/1366 FPM*  
 Plenum Out Velocity: *83 FPM*

## FAN SOUND POWER (Inlet/Outlet):

Octave Band:	(Re 10 <sup>-12</sup> watts)							
	1	2	3	4	5	6	7	8
	82	79	78	77	77	78	77	76
	84	83	86	85	83	85	83	78

SOUND POWER A-Weighted: **86 / 91 dB**

**Supply Fan Model: 270 @ 1087 RPM and 76% Width**  
**Design Conditions: 5000 CFM @ 2.51" SP**





# Unit Submittal

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094  
AAONEcat32 Ver. 4.165 (SN: 5770512-JHVDV4ZQ)

1A 1B 1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23

**RN-020-3-0-EB0A-3C9:M000-U0B-DER-AGA-CJAAH0F-00-00E0000AB**  
Tag: RTU# 1

Job Name:  
Job Number:

Herald Sq  
AHA

Unit Submittal For:  
Unit Submittal Date:

March 30, 2011

	Base Option	Description
<b>R</b>	Series	Roof Top Unit
<b>N</b>	Generation	Ninth Generation
<b>020</b>	Unit Size	Twenty
<b>3</b>	Voltage	460V/3Ø/60Hz
<b>0</b>	Interior Protection	Standard
<b>E</b>	Refrigerant Style	R-410A Variable Capacity Scroll Compressor (VCC)
<b>B</b>	Unit Configuration	Air-Cooled Cond. + 6 Row Evap. Coil
<b>0</b>	Coil Coating	Standard
<b>A</b>	Cooling/Heat Pump Staging	Modulating - All Variable Capacity Compressors
<b>3</b>	Heating Type	Natural Gas Stainless Steel
<b>C</b>	Heating Designation	Heat C - 540 MBtuh
<b>9</b>	Heating Staging	Modulating Gas - Temperature Control

	Feature Option	Description
<b>M</b>	1A. RA/OA Section	Motorized 100% Outside Air Dampers - No RA Opening
<b>0</b>	1B. RA/EA Blower Configuration	Standard - None
<b>0</b>	1C. RA/EA Blower	Standard - None
<b>0</b>	1D. RA/EA Blower Motor	Standard - None
<b>U</b>	2. OA Control	2 Position Actuator
<b>0</b>	3. Heat Options	Standard
<b>B</b>	4. Maintenance Options	115V Convenience Outlet - Factory Wired
<b>D</b>	5A. SA Blower Configuration	1 Blower + Premium Efficiency Motor + 1 VFD
<b>E</b>	5B. SA Blower	27" Direct Drive Backward Curved Plenum
<b>R</b>	5C. SA Motor	5.0 hp - 1170 rpm
<b>A</b>	6A. Pre Filter Type	2" Pleated Pre Filter - 30% Eff
<b>G</b>	6B. Unit Filter Type	4" Pleated - 85% Eff - MERV 13
<b>A</b>	6C. Filter Options	Clogged Filter Switch
<b>C</b>	7. Refrigeration Control	Fan Cycling
<b>J</b>	8. Refrigeration Options	HGB Lead + HGB Lag + MHGR
<b>A</b>	9. Refrigeration Accessories	Sight Glass
<b>A</b>	10. Power Options	Power Switch - 100 amps
<b>H</b>	11. Safety Options	Remote Safety Shutdown Terminals
<b>0</b>	12. Controls	Standard
<b>F</b>	13. Special Controls	Make Up Air Unit Controller - CV Cool + CV Heat
<b>0</b>	14A. Preheat Configuration	Standard - None
<b>0</b>	14B. Preheat Sizing	Standard - None
<b>0</b>	15. Glycol Percent	Water or No WSHP
<b>0</b>	16. Interior Cabinet Options	Standard - Double Wall + R-13 Foam Insulation + Stainless Steel Drain Pan
<b>E</b>	17. Exterior Cabinet Options	Base Insulation + Cond. Coil Guards
<b>0</b>	18. Customer Code	Standard
<b>0</b>	19. Code Options	Standard - ETL U.S.A. Listing
<b>0</b>	20. Crating	Standard
<b>0</b>	21. Water-Cooled Cond.	Standard - None
<b>A</b>	22. Control Vendors	Wattmaster Controls
<b>B</b>	23. Type	Standard - Includes AAON Gray Paint



# VCMX Components

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094  
AAONEcat32 Ver. 4.165 (SN: 5770512-JHVDV4ZQ)

1A 1B 1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23

**RN-020-3-0-EB0A-3C9:M000-U0B-DER-AGA-CJAAH0F-00-00E0000AB**

Tag: RTU# 1

Job Name: *Herald Sq*

VCMX For:

Job Number: *AHA*

VCMX Date:

*March 30, 2011*

## Hardware Included For VCMX Controller

Part #	Included Parts	Assigned Channel
R90800	VCMX Controller with Modbus	
R82890	Supply Air Temp Sensor - Field Installed	MainController\AI2
R81550	Outside Air Temp Sensor	MainController\AI4
R69190	VCMX Large Expansion Module	
P62520	Proof of Flow Sensor	LargeExpansionModule\BI3
P62520	Dirty Filter Sensor	LargeExpansionModule\BI2
R34700	Outside Air Humidity Sensor	LargeExpansionModule\AI1
R82930	VCMX E-Bus Distribution Module	
R74870	VCMX Full Digital Module	
R28390	Suction Pressure Transducer	

		1	2	3	4	5	6	7
VCMX Controller with Modbus	Analog In		X		X			
	Analog Out	X	X					
	Binary In							
	Relay Out	X	X					
	Digital Sensor(s)							

		1	2	3	4	5	6	7	8
VCMX Large Expansion Module	Analog In	X							
	Analog Out								
	Binary In	X	X	X					
	Relay Out								

# Mechanical Equipment Sound Level Calculations

<b>Resultant Noise Levels at Receptor Locations [dBA]</b>				
	<b>REC1</b>	<b>REC2</b>	<b>REC3</b>	<b>REC4</b>
Description	Property Line	South Cove Manor Nursing Home/Trinity Church	406 Harrison Avenue	Proposed 275 Albany Street Development
Noise Monitoring Data [dBA]	<b>65</b>	<b>57</b>	<b>65</b>	<b>65</b>
Noise Source [dBA]	49	43	43	<b>50</b>
Calculated Noise Level [dBA]	<b>65</b>	<b>57</b>	<b>65</b>	<b>65</b>
Difference	0	0	0	0



<b>Monitoring Data - Ambient Sound Levels (dBA)</b>				
April 29, 2011				
Station		MD1	MD2	MD3
Description		Property Line	South Cove Manor Nursing Home/Trinity Church	406 Harrison Avenue
Existing Sound Levels	L90	65	57	65

Receptor Descriptions				
	REC1	REC2	REC3	REC4
Description	Property Line	South Cove Manor Nursing Home/Trinity Church	406 Harrison Avenue	Proposed 275 Albany Street Development
Nearest Reference [#]	1	2	3	3

**Noise Source Descriptions**

		NS1	NS2	NS3	NS4	NS5	NS6	NS7	NS8
<b>Noise Source Descriptions</b>		775 ton Cooling Tower	500 kW Generator	375 ton Cooling Tower	250 kW Generator	Bldg#1 HVAC	Bldg#2 HVAC	Bldg#3 HVAC	Bldg#4 HVAC
<b>Noise Sources</b>									
Unit 1	Source Description								
	Noise Level [dBA]	65	70	62	65	56	56	56	56
	Reference distance [ft]	50	49	50	49	50	50	50	50
	# units [#]	1	1	1	1	2	2	2	2
	Noise Source Level Attenuation [dBA]								
		65	70	62	65	59	59	59	59
Unit 2	Source Description								
	Noise Level [dBA]								
	Reference distance [ft]								
	# units [#]								
	Noise Source Level Attenuation [dBA]								
Unit 3	Source Description								
	Noise Level [dBA]								
	Reference distance [ft]								
	# units [#]								
	Noise Source Level Attenuation [dBA]								
Unit 4	Source Description								
	Noise Level [dBA]								
	Reference distance [ft]								
	# units [#]								
	Noise Source Level Attenuation [dBA]								
Unit 5	Source Description								
	Noise Level [dBA]								
	Reference distance [ft]								
	# units [#]								
	Noise Source Level Attenuation [dBA]								
<b>Total Noise Source Sound Level [dBA]</b>		<b>65</b>	<b>70</b>	<b>62</b>	<b>65</b>	<b>59</b>	<b>59</b>	<b>59</b>	<b>59</b>
<b>Reference distance [ft]</b>		<b>50</b>	<b>49.2</b>	<b>50</b>	<b>49.2</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>

Ground Type Between Receptors and Noise Sources					
		REC1	REC2	REC3	REC4
		Property Line	South Cove Manor Nursing Home/Trinity Church	406 Harrison Avenue	Proposed 275 Albany Street Development
NS1	775 ton Cooling Tower	H	H	H	H
NS2	500 kW Generator	H	H	H	H
NS3	375 ton Cooling Tower	H	H	H	H
NS4	250 kW Generator	H	H	H	H
NS5	Bldg#1 HVAC	H	H	H	H
NS6	Bldg#2 HVAC	H	H	H	H
NS7	Bldg#3 HVAC	H	H	H	H
NS8	Bldg#4 HVAC	H	H	H	H

Distances from RECEPTOR TO NOISE SOURCE (in feet)					
		REC1	REC2	REC3	REC4
		Property Line	South Cove Manor Nursing Home/Trinity Church	406 Harrison Avenue	Proposed 275 Albany Street Development
NS1	775 ton Cooling Tower	235	870	960	610
NS2	500 kW Generator	235	870	960	610
NS3	375 ton Cooling Tower	335	960	535	210
NS4	250 kW Generator	335	960	535	210
NS5	Bldg#1 HVAC	335	885	1085	725
NS6	Bldg#2 HVAC	235	870	960	610
NS7	Bldg#3 HVAC	115	775	665	430
NS8	Bldg#4 HVAC	335	960	535	210

Receptor Level Attenuation					
		REC1	REC2	REC3	REC4
Description		Property Line	South Cove Manor Nursing Home/Trinity Church	406 Harrison Avenue	Proposed 275 Albany Street Development
NS1	775 ton Cooling Tower	-10	-5	-10	-10
NS2	500 kW Generator	-10	-5	-10	-10
NS3	375 ton Cooling Tower	-10	-5	-5	-5
NS4	250 kW Generator	-10	-5	-5	-5
NS5	Bldg#1 HVAC	-10	-5	-10	-10
NS6	Bldg#2 HVAC	-10	-5	-10	-10
NS7	Bldg#3 HVAC	-10	-5	-10	-10
NS8	Bldg#4 HVAC	-10	-5	-5	-5

## Noise Propagation Calculator

		REC1	REC2	REC3	REC4
Description		Property Line	South Cove Manor Nursing Home/Trinity Church	406 Harrison Avenue	Proposed 275 Albany Street Development
NS1	775 ton Cooling Tower	42	35	29	33
NS2	500 kW Generator	46	40	34	38
NS3	375 ton Cooling Tower	35	31	36	45
NS4	250 kW Generator	38	34	39	47
NS5	Bldg#1 HVAC	32	29	22	26
NS6	Bldg#2 HVAC	36	29	23	27
NS7	Bldg#3 HVAC	42	30	27	30
NS8	Bldg#4 HVAC	32	28	33	42
<b>TOTAL</b>		<b>49</b>	<b>43</b>	<b>43</b>	<b>50</b>

# Traffic Input



INPUT: TRAFFIC FOR LAeq1h Volumes

Herald Sq. Mixed Use

VHB  
QVT

3 June 2011  
TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes

PROJECT/CONTRACT:

Herald Sq. Mixed Use

RUN:

2010

Roadway	Points											
Name	Name	No.	Segment Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
I-93 NB	point1	1	7230	60	1250	60	1250	60	0	0	0	0
	point2	2	7230	60	1250	60	1250	60	0	0	0	0
	point3	3	7230	60	1250	60	1250	60	0	0	0	0
	point4	4	7230	60	1250	60	1250	60	0	0	0	0
	point5	5	7230	60	1250	60	1250	60	0	0	0	0
	point6	6	7230	60	1250	60	1250	60	0	0	0	0
	point7	7										
I-93 SB	point8	8	7230	60	1250	60	1250	60	0	0	0	0
	point9	9	7230	60	1250	60	1250	60	0	0	0	0
	point10	10	7230	60	1250	60	1250	60	0	0	0	0
	point11	11	7230	60	1250	60	1250	60	0	0	0	0
	point12	12	7230	60	1250	60	1250	60	0	0	0	0
	point13	13										

# Traffic Noise Model Results

**RESULTS: SOUND LEVELS**

**Herald Sq. Mixed Use**

**VHB  
QVT**

**3 June 2011  
TNM 2.5  
Calculated with TNM 2.5**

**RESULTS: SOUND LEVELS**

**PROJECT/CONTRACT:** Herald Sq. Mixed Use

**RUN:** 2010

**BARRIER DESIGN:** INPUT HEIGHTS

**Average pavement type shall be used unless  
a State highway agency substantiates the use  
of a different type with approval of FHWA.**

**ATMOSPHERICS:** 68 deg F, 50% RH

**Receiver**

Name	No.	#DUs	Existing LAeq1h  dBA	No Barrier				With Barrier				
				LAeq1h Calculated dBA	Crit'n dBA	Increase over existing		Type Impact	Calculated LAeq1h dBA	Noise Reduction		Calculated minus Goal dBA
						Calculated dB	Crit'n dB			Calculated dB	Goal dB	
Property Line	1	1	0.0	71.2	66	71.2	10	Snd Lvl	71.2	0.0	8	-8.0
South Cove Manor Nursing Home	2	1	0.0	60.6	66	60.6	10	----	60.6	0.0	8	-8.0
406 Harrison Avenue	3	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	8	-8.0
275 Albany Street	4	1	0.0	76.2	66	76.2	10	Snd Lvl	76.2	0.0	8	-8.0
50 ft from I-93	6	1	0.0	79.6	66	79.6	10	Snd Lvl	79.6	0.0	8	-8.0
75 ft from I-93	7	1	0.0	78.8	66	78.8	10	Snd Lvl	78.8	0.0	8	-8.0
100 ft from I-93	8	1	0.0	78.1	66	78.1	10	Snd Lvl	78.1	0.0	8	-8.0
125 ft from I-93	9	1	0.0	77.4	66	77.4	10	Snd Lvl	77.4	0.0	8	-8.0
150 ft from I-93	10	1	0.0	76.7	66	76.7	10	Snd Lvl	76.7	0.0	8	-8.0
175 ft from I-93	11	1	0.0	76.0	66	76.0	10	Snd Lvl	76.0	0.0	8	-8.0
200 ft from I-93	12	1	0.0	75.6	66	75.6	10	Snd Lvl	75.6	0.0	8	-8.0
225 ft from I-93	13	1	0.0	75.2	66	75.2	10	Snd Lvl	75.2	0.0	8	-8.0
250 ft from I-93	14	1	0.0	74.7	66	74.7	10	Snd Lvl	74.7	0.0	8	-8.0
275 ft from I-93	15	1	0.0	74.4	66	74.4	10	Snd Lvl	74.4	0.0	8	-8.0
300 ft from I-93	17	1	0.0	74.0	66	74.0	10	Snd Lvl	74.0	0.0	8	-8.0
325 ft from I-93	18	1	0.0	73.6	66	73.6	10	Snd Lvl	73.6	0.0	8	-8.0
350 ft from I-93	19	1	0.0	73.5	66	73.5	10	Snd Lvl	73.5	0.0	8	-8.0
375 ft from I-93	20	1	0.0	73.1	66	73.1	10	Snd Lvl	73.1	0.0	8	-8.0
400 ft from I-93	21	1	0.0	72.7	66	72.7	10	Snd Lvl	72.7	0.0	8	-8.0
425 ft from I-93	22	1	0.0	72.4	66	72.4	10	Snd Lvl	72.4	0.0	8	-8.0
450 ft from I-93	23	1	0.0	72.2	66	72.2	10	Snd Lvl	72.2	0.0	8	-8.0
475 ft from I-93	24	1	0.0	71.8	66	71.8	10	Snd Lvl	71.8	0.0	8	-8.0
500 ft from I-93	25	1	0.0	71.6	66	71.6	10	Snd Lvl	71.6	0.0	8	-8.0
<b>Dwelling Units</b>		<b># DUs</b>		<b>Noise Reduction</b>								

# Appendix G

## Greenhouse Gas Assessment

### Supporting Documentation



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#### Greenhouse Gas

- Greenhouse Gas - Stationary
- eQUEST Results
- Wastewater Calculation
- Greenhouse Gas - Mobile
- Commuter Results

# Greenhouse Gas – Stationary

# eQUEST Results

**Baseline Condition**

**Conversion Factors**

	Electric (Mwh)	CO2 : Electric (lbs)	CO2: Electric (tons)	Gas (Mbtu)	CO2: Gas (lbs)	CO2: Gas (tons)	Total CO2 (tons)
<b>Building 1</b>							
Residential	798.16	660,876.48	330.44	0.00	0.00	0.00	330.44
<b>Building 2</b>							
Residential	962.00	796,536.00	398.27	0.00	0.00	0.00	398.27
Retail A (Grocery)	317.21	262,649.88	131.32	14.00	1,639.12	0.82	132.14
Retail A (Jr. Anchor)	213.90	177,109.20	88.55	9.20	1,076.86	0.54	89.09
Retail B	42.67	35,330.76	17.67	1.75	204.71	0.10	17.77
Retail C	45.69	37,831.32	18.92	1.89	221.15	0.11	19.03
<b>Building 3</b>							
Residential	609.51	504,674.28	252.34	0.00	0.00	0.00	252.34
Retail D	32.83	27,183.24	13.59	1.32	154.76	0.08	13.67
Retail E	50.25	41,607.00	20.80	2.13	248.82	0.12	20.93
Retail F	29.66	24,558.48	12.28	1.18	138.27	0.07	12.35
<b>Building 4</b>							
Residential	1,069.70	885,711.60	442.86	0.00	0.00	0.00	442.86
Retail G	38.93	32,234.04	16.12	1.60	187.90	0.09	16.21
Retail H	53.94	44,662.32	22.33	2.31	270.74	0.14	22.47
Retail J	51.96	43,022.88	21.51	2.22	259.66	0.13	21.64
Retail K	51.96	43,022.88	21.51	2.22	259.66	0.13	21.64
<b>Parking Garage</b>	127.23	105,346.44	52.67	0.00	0.00	0.00	52.67
<b>Total</b>	<b>4,495.60</b>	<b>3,722,356.80</b>	<b>1,861.18</b>	<b>39.82</b>	<b>4,661.65</b>	<b>2.33</b>	<b>1,863.51</b>

	Multiply	To	Multiply	To
Mwh	828	* lbs	0.005	tons

Mbtu 117.08 lbs 0.005 tons  
 Table 1-1: 2009 Calculated New England Annual System Emissions  
 \* 2009 ISO New England Electric Generator Air Emissions Report

**Build with Mitigation Condition**

	Electric (Mwh)	CO2 : Electric (lbs)	CO2: Electric (tons)	Gas (Mbtu)	CO2: Gas (lbs)	CO2: Gas (tons)	Total CO2 (tons)
<b>Building 1</b>							
Residential	737.83	610,923.24	305.46	0.00	0.00	0.00	305.46
<b>Building 2</b>							
Residential	891.74	738,360.72	369.18	0.00	0.00	0.00	369.18
Retail A (Grocery)	273.01	226,052.28	113.03	14.01	1,640.29	0.82	113.85
Retail A (Jr. Anchor)	184.53	152,790.84	76.40	9.20	1,077.11	0.54	76.93
Retail B	36.20	29,973.60	14.99	1.75	204.73	0.10	15.09
Retail C	38.75	32,085.00	16.04	1.89	221.18	0.11	16.15
<b>Building 3</b>							
Residential	563.55	466,619.40	233.31	0.00	0.00	0.00	233.31
Retail D	28.36	23,482.08	11.74	1.32	154.85	0.08	11.82
Retail E	43.25	35,811.00	17.91	2.13	248.82	0.12	18.03
Retail F	25.65	21,238.20	10.62	1.18	138.35	0.07	10.69
<b>Building 4</b>							
Residential	982.54	813,543.12	406.77	0.00	0.00	0.00	406.77
Retail G	33.52	27,754.56	13.88	1.61	188.01	0.09	13.97
Retail H	46.42	38,435.76	19.22	2.31	270.90	0.14	19.35
Retail J	44.72	37,028.16	18.51	2.22	259.81	0.13	18.64
Retail K	44.72	37,028.16	18.51	2.22	259.81	0.13	18.64
<b>Parking Garage</b>	95.42	79,007.76	39.50	0.00	0.00	0.00	39.50
<b>Total</b>	<b>4,070.21</b>	<b>3,370,133.88</b>	<b>1,685.07</b>	<b>39.83</b>	<b>4,663.86</b>	<b>2.33</b>	<b>1,687.40</b>

**Mitigation with Energy Star Condition**

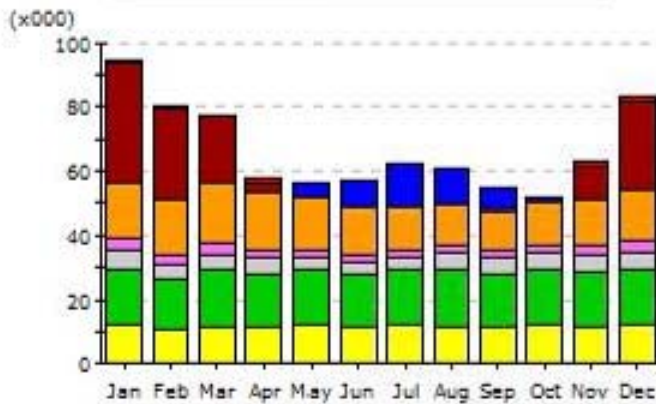
	Electric (Mwh)	CO2 : Electric (lbs)	CO2: Electric (tons)	Gas (Mbtu)	CO2: Gas (lbs)	CO2: Gas (tons)	Total CO2 (tons)
<b>Building 1</b>							
Residential	675.84	559,593.86	279.80	0.00	0.00	0.00	279.80
<b>Building 2</b>							
Residential	817.29	676,717.78	338.36	0.00	0.00	0.00	338.36
Retail A (Grocery)	266.78	220,890.53	110.45	14.01	1,640.29	0.82	111.27
Retail A (Jr. Anchor)	180.44	149,402.66	74.70	9.20	1,077.11	0.54	75.24
Retail B	35.44	29,342.66	14.67	1.75	204.73	0.10	14.77
Retail C	37.93	31,401.90	15.70	1.89	221.18	0.11	15.81
<b>Building 3</b>							
Residential	516.69	427,819.32	213.91	0.00	0.00	0.00	213.91
Retail D	27.78	23,005.15	11.50	1.32	154.85	0.08	11.58
Retail E	42.32	35,043.44	17.52	2.13	248.82	0.12	17.65
Retail F	25.13	20,810.95	10.41	1.18	138.35	0.07	10.47
<b>Building 4</b>							
Residential	892.93	739,343.56	369.67	0.00	0.00	0.00	369.67
Retail G	32.82	27,173.30	13.59	1.61	188.01	0.09	13.68
Retail H	45.41	37,598.65	18.80	2.31	270.90	0.14	18.93
Retail J	43.75	36,223.34	18.11	2.22	259.81	0.13	18.24
Retail K	43.75	36,223.34	18.11	2.22	259.81	0.13	18.24
<b>Parking Garage</b>	95.42	79,007.76	39.50	0.00	0.00	0.00	39.50
<b>Total</b>	<b>3,779.71</b>	<b>3,129,598.22</b>	<b>1,564.80</b>	<b>39.83</b>	<b>4,663.86</b>	<b>2.33</b>	<b>1,567.13</b>

Code Compliant-Build with Mitigation Reduction -176.11  
 -9.45%  
 Code Compliant- Mitigation with Energy Star Condition Reduction -296.38  
 -15.90%  
 Build with Mitigation- Mitigation with Energy Star Condition -120.27

<b>Total Greenhouse Gas Reduction from Baseline Condition (tons)</b>	
Build with Mitigation Reduction	-176.11
Energy Star Reduction	-120.27
<u>Wastewater Reduction</u>	<u>-3.90</u>
Total Reduction	-300.28
Baselind Condition Total Greenhouse Gas	1,863.51
<b>Percent Reduction</b>	<b>-16.11%</b>



**Electric Consumption (kWh)**

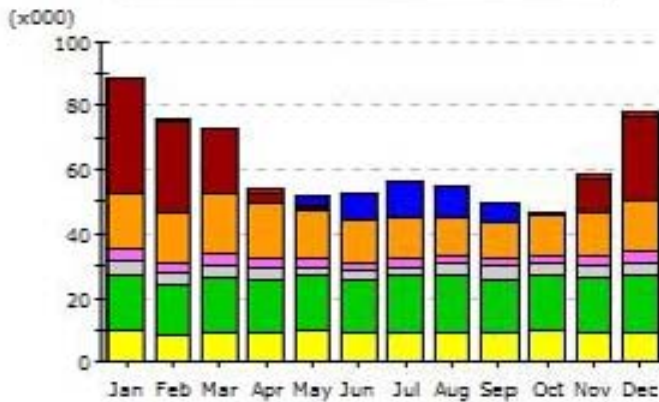


- Area Lighting
- Task Lighting
- Misc. Equipment
- Ventilation Fans
- Exterior Usage
- Pumps & Aux.
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.01	0.12	4.31	8.97	13.45	11.59	7.15	1.21	-	-	46.80
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	0.61	0.68	0.42	1.22	0.12	-	-	-	-	0.22	1.65	1.40	6.33
HP Supp.	38.17	29.32	21.16	3.23	0.12	-	-	-	-	0.05	10.65	27.79	130.50
Hot Water	16.70	16.03	18.08	17.08	15.70	13.95	12.95	12.11	11.65	12.69	13.56	15.52	176.04
Vent. Fans	3.97	3.40	3.55	2.55	2.38	2.33	2.50	2.45	2.28	2.35	2.94	3.51	34.21
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	5.74	4.54	5.03	4.86	3.72	3.60	3.72	5.50	5.33	5.50	5.56	5.74	58.86
Misc. Equip.	17.57	15.85	17.53	16.97	17.56	16.97	17.56	17.54	16.98	17.56	16.99	17.55	206.64
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	11.95	10.66	11.65	11.31	11.87	11.30	11.81	11.72	11.37	11.88	11.45	11.80	138.78
<b>Total</b>	<b>94.71</b>	<b>80.49</b>	<b>77.44</b>	<b>57.34</b>	<b>55.79</b>	<b>57.12</b>	<b>62.00</b>	<b>60.92</b>	<b>54.76</b>	<b>51.47</b>	<b>62.81</b>	<b>83.32</b>	<b>798.16</b>

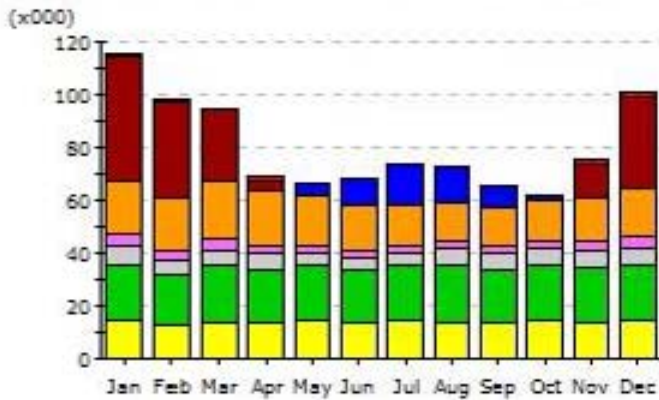
**Electric Consumption (kWh)**



Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.00	0.04	3.23	7.04	10.71	9.23	5.62	0.81	-	-	36.69
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	0.49	0.56	0.36	1.02	0.10	-	-	-	-	0.17	1.32	1.13	5.13
HP Supp.	36.19	27.96	20.25	3.14	0.12	-	-	-	-	0.05	10.03	26.29	124.03
Hot Water	16.70	16.03	18.08	17.08	15.70	13.95	12.95	12.11	11.65	12.70	13.56	15.52	176.05
Vent. Fans	3.97	3.42	3.57	2.55	2.37	2.30	2.47	2.41	2.26	2.35	2.94	3.52	34.12
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	4.31	3.40	3.77	3.65	2.79	2.70	2.79	4.13	3.99	4.13	4.17	4.31	44.14
Misc. Equip.	17.57	15.85	17.53	16.97	17.56	16.97	17.56	17.54	16.98	17.56	16.99	17.55	206.64
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	9.56	8.53	9.32	9.05	9.50	9.04	9.45	9.38	9.10	9.50	9.16	9.44	111.03
<b>Total</b>	<b>88.78</b>	<b>75.75</b>	<b>72.89</b>	<b>53.50</b>	<b>51.37</b>	<b>52.00</b>	<b>55.93</b>	<b>54.80</b>	<b>49.62</b>	<b>47.26</b>	<b>58.18</b>	<b>77.76</b>	<b>737.82</b>

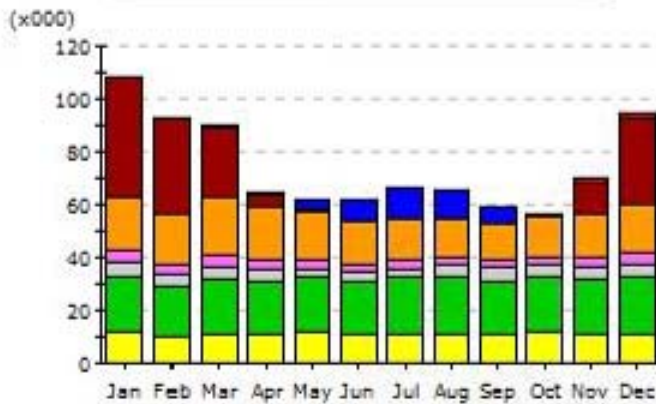
### Electric Consumption (kWh)



Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.00	0.10	4.78	10.14	15.40	13.26	8.19	1.49	-	-	53.35
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	0.73	0.89	0.58	1.62	0.17	-	-	-	-	0.22	2.07	1.81	8.07
HP Supp.	47.50	36.99	27.20	4.24	0.17	-	-	-	-	0.05	12.90	34.07	163.13
Hot Water	20.03	19.24	21.70	20.50	18.85	16.75	15.56	14.55	13.99	15.22	16.27	18.62	211.27
Vent. Fans	4.72	4.06	4.25	3.05	2.84	2.74	2.94	2.88	2.72	2.82	3.51	4.19	40.71
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	6.90	5.45	6.03	5.84	4.47	4.33	4.47	6.61	6.40	6.61	6.67	6.90	70.67
Misc. Equip.	21.10	19.04	21.05	20.38	21.09	20.38	21.08	21.06	20.39	21.09	20.41	21.08	248.16
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	14.35	12.80	13.99	13.58	14.25	13.57	14.18	14.08	13.66	14.26	13.75	14.17	166.64
<b>Total</b>	<b>115.33</b>	<b>98.46</b>	<b>94.81</b>	<b>69.32</b>	<b>66.62</b>	<b>67.91</b>	<b>73.63</b>	<b>72.43</b>	<b>65.33</b>	<b>61.75</b>	<b>75.58</b>	<b>100.84</b>	<b>962.00</b>

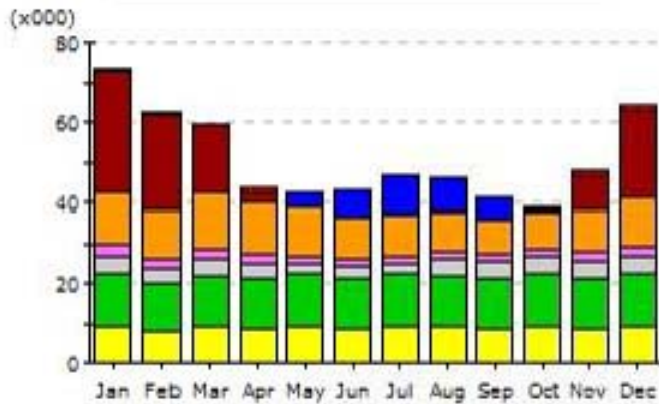
### Electric Consumption (kWh)



Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.00	0.04	3.62	7.96	12.27	10.53	6.43	0.99	-	-	41.84
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	0.58	0.74	0.50	1.40	0.15	-	-	-	-	0.17	1.70	1.48	6.71
HP Supp.	45.48	35.60	26.33	4.20	0.17	-	-	-	-	0.04	12.35	32.57	156.74
Hot Water	20.03	19.24	21.70	20.51	18.85	16.75	15.56	14.55	13.99	15.23	16.27	18.62	211.30
Vent. Fans	4.74	4.08	4.27	3.06	2.83	2.72	2.90	2.85	2.70	2.81	3.52	4.20	40.68
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	5.17	4.09	4.53	4.38	3.35	3.24	3.35	4.96	4.80	4.96	5.01	5.17	53.00
Misc. Equip.	21.10	19.04	21.05	20.38	21.09	20.38	21.08	21.06	20.39	21.09	20.41	21.08	248.16
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	11.48	10.24	11.19	10.86	11.40	10.86	11.35	11.26	10.93	11.41	11.00	11.34	133.31
<b>Total</b>	<b>108.59</b>	<b>93.02</b>	<b>89.57</b>	<b>64.82</b>	<b>61.46</b>	<b>61.91</b>	<b>66.51</b>	<b>65.21</b>	<b>59.24</b>	<b>56.70</b>	<b>70.25</b>	<b>94.46</b>	<b>891.75</b>

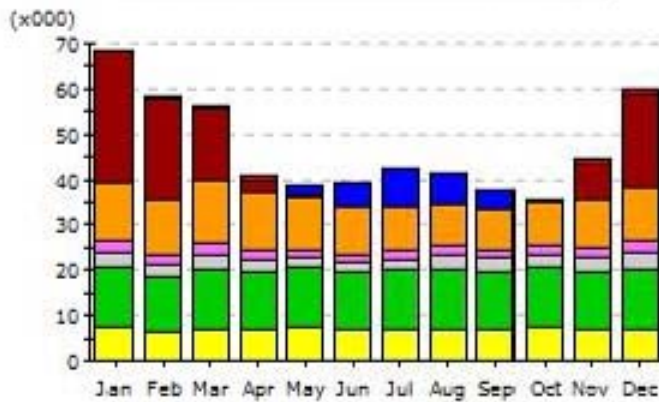
### Electric Consumption (kWh)



Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.01	0.09	3.20	6.73	10.17	8.74	5.34	0.90	-	-	35.18
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	0.49	0.55	0.35	1.03	0.11	-	-	-	-	0.20	1.37	1.14	5.24
HP Supp.	30.46	23.42	17.06	2.66	0.10	-	-	-	-	0.05	8.59	22.17	104.51
Hot Water	12.62	12.12	13.67	12.91	11.87	10.54	9.79	9.15	8.81	9.60	10.25	11.73	133.07
Vent. Fans	3.00	2.58	2.69	1.93	1.80	1.76	1.90	1.85	1.73	1.78	2.23	2.66	25.91
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	4.34	3.43	3.80	3.68	2.81	2.72	2.81	4.16	4.03	4.16	4.20	4.34	44.49
Misc. Equip.	13.28	11.98	13.25	12.83	13.27	12.83	13.27	13.26	12.83	13.28	12.84	13.27	156.20
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	9.03	8.06	8.81	8.55	8.97	8.54	8.93	8.86	8.60	8.98	8.66	8.92	104.91
<b>Total</b>	<b>73.24</b>	<b>62.15</b>	<b>59.64</b>	<b>43.67</b>	<b>42.14</b>	<b>43.13</b>	<b>46.87</b>	<b>46.03</b>	<b>41.33</b>	<b>38.94</b>	<b>48.15</b>	<b>64.24</b>	<b>609.50</b>

**Electric Consumption (kWh)**

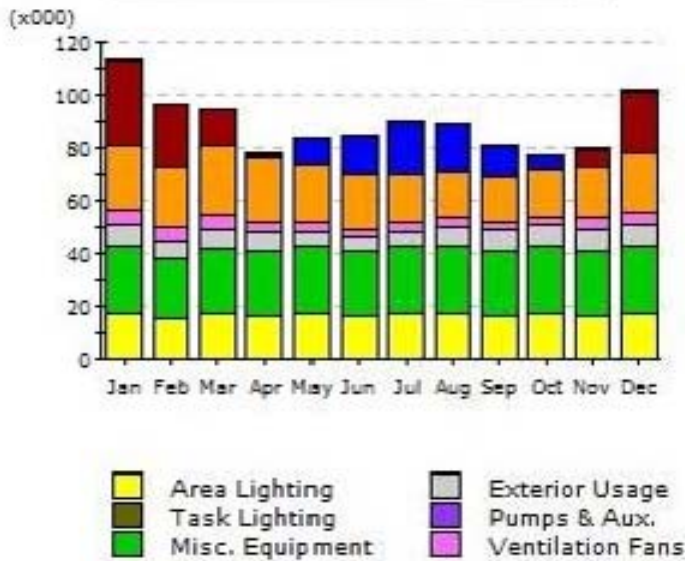


- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.00	0.04	2.40	5.28	8.10	6.95	4.20	0.60	-	-	27.57
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	0.39	0.45	0.30	0.86	0.09	-	-	-	-	0.15	1.10	0.92	4.26
HP Supp.	28.87	22.33	16.32	2.58	0.10	-	-	-	-	0.04	8.10	20.97	99.30
Hot Water	12.62	12.12	13.67	12.91	11.87	10.54	9.79	9.16	8.81	9.60	10.25	11.73	133.08
Vent. Fans	3.01	2.59	2.70	1.93	1.79	1.74	1.87	1.82	1.71	1.77	2.23	2.67	25.84
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	3.26	2.57	2.85	2.76	2.11	2.04	2.11	3.12	3.02	3.12	3.15	3.26	33.37
Misc. Equip.	13.28	11.98	13.25	12.83	13.27	12.83	13.27	13.26	12.83	13.28	12.84	13.27	156.20
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	7.23	6.45	7.05	6.84	7.18	6.83	7.14	7.09	6.88	7.18	6.93	7.14	83.93
<b>Total</b>	<b>68.65</b>	<b>58.49</b>	<b>56.14</b>	<b>40.75</b>	<b>38.81</b>	<b>39.27</b>	<b>42.28</b>	<b>41.40</b>	<b>37.45</b>	<b>35.75</b>	<b>44.59</b>	<b>59.95</b>	<b>563.53</b>

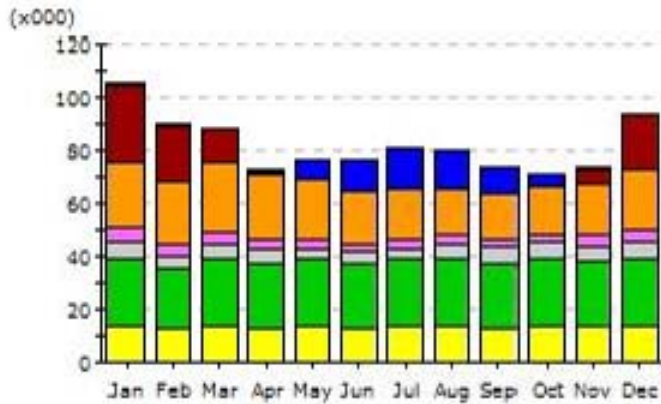
**Electric Consumption (kWh)**



Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	0.0	-	0.1	1.2	9.3	14.6	20.0	17.8	12.4	5.1	0.1	0.0	80.7
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	0.3	0.3	0.0	0.1	0.0	-	-	-	-	0.0	0.4	0.7	1.8
HP Supp.	32.5	23.2	14.2	0.9	0.0	-	-	-	-	0.0	6.3	22.9	100.1
Hot Water	24.1	23.1	26.1	24.6	22.6	20.1	18.7	17.5	16.8	18.3	19.5	22.4	253.9
Vent. Fans	5.6	4.8	5.0	3.7	3.5	3.4	3.6	3.5	3.3	3.4	4.2	4.9	48.8
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	8.3	6.6	7.3	7.0	5.4	5.2	5.4	8.0	7.7	8.0	8.0	8.3	85.1
Misc. Equip.	25.4	22.9	25.3	24.5	25.4	24.5	25.4	25.4	24.5	25.4	24.6	25.4	298.7
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	17.3	15.4	16.8	16.3	17.2	16.3	17.1	16.9	16.4	17.2	16.6	17.1	200.6
<b>Total</b>	<b>113.4</b>	<b>96.4</b>	<b>94.8</b>	<b>78.3</b>	<b>83.4</b>	<b>84.2</b>	<b>90.1</b>	<b>89.1</b>	<b>81.2</b>	<b>77.3</b>	<b>79.8</b>	<b>101.7</b>	<b>1,069.7</b>

### Electric Consumption (kWh)



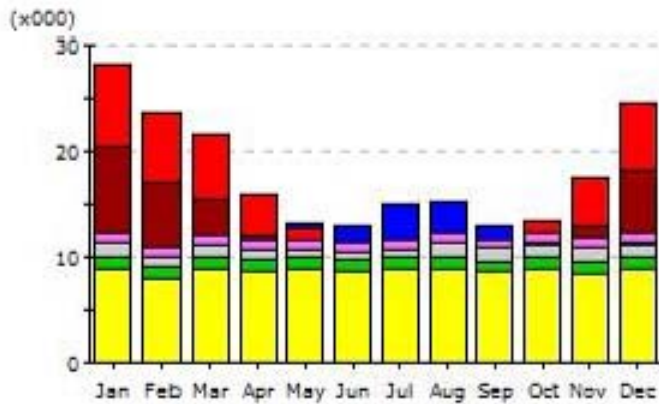
- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

Electric Consumption (kWh x000)

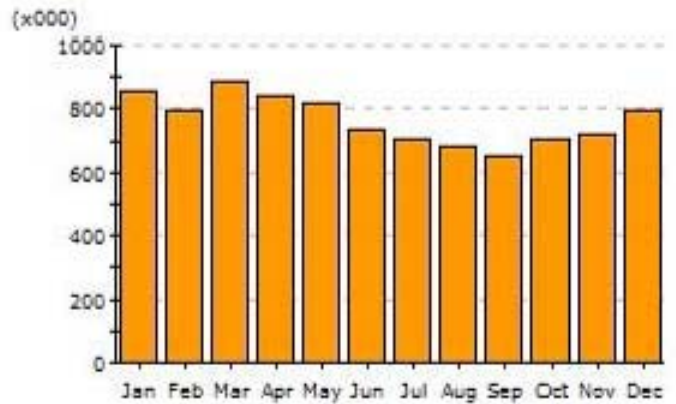
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.02	0.82	7.40	11.58	15.93	14.24	9.96	4.06	0.09	-	64.11
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	0.16	0.25	0.02	0.05	0.00	-	-	-	-	-	0.27	0.47	1.23
HP Supp.	29.73	21.32	13.11	0.81	0.00	-	-	-	-	-	5.55	20.89	91.41
Hot Water	24.09	23.14	26.08	24.60	22.63	20.15	18.72	17.50	16.82	18.25	19.54	22.39	253.92
Vent. Fans	5.64	4.82	5.03	3.66	3.44	3.35	3.56	3.50	3.29	3.39	4.19	4.99	48.86
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	6.23	4.92	5.45	5.27	4.04	3.91	4.04	5.97	5.77	5.97	6.03	6.23	63.81
Misc. Equip.	25.40	22.92	25.34	24.53	25.38	24.53	25.38	25.35	24.54	25.39	24.56	25.37	298.71
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	13.82	12.33	13.47	13.08	13.73	13.07	13.66	13.56	13.15	13.73	13.25	13.65	160.49
<b>Total</b>	<b>105.07</b>	<b>89.70</b>	<b>88.53</b>	<b>72.82</b>	<b>76.62</b>	<b>76.58</b>	<b>81.28</b>	<b>80.12</b>	<b>73.55</b>	<b>70.80</b>	<b>73.48</b>	<b>93.98</b>	<b>982.53</b>



**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

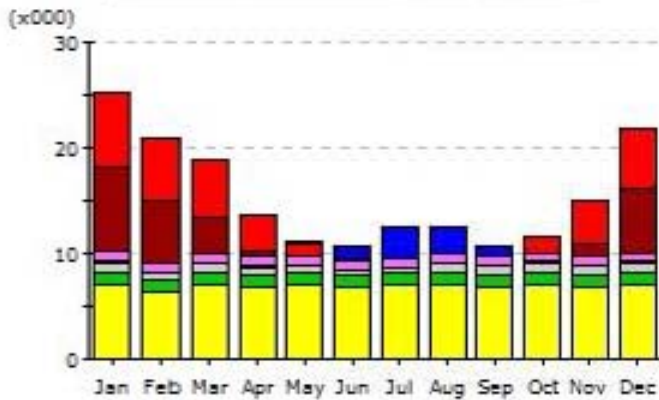
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	0.01	0.43	1.74	3.47	2.98	1.35	0.01	-	-	9.99
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	7.63	6.56	6.06	3.81	0.94	0.03	-	-	-	1.24	4.53	6.16	36.97
HP Supp.	8.27	6.11	3.48	0.44	-	-	-	-	-	-	1.13	6.10	25.54
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.91	0.82	0.90	0.87	0.91	0.87	0.90	0.91	0.87	0.91	0.87	0.90	10.63
Pumps & Aux.	0.09	0.09	0.09	0.08	0.02	-	-	-	0.00	0.05	0.08	0.09	0.61
Ext. Usage	1.26	0.97	1.07	1.03	0.74	0.72	0.74	1.20	1.16	1.20	1.22	1.26	12.56
Misc. Equip.	1.16	1.05	1.16	1.12	1.16	1.12	1.15	1.17	1.12	1.16	1.12	1.15	13.64
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	8.84	7.97	8.82	8.55	8.87	8.55	8.80	8.89	8.52	8.87	8.50	8.78	103.96
<b>Total</b>	<b>28.16</b>	<b>23.55</b>	<b>21.59</b>	<b>15.92</b>	<b>13.07</b>	<b>13.02</b>	<b>15.06</b>	<b>15.15</b>	<b>13.03</b>	<b>13.45</b>	<b>17.45</b>	<b>24.44</b>	<b>213.90</b>

Gas Consumption (Btu x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	857.7	797.4	882.8	841.7	818.9	731.2	706.2	681.8	651.6	707.3	722.2	798.9	9,197.6
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>857.7</b>	<b>797.4</b>	<b>882.8</b>	<b>841.7</b>	<b>818.9</b>	<b>731.2</b>	<b>706.2</b>	<b>681.8</b>	<b>651.6</b>	<b>707.3</b>	<b>722.2</b>	<b>798.9</b>	<b>9,197.6</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

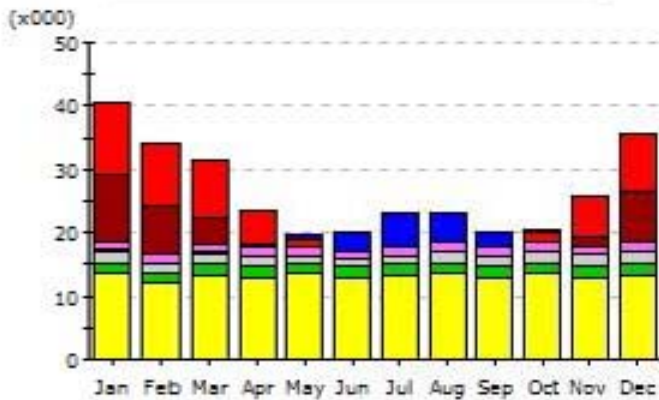
**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	0.00	0.28	1.30	2.82	2.40	0.96	0.00	-	-	7.76
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	6.96	5.98	5.56	3.57	1.08	0.07	-	-	0.01	1.41	4.21	5.65	34.50
HP Supp.	7.99	5.90	3.37	0.44	-	-	-	-	-	-	1.11	6.02	24.83
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.91	0.81	0.90	0.87	0.91	0.87	0.90	0.91	0.87	0.91	0.87	0.90	10.60
Pumps & Aux.	0.09	0.09	0.09	0.08	0.02	-	-	-	0.00	0.05	0.08	0.09	0.61
Ext. Usage	0.94	0.72	0.80	0.78	0.55	0.54	0.55	0.90	0.87	0.90	0.91	0.94	9.42
Misc. Equip.	1.16	1.05	1.16	1.12	1.16	1.12	1.15	1.17	1.12	1.16	1.12	1.15	13.64
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	7.08	6.38	7.06	6.84	7.09	6.84	7.04	7.11	6.82	7.09	6.80	7.02	83.17
<b>Total</b>	<b>25.13</b>	<b>20.93</b>	<b>18.94</b>	<b>13.70</b>	<b>11.10</b>	<b>10.74</b>	<b>12.47</b>	<b>12.49</b>	<b>10.65</b>	<b>11.53</b>	<b>15.10</b>	<b>21.77</b>	<b>184.53</b>

**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	857.8	797.5	882.9	841.8	819.2	731.5	706.4	682.0	651.8	707.6	722.3	799.0	9,199.8
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>857.8</b>	<b>797.5</b>	<b>882.9</b>	<b>841.8</b>	<b>819.2</b>	<b>731.5</b>	<b>706.4</b>	<b>682.0</b>	<b>651.8</b>	<b>707.6</b>	<b>722.3</b>	<b>799.0</b>	<b>9,199.8</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Exterior Usage
- Water Heating
- Refrigeration
- Task Lighting
- Pumps & Aux.
- Ht Pump Supp.
- Heat Rejection
- Misc. Equipment
- Ventilation Fans
- Space Heating
- Space Cooling

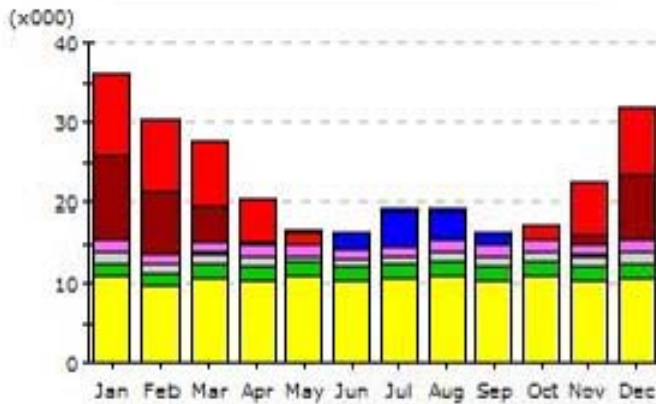
**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	0.02	0.71	2.75	5.31	4.57	2.14	0.05	-	-	15.54
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	11.39	9.73	8.91	5.44	1.24	0.02	-	-	0.00	1.70	6.57	9.08	54.08
HP Supp.	10.67	7.81	4.20	0.49	-	-	-	-	-	-	1.34	8.10	32.62
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	1.38	1.24	1.36	1.32	1.38	1.32	1.36	1.38	1.32	1.38	1.32	1.36	16.13
Pumps & Aux.	0.09	0.09	0.09	0.08	0.02	-	-	-	0.00	0.05	0.08	0.09	0.61
Ext. Usage	1.92	1.47	1.63	1.57	1.13	1.09	1.13	1.83	1.77	1.83	1.85	1.92	19.13
Misc. Equip.	1.77	1.59	1.76	1.71	1.77	1.71	1.76	1.78	1.70	1.77	1.70	1.75	20.78
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	13.47	12.14	13.44	13.02	13.51	13.02	13.40	13.54	12.98	13.51	12.94	13.36	158.32
<b>Total</b>	<b>40.68</b>	<b>34.07</b>	<b>31.40</b>	<b>23.66</b>	<b>19.76</b>	<b>19.91</b>	<b>22.96</b>	<b>23.09</b>	<b>19.92</b>	<b>20.28</b>	<b>25.81</b>	<b>35.67</b>	<b>317.21</b>

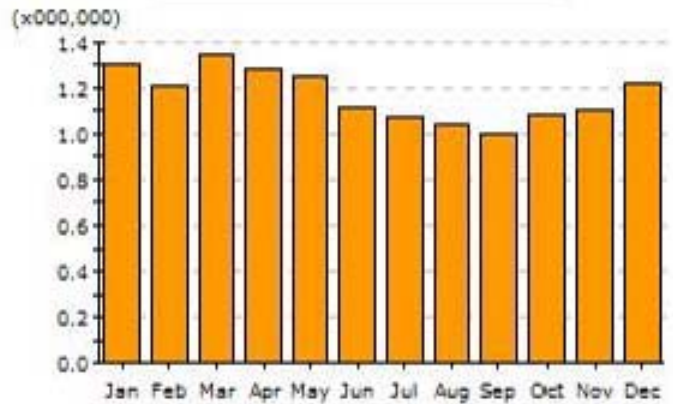
**Gas Consumption (Btu x000,000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	1.31	1.21	1.34	1.28	1.25	1.11	1.08	1.04	0.99	1.08	1.10	1.22	14.00
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>1.31</b>	<b>1.21</b>	<b>1.34</b>	<b>1.28</b>	<b>1.25</b>	<b>1.11</b>	<b>1.08</b>	<b>1.04</b>	<b>0.99</b>	<b>1.08</b>	<b>1.10</b>	<b>1.22</b>	<b>14.00</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Ventilation Fans
- Pumps & Aux.
- Exterior Usage
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

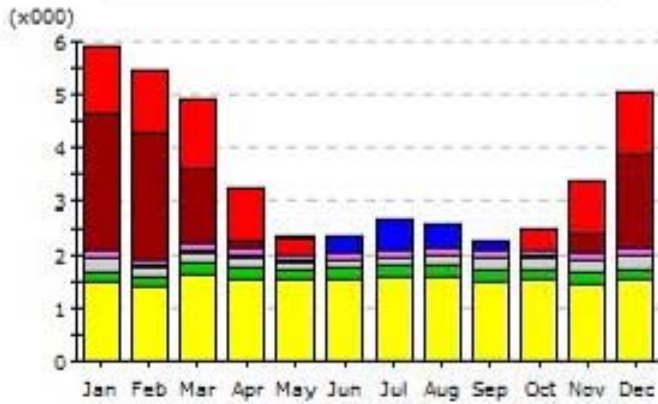
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	0.01	0.47	2.08	4.33	3.69	1.54	0.00	-	-	12.12
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	10.41	8.89	8.19	5.13	1.47	0.08	-	-	0.00	1.99	6.13	8.35	50.63
HP Supp.	10.30	7.55	4.07	0.49	-	-	-	-	-	-	1.32	8.00	31.73
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	1.38	1.24	1.36	1.32	1.38	1.32	1.36	1.38	1.32	1.38	1.32	1.36	16.13
Pumps & Aux.	0.09	0.09	0.09	0.08	0.02	-	-	-	0.00	0.05	0.08	0.09	0.61
Ext. Usage	1.44	1.10	1.22	1.18	0.84	0.82	0.84	1.37	1.33	1.37	1.39	1.44	14.35
Misc. Equip.	1.77	1.59	1.76	1.71	1.77	1.71	1.76	1.78	1.70	1.77	1.70	1.75	20.78
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	10.78	9.71	10.75	10.41	10.80	10.41	10.72	10.83	10.38	10.80	10.36	10.69	126.66
<b>Total</b>	<b>36.16</b>	<b>30.17</b>	<b>27.45</b>	<b>20.34</b>	<b>16.76</b>	<b>16.42</b>	<b>19.02</b>	<b>19.05</b>	<b>16.29</b>	<b>17.36</b>	<b>22.30</b>	<b>31.68</b>	<b>273.01</b>

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	1.31	1.21	1.34	1.28	1.25	1.11	1.08	1.04	0.99	1.08	1.10	1.22	14.01
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>1.31</b>	<b>1.21</b>	<b>1.34</b>	<b>1.28</b>	<b>1.25</b>	<b>1.11</b>	<b>1.08</b>	<b>1.04</b>	<b>0.99</b>	<b>1.08</b>	<b>1.10</b>	<b>1.22</b>	<b>14.01</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

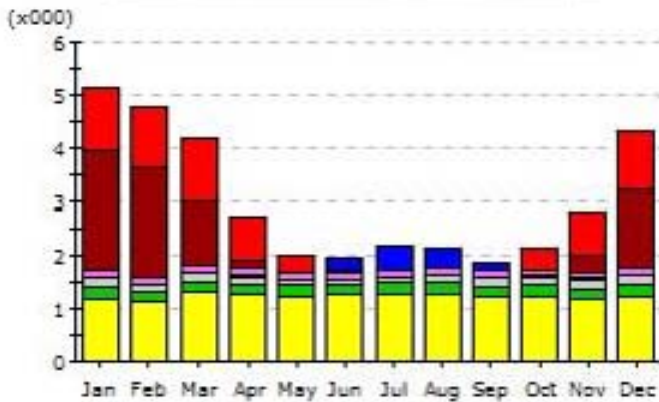
**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.03	0.30	0.59	0.46	0.17	-	-	-	1.55
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.28	1.20	1.31	0.94	0.29	0.02	-	-	0.01	0.38	0.95	1.19	7.57
HP Supp.	2.56	2.35	1.40	0.16	-	-	-	-	-	-	0.36	1.71	8.54
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.12	0.12	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.12	0.13	1.57
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.24	0.18	0.20	0.19	0.14	0.13	0.14	0.23	0.22	0.23	0.23	0.24	2.36
Misc. Equip.	0.21	0.19	0.22	0.22	0.21	0.22	0.22	0.22	0.21	0.21	0.20	0.21	2.54
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.49	1.40	1.62	1.56	1.53	1.56	1.58	1.58	1.52	1.53	1.48	1.53	18.40
<b>Total</b>	<b>5.92</b>	<b>5.46</b>	<b>4.92</b>	<b>3.22</b>	<b>2.35</b>	<b>2.37</b>	<b>2.66</b>	<b>2.61</b>	<b>2.26</b>	<b>2.49</b>	<b>3.37</b>	<b>5.04</b>	<b>42.67</b>

**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	156.5	151.4	174.2	165.0	152.1	142.9	135.3	129.3	124.5	131.5	135.2	150.7	1,748.5
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>156.5</b>	<b>151.4</b>	<b>174.2</b>	<b>165.0</b>	<b>152.1</b>	<b>142.9</b>	<b>135.3</b>	<b>129.3</b>	<b>124.5</b>	<b>131.5</b>	<b>135.2</b>	<b>150.7</b>	<b>1,748.5</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

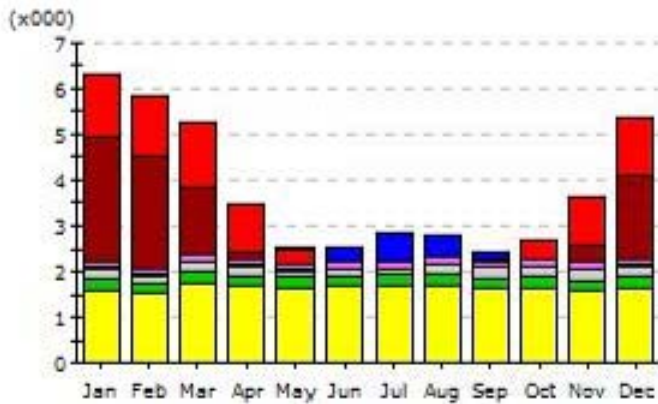
**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.02	0.21	0.46	0.35	0.11	-	-	-	1.16
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.19	1.11	1.20	0.85	0.30	0.02	-	-	0.02	0.37	0.86	1.10	7.01
HP Supp.	2.21	2.05	1.17	0.12	-	-	-	-	-	-	0.28	1.46	7.29
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.12	0.12	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.12	0.13	1.57
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.18	0.14	0.15	0.15	0.10	0.10	0.10	0.17	0.16	0.17	0.17	0.18	1.77
Misc. Equip.	0.21	0.19	0.22	0.22	0.21	0.22	0.22	0.22	0.21	0.21	0.20	0.21	2.54
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.19	1.12	1.30	1.25	1.23	1.25	1.26	1.26	1.22	1.23	1.18	1.23	14.72
<b>Total</b>	<b>5.12</b>	<b>4.75</b>	<b>4.20</b>	<b>2.74</b>	<b>1.99</b>	<b>1.94</b>	<b>2.18</b>	<b>2.14</b>	<b>1.85</b>	<b>2.11</b>	<b>2.83</b>	<b>4.33</b>	<b>36.20</b>

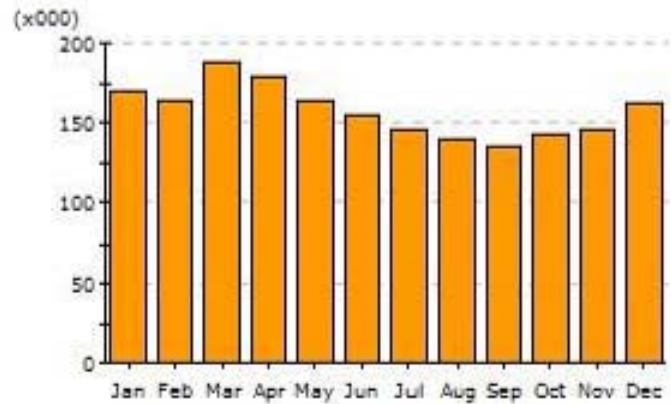
**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	156.5	151.4	174.2	165.0	152.1	142.9	135.4	129.3	124.5	131.5	135.2	150.7	1,748.6
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>156.5</b>	<b>151.4</b>	<b>174.2</b>	<b>165.0</b>	<b>152.1</b>	<b>142.9</b>	<b>135.4</b>	<b>129.3</b>	<b>124.5</b>	<b>131.5</b>	<b>135.2</b>	<b>150.7</b>	<b>1,748.6</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

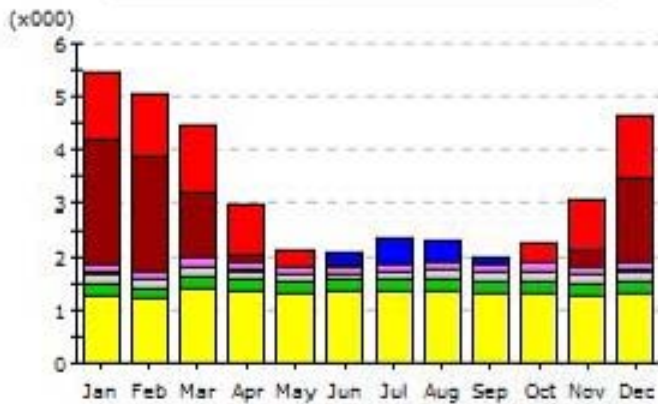
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.04	0.33	0.64	0.50	0.18	-	-	-	1.69
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.37	1.29	1.40	1.00	0.30	0.02	-	-	0.01	0.40	1.02	1.28	8.10
HP Supp.	2.68	2.46	1.45	0.16	-	-	-	-	-	-	0.37	1.78	8.89
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.13	0.13	0.15	0.15	0.14	0.15	0.15	0.15	0.14	0.14	0.13	0.14	1.69
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.26	0.20	0.22	0.21	0.15	0.15	0.15	0.24	0.24	0.24	0.25	0.26	2.55
Misc. Equip.	0.22	0.21	0.24	0.23	0.23	0.23	0.24	0.24	0.23	0.23	0.22	0.23	2.75
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.61	1.52	1.75	1.69	1.66	1.69	1.70	1.71	1.64	1.66	1.60	1.66	19.88
<b>Total</b>	<b>6.31</b>	<b>5.82</b>	<b>5.23</b>	<b>3.45</b>	<b>2.53</b>	<b>2.56</b>	<b>2.88</b>	<b>2.83</b>	<b>2.44</b>	<b>2.68</b>	<b>3.60</b>	<b>5.37</b>	<b>45.69</b>

Gas Consumption (Btu x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	169.1	163.5	188.2	178.3	164.3	154.4	146.2	139.6	134.5	142.1	146.0	162.8	1,888.9
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>169.1</b>	<b>163.5</b>	<b>188.2</b>	<b>178.3</b>	<b>164.3</b>	<b>154.4</b>	<b>146.2</b>	<b>139.6</b>	<b>134.5</b>	<b>142.1</b>	<b>146.0</b>	<b>162.8</b>	<b>1,888.9</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

Electric Consumption (kWh x000)

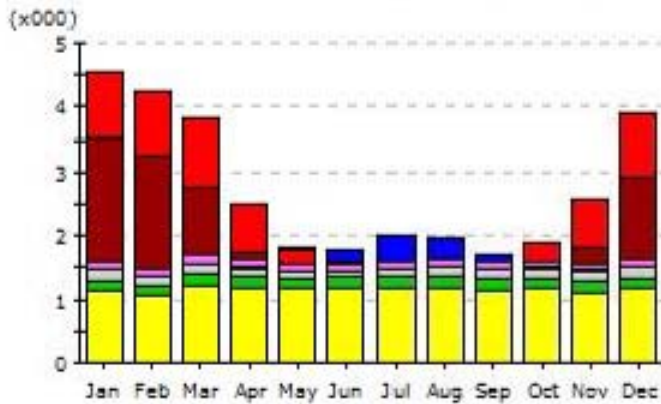
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.02	0.23	0.51	0.38	0.12	-	-	-	1.27
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.28	1.20	1.29	0.90	0.32	0.02	-	-	0.02	0.39	0.91	1.18	7.50
HP Supp.	2.31	2.14	1.20	0.12	-	-	-	-	-	-	0.28	1.53	7.59
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.13	0.13	0.15	0.15	0.14	0.15	0.15	0.15	0.14	0.14	0.13	0.14	1.69
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.19	0.15	0.16	0.16	0.11	0.11	0.11	0.18	0.18	0.18	0.19	0.19	1.91
Misc. Equip.	0.22	0.21	0.24	0.23	0.23	0.23	0.24	0.24	0.23	0.23	0.22	0.23	2.75
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.29	1.21	1.40	1.35	1.33	1.35	1.36	1.36	1.31	1.33	1.28	1.33	15.90
<b>Total</b>	<b>5.45</b>	<b>5.06</b>	<b>4.47</b>	<b>2.93</b>	<b>2.15</b>	<b>2.10</b>	<b>2.36</b>	<b>2.31</b>	<b>2.00</b>	<b>2.28</b>	<b>3.03</b>	<b>4.61</b>	<b>38.76</b>

Gas Consumption (Btu x000)

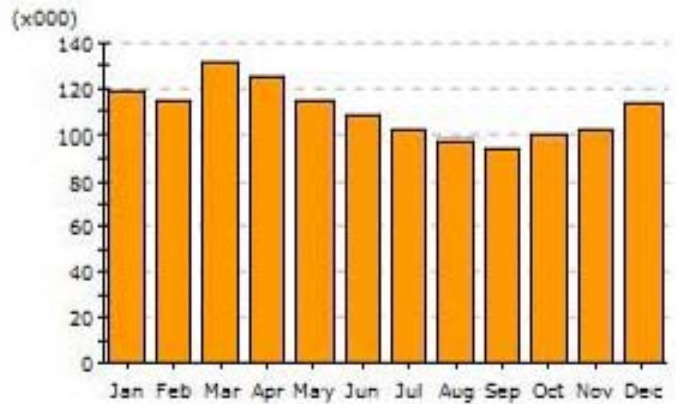
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	169.0	163.5	188.1	178.3	164.3	154.4	146.3	139.7	134.5	142.1	146.0	162.8	1,889.1
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>169.0</b>	<b>163.5</b>	<b>188.1</b>	<b>178.3</b>	<b>164.3</b>	<b>154.4</b>	<b>146.3</b>	<b>139.7</b>	<b>134.5</b>	<b>142.1</b>	<b>146.0</b>	<b>162.8</b>	<b>1,889.1</b>



**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Refrigeration
- Heat Rejection
- Space Heating
- Space Cooling

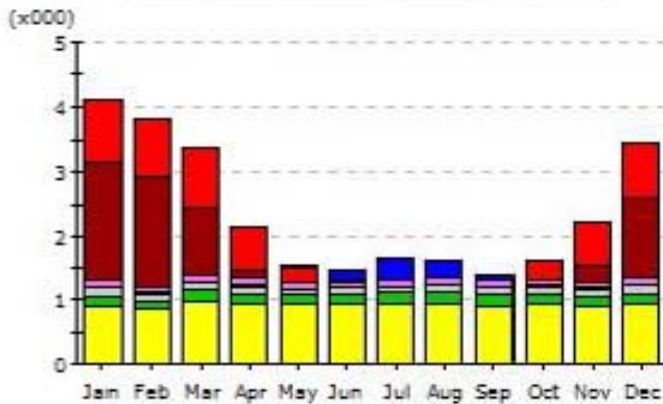
**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.02	0.21	0.44	0.34	0.12	-	-	-	1.14
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.04	0.97	1.06	0.76	0.25	0.02	-	-	0.01	0.30	0.76	0.96	6.14
HP Supp.	1.94	1.79	1.08	0.12	-	-	-	-	-	-	0.26	1.29	6.48
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.10	0.10	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.11	1.32
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.18	0.14	0.15	0.15	0.10	0.10	0.10	0.17	0.17	0.17	0.17	0.18	1.78
Misc. Equip.	0.16	0.15	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.16	1.92
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.13	1.06	1.23	1.18	1.16	1.18	1.19	1.19	1.15	1.16	1.12	1.16	13.91
<b>Total</b>	<b>4.56</b>	<b>4.23</b>	<b>3.82</b>	<b>2.51</b>	<b>1.81</b>	<b>1.79</b>	<b>2.02</b>	<b>1.98</b>	<b>1.72</b>	<b>1.91</b>	<b>2.59</b>	<b>3.88</b>	<b>32.83</b>

**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	118.3	114.4	131.7	124.8	115.0	108.0	102.3	97.7	94.1	99.4	102.2	113.9	1,321.8
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>118.3</b>	<b>114.4</b>	<b>131.7</b>	<b>124.8</b>	<b>115.0</b>	<b>108.0</b>	<b>102.3</b>	<b>97.7</b>	<b>94.1</b>	<b>99.4</b>	<b>102.2</b>	<b>113.9</b>	<b>1,321.8</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Refrigeration
- Ht Pump Supp.
- Heat Rejection
- Space Heating
- Space Cooling

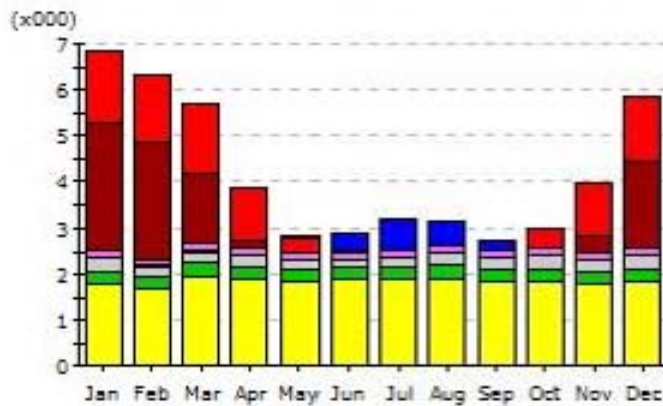
**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.01	0.16	0.35	0.27	0.08	-	-	-	0.88
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	0.91	0.86	0.93	0.68	0.24	0.03	-	-	0.02	0.30	0.68	0.85	5.49
HP Supp.	1.86	1.73	1.04	0.12	-	-	-	-	-	-	0.26	1.25	6.27
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.10	0.09	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	1.20
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.13	0.10	0.11	0.11	0.08	0.08	0.08	0.13	0.12	0.13	0.13	0.13	1.34
Misc. Equip.	0.16	0.15	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.16	1.92
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	0.90	0.85	0.98	0.95	0.93	0.95	0.95	0.95	0.92	0.93	0.89	0.93	11.12
<b>Total</b>	<b>4.08</b>	<b>3.80</b>	<b>3.37</b>	<b>2.14</b>	<b>1.53</b>	<b>1.48</b>	<b>1.65</b>	<b>1.62</b>	<b>1.41</b>	<b>1.62</b>	<b>2.23</b>	<b>3.45</b>	<b>28.38</b>

**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	118.4	114.5	131.7	124.8	115.0	108.1	102.3	97.7	94.1	99.5	102.3	114.0	1,322.6
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>118.4</b>	<b>114.5</b>	<b>131.7</b>	<b>124.8</b>	<b>115.0</b>	<b>108.1</b>	<b>102.3</b>	<b>97.7</b>	<b>94.1</b>	<b>99.5</b>	<b>102.3</b>	<b>114.0</b>	<b>1,322.6</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

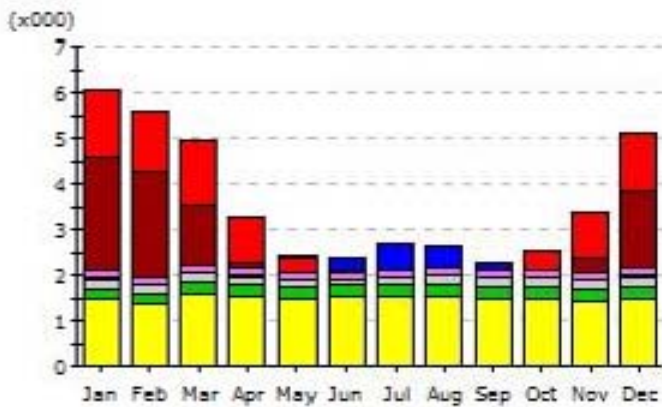
**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.04	0.37	0.72	0.56	0.22	-	-	-	1.90
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.54	1.44	1.55	1.09	0.33	0.02	-	-	0.01	0.41	1.10	1.42	8.92
HP Supp.	2.76	2.52	1.45	0.15	-	-	-	-	-	-	0.35	1.82	9.06
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.15	0.15	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.16	1.90
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.29	0.22	0.24	0.24	0.17	0.16	0.17	0.27	0.27	0.27	0.28	0.29	2.87
Misc. Equip.	0.25	0.24	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.25	0.26	3.09
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.81	1.71	1.97	1.90	1.87	1.90	1.92	1.92	1.85	1.87	1.80	1.87	22.37
<b>Total</b>	<b>6.82</b>	<b>6.29</b>	<b>5.69</b>	<b>3.82</b>	<b>2.83</b>	<b>2.88</b>	<b>3.23</b>	<b>3.18</b>	<b>2.76</b>	<b>2.98</b>	<b>3.95</b>	<b>5.83</b>	<b>50.26</b>

**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	190.1	183.9	211.7	200.6	184.8	173.7	164.5	157.2	151.3	159.9	164.3	183.1	2,125.2
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>190.1</b>	<b>183.9</b>	<b>211.7</b>	<b>200.6</b>	<b>184.8</b>	<b>173.7</b>	<b>164.5</b>	<b>157.2</b>	<b>151.3</b>	<b>159.9</b>	<b>164.3</b>	<b>183.1</b>	<b>2,125.2</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

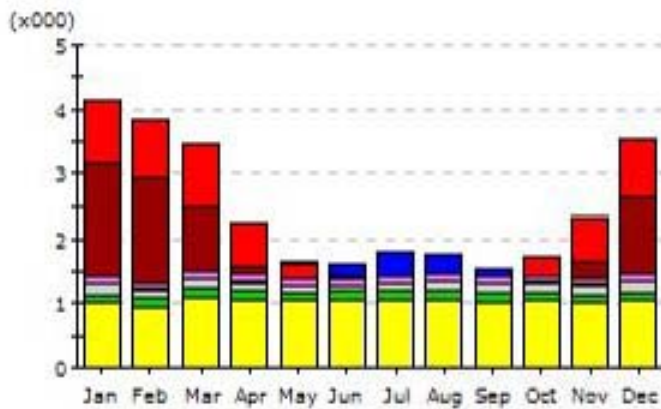
**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.03	0.29	0.59	0.45	0.15	-	-	-	1.50
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.44	1.34	1.43	0.99	0.34	0.03	-	-	0.02	0.42	1.01	1.31	8.33
HP Supp.	2.51	2.31	1.30	0.14	-	-	-	-	-	-	0.31	1.67	8.24
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.15	0.15	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.16	1.90
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.22	0.17	0.18	0.18	0.13	0.12	0.13	0.21	0.20	0.21	0.21	0.22	2.15
Misc. Equip.	0.25	0.24	0.27	0.26	0.26	0.26	0.27	0.27	0.26	0.26	0.25	0.26	3.09
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.45	1.37	1.58	1.52	1.49	1.52	1.53	1.54	1.48	1.49	1.44	1.49	17.90
<b>Total</b>	<b>6.04</b>	<b>5.58</b>	<b>4.95</b>	<b>3.27</b>	<b>2.41</b>	<b>2.39</b>	<b>2.68</b>	<b>2.62</b>	<b>2.27</b>	<b>2.55</b>	<b>3.39</b>	<b>5.13</b>	<b>43.27</b>

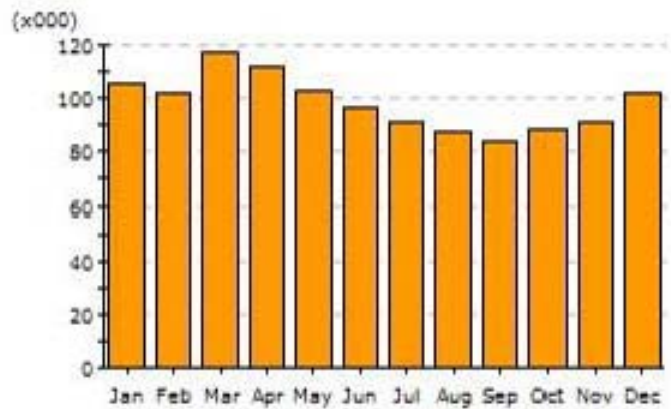
**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	190.3	184.1	211.8	200.7	184.9	173.8	164.6	157.2	151.4	160.0	164.4	183.3	2,126.4
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>190.3</b>	<b>184.1</b>	<b>211.8</b>	<b>200.7</b>	<b>184.9</b>	<b>173.8</b>	<b>164.6</b>	<b>157.2</b>	<b>151.4</b>	<b>160.0</b>	<b>164.4</b>	<b>183.3</b>	<b>2,126.4</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

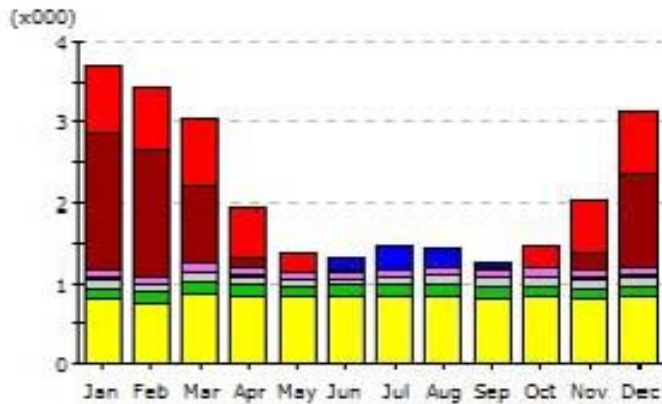
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.02	0.19	0.39	0.31	0.11	-	-	-	1.02
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	0.96	0.90	0.98	0.71	0.24	0.02	-	-	0.01	0.28	0.70	0.89	5.69
HP Supp.	1.75	1.62	0.97	0.11	-	-	-	-	-	-	0.24	1.16	5.84
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.10	0.09	0.11	0.11	0.10	0.11	0.11	0.11	0.10	0.10	0.10	0.10	1.24
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.16	0.12	0.14	0.13	0.09	0.09	0.09	0.15	0.15	0.15	0.15	0.16	1.59
Misc. Equip.	0.14	0.13	0.15	0.15	0.14	0.15	0.15	0.15	0.14	0.14	0.14	0.14	1.72
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.01	0.95	1.09	1.06	1.04	1.06	1.07	1.07	1.03	1.04	1.00	1.04	12.42
<b>Total</b>	<b>4.13</b>	<b>3.84</b>	<b>3.46</b>	<b>2.27</b>	<b>1.64</b>	<b>1.60</b>	<b>1.81</b>	<b>1.78</b>	<b>1.54</b>	<b>1.73</b>	<b>2.35</b>	<b>3.52</b>	<b>29.67</b>

Gas Consumption (Btu x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	105.7	102.3	117.7	111.5	102.7	96.5	91.4	87.3	84.1	88.8	91.3	101.8	1,181.1
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>105.7</b>	<b>102.3</b>	<b>117.7</b>	<b>111.5</b>	<b>102.7</b>	<b>96.5</b>	<b>91.4</b>	<b>87.3</b>	<b>84.1</b>	<b>88.8</b>	<b>91.3</b>	<b>101.8</b>	<b>1,181.1</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

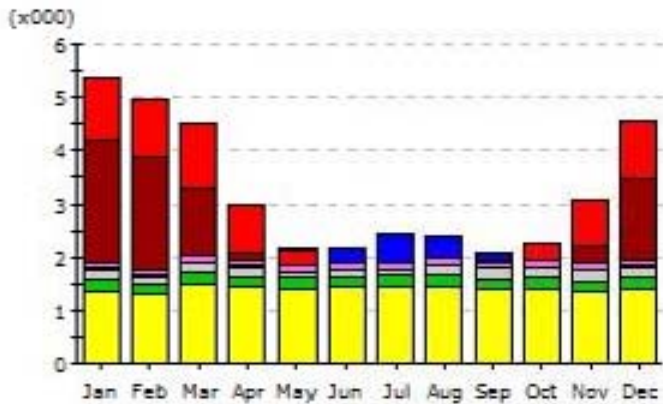
**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.01	0.15	0.32	0.24	0.07	-	-	-	0.79
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	0.84	0.79	0.86	0.62	0.23	0.03	-	-	0.02	0.27	0.62	0.79	5.08
HP Supp.	1.68	1.56	0.94	0.11	-	-	-	-	-	-	0.23	1.13	5.65
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.09	0.09	0.10	0.10	0.09	0.10	0.10	0.10	0.09	0.09	0.09	0.09	1.13
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.12	0.09	0.10	0.10	0.07	0.07	0.07	0.11	0.11	0.11	0.12	0.12	1.20
Misc. Equip.	0.14	0.13	0.15	0.15	0.14	0.15	0.15	0.15	0.14	0.14	0.14	0.14	1.72
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	0.81	0.76	0.88	0.84	0.83	0.84	0.85	0.85	0.82	0.83	0.80	0.83	9.94
<b>Total</b>	<b>3.70</b>	<b>3.44</b>	<b>3.05</b>	<b>1.94</b>	<b>1.38</b>	<b>1.33</b>	<b>1.48</b>	<b>1.45</b>	<b>1.26</b>	<b>1.46</b>	<b>2.02</b>	<b>3.12</b>	<b>25.63</b>

**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	105.8	102.3	117.7	111.5	102.7	96.6	91.4	87.3	84.1	88.9	91.4	101.9	1,181.7
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>105.8</b>	<b>102.3</b>	<b>117.7</b>	<b>111.5</b>	<b>102.7</b>	<b>96.6</b>	<b>91.4</b>	<b>87.3</b>	<b>84.1</b>	<b>88.9</b>	<b>91.4</b>	<b>101.9</b>	<b>1,181.7</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

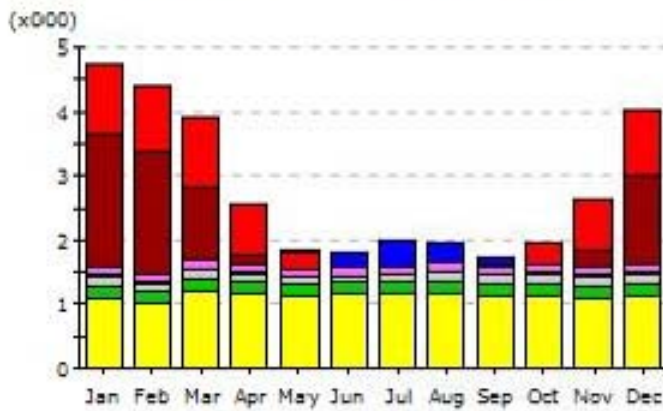
**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.03	0.25	0.52	0.41	0.15	-	-	-	1.37
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.17	1.10	1.20	0.87	0.28	0.02	-	-	0.01	0.34	0.86	1.09	6.94
HP Supp.	2.28	2.11	1.27	0.14	-	-	-	-	-	-	0.31	1.52	7.64
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.11	0.11	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.12	1.44
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.22	0.17	0.18	0.18	0.13	0.12	0.13	0.21	0.20	0.21	0.21	0.22	2.17
Misc. Equip.	0.19	0.18	0.21	0.20	0.19	0.20	0.20	0.20	0.19	0.19	0.19	0.19	2.34
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.37	1.29	1.49	1.44	1.41	1.44	1.45	1.45	1.40	1.41	1.36	1.41	16.89
<b>Total</b>	<b>5.37</b>	<b>4.97</b>	<b>4.50</b>	<b>2.96</b>	<b>2.16</b>	<b>2.15</b>	<b>2.42</b>	<b>2.39</b>	<b>2.07</b>	<b>2.28</b>	<b>3.07</b>	<b>4.58</b>	<b>38.92</b>

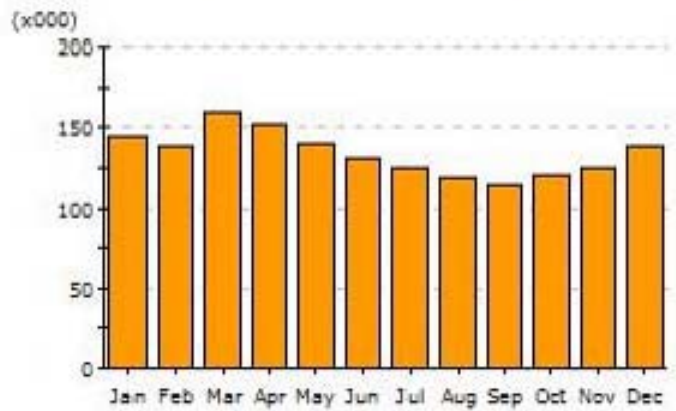
**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	143.6	138.9	159.9	151.5	139.6	131.2	124.2	118.7	114.2	120.7	124.1	138.3	1,604.9
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>143.6</b>	<b>138.9</b>	<b>159.9</b>	<b>151.5</b>	<b>139.6</b>	<b>131.2</b>	<b>124.2</b>	<b>118.7</b>	<b>114.2</b>	<b>120.7</b>	<b>124.1</b>	<b>138.3</b>	<b>1,604.9</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

**Electric Consumption (kWh x000)**

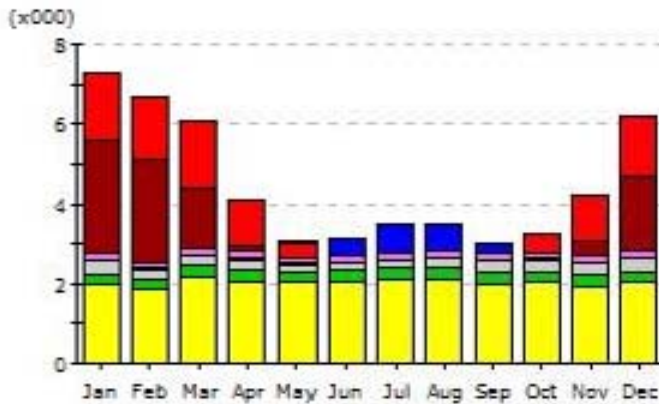
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.02	0.20	0.43	0.33	0.11	-	-	-	1.09
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.09	1.02	1.10	0.79	0.28	0.03	-	-	0.02	0.33	0.79	1.01	6.46
HP Supp.	2.07	1.92	1.13	0.13	-	-	-	-	-	-	0.27	1.39	6.91
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.11	0.11	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.12	1.44
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.16	0.12	0.14	0.13	0.10	0.09	0.10	0.16	0.15	0.16	0.16	0.16	1.63
Misc. Equip.	0.19	0.18	0.21	0.20	0.19	0.20	0.20	0.20	0.19	0.19	0.19	0.19	2.34
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.10	1.03	1.19	1.15	1.13	1.15	1.16	1.16	1.12	1.13	1.08	1.13	13.51
<b>Total</b>	<b>4.74</b>	<b>4.41</b>	<b>3.92</b>	<b>2.54</b>	<b>1.84</b>	<b>1.79</b>	<b>2.01</b>	<b>1.97</b>	<b>1.71</b>	<b>1.94</b>	<b>2.62</b>	<b>4.02</b>	<b>33.51</b>

**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	143.7	139.0	160.0	151.6	139.6	131.3	124.3	118.7	114.3	120.8	124.2	138.4	1,605.8
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>143.7</b>	<b>139.0</b>	<b>160.0</b>	<b>151.6</b>	<b>139.6</b>	<b>131.3</b>	<b>124.3</b>	<b>118.7</b>	<b>114.3</b>	<b>120.8</b>	<b>124.2</b>	<b>138.4</b>	<b>1,605.8</b>



**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

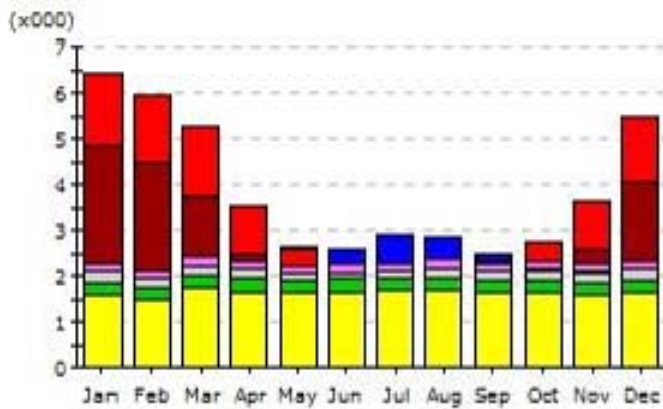
**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.05	0.40	0.78	0.61	0.24	-	-	-	2.07
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.67	1.56	1.67	1.16	0.35	0.02	-	-	0.01	0.43	1.18	1.53	9.57
HP Supp.	2.84	2.59	1.46	0.15	-	-	-	-	-	-	0.35	1.86	9.24
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.16	0.16	0.19	0.18	0.17	0.18	0.18	0.18	0.17	0.17	0.16	0.17	2.07
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.31	0.24	0.27	0.26	0.18	0.18	0.18	0.30	0.29	0.30	0.30	0.31	3.13
Misc. Equip.	0.27	0.26	0.30	0.29	0.28	0.29	0.29	0.29	0.28	0.28	0.27	0.28	3.37
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.97	1.86	2.15	2.07	2.03	2.07	2.09	2.09	2.01	2.03	1.95	2.03	24.35
<b>Total</b>	<b>7.25</b>	<b>6.68</b>	<b>6.05</b>	<b>4.11</b>	<b>3.07</b>	<b>3.13</b>	<b>3.51</b>	<b>3.46</b>	<b>3.00</b>	<b>3.22</b>	<b>4.24</b>	<b>6.21</b>	<b>53.94</b>

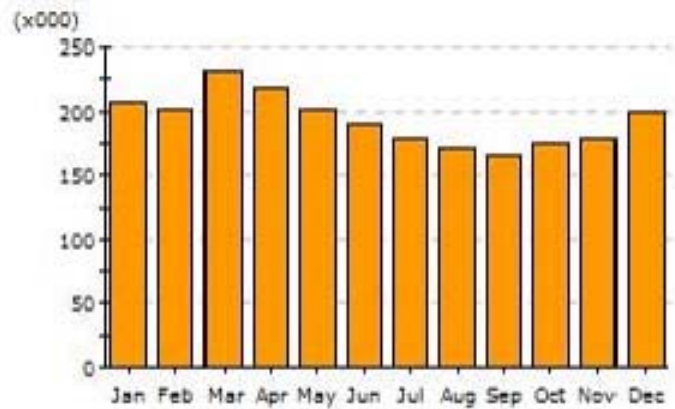
**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	206.9	200.1	230.3	218.3	201.1	189.1	179.1	171.0	164.6	173.9	178.7	199.2	2,312.4
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>206.9</b>	<b>200.1</b>	<b>230.3</b>	<b>218.3</b>	<b>201.1</b>	<b>189.1</b>	<b>179.1</b>	<b>171.0</b>	<b>164.6</b>	<b>173.9</b>	<b>178.7</b>	<b>199.2</b>	<b>2,312.4</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

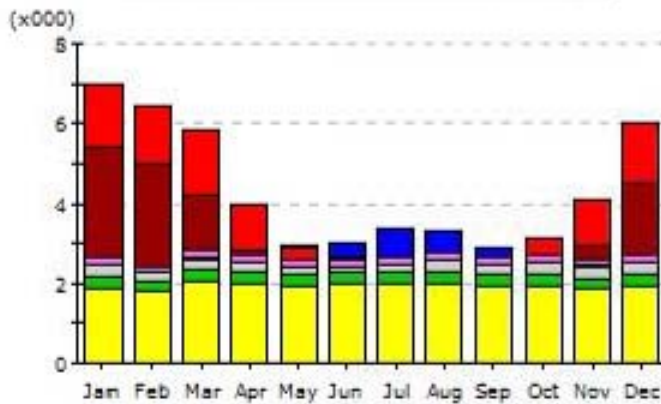
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.03	0.31	0.64	0.49	0.17	-	-	-	1.65
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.56	1.45	1.54	1.06	0.36	0.03	-	-	0.02	0.44	1.08	1.41	8.94
HP Supp.	2.58	2.37	1.31	0.14	-	-	-	-	-	-	0.31	1.71	8.43
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.16	0.16	0.19	0.18	0.17	0.18	0.18	0.18	0.17	0.17	0.16	0.17	2.07
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.23	0.18	0.20	0.19	0.14	0.13	0.14	0.22	0.22	0.22	0.23	0.23	2.34
Misc. Equip.	0.27	0.26	0.30	0.29	0.28	0.29	0.29	0.29	0.28	0.28	0.27	0.28	3.37
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.58	1.49	1.72	1.66	1.62	1.66	1.67	1.67	1.61	1.62	1.56	1.62	19.48
<b>Total</b>	<b>6.41</b>	<b>5.93</b>	<b>5.27</b>	<b>3.53</b>	<b>2.61</b>	<b>2.59</b>	<b>2.91</b>	<b>2.86</b>	<b>2.47</b>	<b>2.75</b>	<b>3.63</b>	<b>5.46</b>	<b>46.43</b>

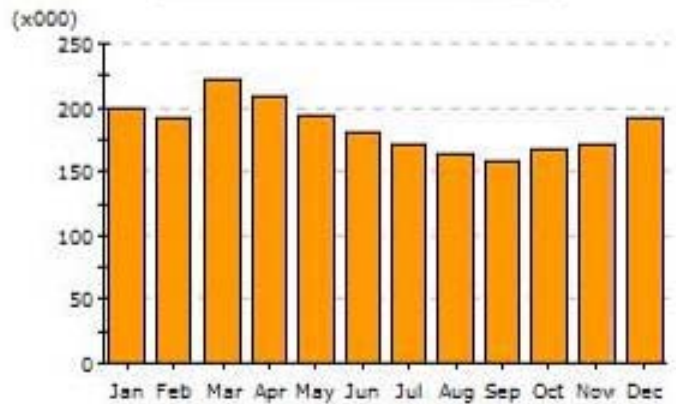
Gas Consumption (Btu x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	207.0	200.3	230.5	218.4	201.2	189.1	179.1	171.1	164.7	174.1	178.9	199.4	2,313.8
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>207.0</b>	<b>200.3</b>	<b>230.5</b>	<b>218.4</b>	<b>201.2</b>	<b>189.1</b>	<b>179.1</b>	<b>171.1</b>	<b>164.7</b>	<b>174.1</b>	<b>178.9</b>	<b>199.4</b>	<b>2,313.8</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

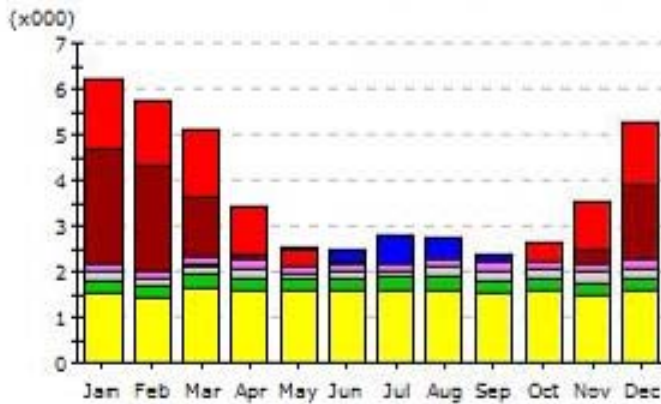
**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.05	0.38	0.74	0.58	0.23	-	-	-	1.97
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.60	1.50	1.61	1.12	0.34	0.02	-	-	0.01	0.42	1.14	1.47	9.23
HP Supp.	2.77	2.53	1.44	0.15	-	-	-	-	-	-	0.34	1.81	9.04
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.16	0.15	0.18	0.17	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16	1.99
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.30	0.23	0.25	0.25	0.18	0.17	0.18	0.29	0.28	0.29	0.29	0.30	3.00
Misc. Equip.	0.26	0.25	0.29	0.28	0.27	0.28	0.28	0.28	0.27	0.27	0.26	0.27	3.24
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.89	1.78	2.06	1.98	1.95	1.98	2.00	2.00	1.93	1.95	1.87	1.95	23.35
<b>Total</b>	<b>7.01</b>	<b>6.46</b>	<b>5.85</b>	<b>3.96</b>	<b>2.95</b>	<b>3.00</b>	<b>3.37</b>	<b>3.32</b>	<b>2.88</b>	<b>3.10</b>	<b>4.08</b>	<b>5.99</b>	<b>51.97</b>

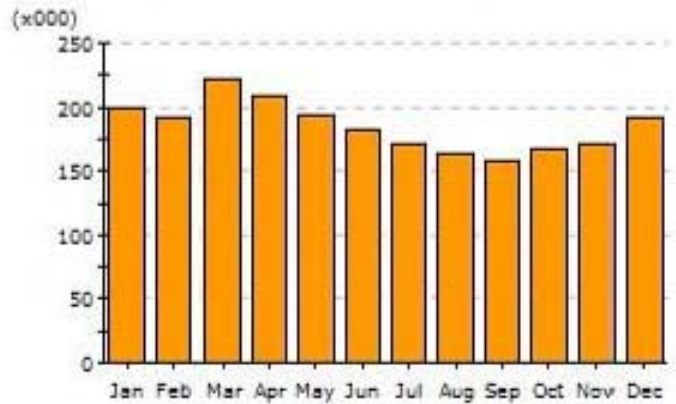
**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	198.4	191.9	220.9	209.3	192.9	181.3	171.7	164.0	157.9	166.8	171.4	191.1	2,217.8
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>198.4</b>	<b>191.9</b>	<b>220.9</b>	<b>209.3</b>	<b>192.9</b>	<b>181.3</b>	<b>171.7</b>	<b>164.0</b>	<b>157.9</b>	<b>166.8</b>	<b>171.4</b>	<b>191.1</b>	<b>2,217.8</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Refrigeration
- Heat Rejection
- Space Cooling

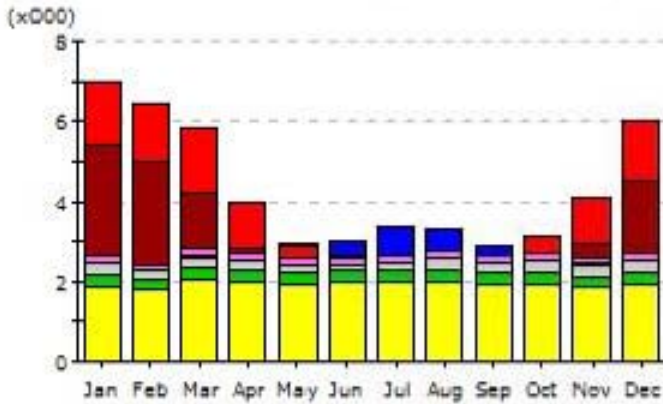
**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.03	0.30	0.61	0.47	0.16	-	-	-	1.57
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.50	1.39	1.48	1.02	0.35	0.03	-	-	0.02	0.43	1.04	1.36	8.61
HP Supp.	2.51	2.32	1.29	0.14	-	-	-	-	-	-	0.31	1.67	8.24
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.16	0.15	0.18	0.17	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16	1.99
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.23	0.17	0.19	0.19	0.13	0.13	0.13	0.22	0.21	0.22	0.22	0.23	2.25
Misc. Equip.	0.26	0.25	0.29	0.28	0.27	0.28	0.28	0.28	0.27	0.27	0.26	0.27	3.24
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.51	1.43	1.65	1.59	1.56	1.59	1.60	1.60	1.54	1.56	1.50	1.56	18.68
<b>Total</b>	<b>6.19</b>	<b>5.73</b>	<b>5.10</b>	<b>3.40</b>	<b>2.51</b>	<b>2.49</b>	<b>2.79</b>	<b>2.74</b>	<b>2.37</b>	<b>2.64</b>	<b>3.50</b>	<b>5.27</b>	<b>44.73</b>

**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	198.6	192.1	221.0	209.4	193.0	181.4	171.8	164.1	158.0	166.9	171.6	191.2	2,219.1
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>198.6</b>	<b>192.1</b>	<b>221.0</b>	<b>209.4</b>	<b>193.0</b>	<b>181.4</b>	<b>171.8</b>	<b>164.1</b>	<b>158.0</b>	<b>166.9</b>	<b>171.6</b>	<b>191.2</b>	<b>2,219.1</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Exterior Usage
- Pumps & Aux.
- Ventilation Fans
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

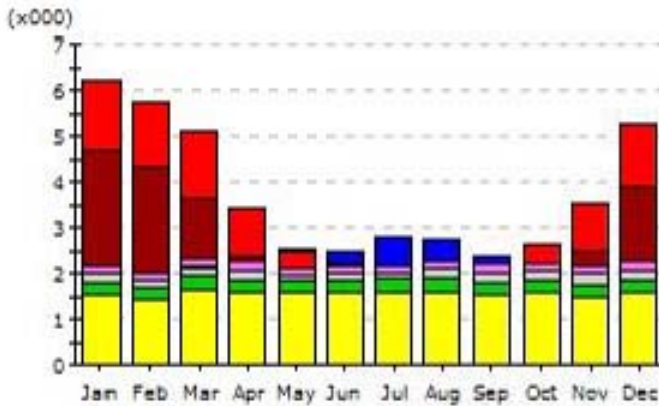
**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.05	0.38	0.74	0.58	0.23	-	-	-	1.97
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.60	1.50	1.61	1.12	0.34	0.02	-	-	0.01	0.42	1.14	1.47	9.23
HP Supp.	2.77	2.53	1.44	0.15	-	-	-	-	-	-	0.34	1.81	9.04
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.16	0.15	0.18	0.17	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16	1.99
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.30	0.23	0.25	0.25	0.18	0.17	0.18	0.29	0.28	0.29	0.29	0.30	3.00
Misc. Equip.	0.26	0.25	0.29	0.28	0.27	0.28	0.28	0.28	0.27	0.27	0.26	0.27	3.24
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.89	1.78	2.06	1.98	1.95	1.98	2.00	2.00	1.93	1.95	1.87	1.95	23.35
<b>Total</b>	<b>7.01</b>	<b>6.46</b>	<b>5.85</b>	<b>3.96</b>	<b>2.95</b>	<b>3.00</b>	<b>3.37</b>	<b>3.32</b>	<b>2.88</b>	<b>3.10</b>	<b>4.08</b>	<b>5.99</b>	<b>51.97</b>

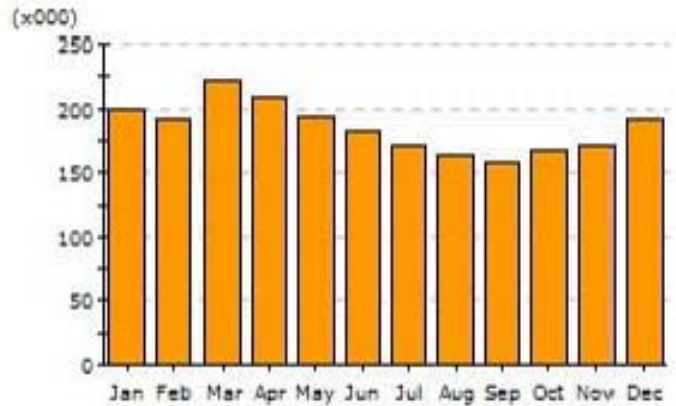
**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	198.4	191.9	220.9	209.3	192.9	181.3	171.7	164.0	157.9	166.8	171.4	191.1	2,217.8
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>198.4</b>	<b>191.9</b>	<b>220.9</b>	<b>209.3</b>	<b>192.9</b>	<b>181.3</b>	<b>171.7</b>	<b>164.0</b>	<b>157.9</b>	<b>166.8</b>	<b>171.4</b>	<b>191.1</b>	<b>2,217.8</b>

**Electric Consumption (kWh)**



**Gas Consumption (Btu)**



- Area Lighting
- Task Lighting
- Misc. Equipment
- Ventilation Fans
- Pumps & Aux.
- Exterior Usage
- Water Heating
- Ht Pump Supp.
- Space Heating
- Refrigeration
- Heat Rejection
- Space Cooling

**Electric Consumption (kWh x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	0.03	0.30	0.61	0.47	0.16	-	-	-	1.57
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.50	1.39	1.48	1.02	0.35	0.03	-	-	0.02	0.43	1.04	1.36	8.61
HP Supp.	2.51	2.32	1.29	0.14	-	-	-	-	-	-	0.31	1.67	8.24
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.16	0.15	0.18	0.17	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16	1.99
Pumps & Aux.	0.02	0.02	0.02	0.02	0.00	-	-	-	0.00	0.01	0.02	0.02	0.14
Ext. Usage	0.23	0.17	0.19	0.19	0.13	0.13	0.13	0.22	0.21	0.22	0.22	0.23	2.25
Misc. Equip.	0.26	0.25	0.29	0.28	0.27	0.28	0.28	0.28	0.27	0.27	0.26	0.27	3.24
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.51	1.43	1.65	1.59	1.56	1.59	1.60	1.60	1.54	1.56	1.50	1.56	18.68
<b>Total</b>	<b>6.19</b>	<b>5.73</b>	<b>5.10</b>	<b>3.40</b>	<b>2.51</b>	<b>2.49</b>	<b>2.79</b>	<b>2.74</b>	<b>2.37</b>	<b>2.64</b>	<b>3.50</b>	<b>5.27</b>	<b>44.73</b>

**Gas Consumption (Btu x000)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	198.6	192.1	221.0	209.4	193.0	181.4	171.8	164.1	158.0	166.9	171.6	191.2	2,219.1
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>198.6</b>	<b>192.1</b>	<b>221.0</b>	<b>209.4</b>	<b>193.0</b>	<b>181.4</b>	<b>171.8</b>	<b>164.1</b>	<b>158.0</b>	<b>166.9</b>	<b>171.6</b>	<b>191.2</b>	<b>2,219.1</b>

# Wastewater Calculations

## Herald Square Greenhouse Gas Reductions due to Water Conservation

Buildings 100% Wastewater Rate (gallons/day)	Water Conservation Reduction Factor	Projected Wastewater Rate
41,843	35%	27,198

### Greenhouse Gas Emission Equation:

$$\begin{aligned} & \text{Gallons/day} \times 365 \text{ days/year} \times 1 \text{ kgal/1000 gal} \times 1.3 \text{ kWh/kgal}^* \times \\ & 1 \text{ mWh/1000 kWh} \times 1107 \text{ GHG lbs./mWh} \times 0.0005 \text{ tons/lb} = \\ & \text{GHG tons/year} \end{aligned}$$

### Sample Calculation:

$$\begin{aligned} & 8,400 \text{ gallons/day} \times 365 \text{ days/year} \times 1 \text{ kgallon/1000 gallons} \times \\ & 1.3 \text{ kWh/kgallon} \times 1 \text{ mWh/1000 kWh} \times 1107 \text{ GHG lbs./mWh} \times \\ & 0.0005 \text{ tons/lb} = 2.21 \text{ GHG tons/year} \end{aligned}$$

### 100% Wastewater Rate

Wastewater Rate (gallons/day)	Annual Wastewater Rate (gallons/year)	Annual Wastewater Flow Energy Usage (Kilowatt Hours/year)	Greenhouse Gas Emissions from Wastewater Rate (tons/year)
41,843.00	15,272,695.00	19,854.50	10.99

### Reduced Wastewater Rate

Wastewater Rate (gallons/day)	Annual Wastewater Rate (gallons/year)	Annual Wastewater Flow Energy Usage (Kilowatt Hours/year)	Greenhouse Gas Emissions from Wastewater Rate (tons/year)
27,197.95	9,927,251.75	12,905.43	7.14

### Change in Greenhouse Gas Emissions

100% Wastewater Rate Greenhouse Gas Emissions (tons per year)	Reduced Wastewater Rate Greenhouse Gas Emissions (tons per year)	Change in Greenhouse Gas Emissions (tons per year)
10.99	7.14	3.85



# Greenhouse Gas - Mobile

## Herald Square, Boston MA

<u>Pollutant</u>	<u>Annual Total CO<sub>2</sub> Emissions Inventory in Tons per Year</u>			<u>2016 Build Alternative With Mitigation</u>
	<u>2011 Existing Condition</u>	<u>2016 No-Build Alternative</u>	<u>2016 Build Alternative</u>	
Carbon Dioxide	14,451.2	15,919.8	16,569.0	16,546.7
Difference - Existing		1,468.7	2,117.8	2,095.5
Difference - No-Build			649.2	626.9

## Herald Square, Boston MA

<u>Pollutant</u>	<u>Annual Weekend CO<sub>2</sub> Emissions Inventory in Tons per Year</u>			<u>2016 Build Alternative With Mitigation</u>
	<u>2011 Existing Condition</u>	<u>2016 No-Build Alternative</u>	<u>2016 Build Alternative</u>	
Carbon Dioxide	3,011.7	3,321.7	3,509.7	3,501.5
Difference - Existing		310.1	498.0	489.8
Difference - No-Build			188.0	179.8

## Herald Square, Boston MA

<u>Pollutant</u>	<u>Annual Weekday CO<sub>2</sub> Emissions Inventory in Tons per Year</u>			<u>2016 Build Alternative With Mitigation</u>
	<u>2011 Existing Condition</u>	<u>2016 No-Build Alternative</u>	<u>2016 Build Alternative</u>	
Carbon Dioxide	11,439.5	12,598.1	13,059.2	13,045.2
Difference - Existing		1,158.6	1,619.7	1,605.7
Difference - No-Build			461.1	447.1

### Herald Square, Boston MA

#### 2016 Build with Mitigation Condition

Link No.	Description	Weekday Peak Traffic Data				Weekday Off-Peak Traffic Data				Weekend Peak Traffic Data				Weekend Off-Peak Traffic Data					
		Roadway Link Length type (miles)	Annual Weekday Peak VMT (veh-miles)	Wkdy Speed Peak (mph)	E.M.F. CO2 (g/veh-mi)	Emissions CO2 (Kg/year)	Annual Weekday Off-Peak VMT (veh-miles)	Speed Off-Peak (mph)	E.M.F. CO2 (g/veh-mi)	Emissions CO2 (Kg/year)	Annual Weekend Peak (veh-miles)	Wkend Speed Peak (mph)	E.M.F. CO2 (g/veh-mi)	Emissions CO2 (Kg/year)	Annual Weekend Off- (veh-miles)	Wkend Speed Off-Peak (mph)	E.M.F. CO2 (g/veh-mi)	Emissions CO2 (Kg/year)	
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	976,685	20	565.98	552784.36	960,233	30	565.98	543472.91	175,304	20	565.98	99218.41	305,202	30	565.98	172738.06
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	334,691	20	565.98	189428.25	329,053	30	565.98	186237.40	80,196	20	565.98	45389.59	139,621	30	565.98	79022.74
3	Washington Street - between Herald Street and Mass Ave	2	0.97	1,047,258	20	565.98	592727.10	1,029,617	30	565.98	582742.83	284,129	20	565.98	160811.06	494,664	30	565.98	279970.12
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	190,573	20	565.98	107860.36	187,363	30	565.98	106043.49	37,530	20	565.98	21241.01	65,339	30	565.98	36980.35
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	291,168	20	565.98	164795.18	286,263	30	565.98	162019.26	70,811	20	565.98	40077.42	123,281	30	565.98	69774.30
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	68,019	20	565.98	38497.45	66,873	30	565.98	37848.97	14,624	20	565.98	8276.79	25,460	30	565.98	14409.80
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	252,466	20	565.98	142890.74	248,213	30	565.98	140483.80	43,742	20	565.98	24757.23	76,155	30	565.98	43102.04
8	Albany Street - north of Herald Street	2	0.21	562,339	20	565.98	318272.65	552,867	30	565.98	312911.46	107,436	20	565.98	60806.52	187,044	30	565.98	105863.41
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	156,074	20	565.98	88334.74	153,445	30	565.98	86846.78	28,471	20	565.98	16113.81	49,567	30	565.98	28053.96
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	408,220	20	565.98	231044.51	401,344	30	565.98	227152.65	69,052	20	565.98	39081.86	120,218	30	565.98	68041.05
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	125,245	20	565.98	70886.36	123,136	30	565.98	69692.30	21,509	20	565.98	12173.91	37,448	30	565.98	21194.63
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	317,748	20	565.98	179838.85	312,395	30	565.98	176809.53	49,644	20	565.98	28097.28	86,429	30	565.98	48917.03
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	203,020	20	565.98	114905.23	199,600	30	565.98	112969.70	41,759	20	565.98	23634.50	72,701	30	565.98	41147.37
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	147,061	20	565.98	83233.86	144,584	30	565.98	81831.81	23,653	20	565.98	13387.16	41,180	30	565.98	23306.88
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	1,562,832	20	565.98	884531.92	1,536,507	30	565.98	869632.30	279,934	20	565.98	158437.11	487,362	30	565.98	275837.10
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	30,910	20	565.98	17494.43	30,389	30	565.98	17199.74	10,597	20	565.98	5997.63	18,449	30	565.98	10441.80
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	18,226	20	565.98	10315.28	17,919	30	565.98	10141.53	11,121	20	565.98	6294.24	19,361	30	565.98	10958.20
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	103,880	20	565.98	58793.74	102,130	30	565.98	57803.38	28,462	20	565.98	16108.82	49,552	30	565.98	28045.26
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	189,154	20	565.98	107057.32	185,968	30	565.98	105253.97	44,896	20	565.98	25410.30	78,164	30	565.98	44239.02
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	142,207	20	565.98	80486.16	139,811	30	565.98	79130.40	23,510	20	565.98	13306.31	40,931	30	565.98	23166.13
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	82,730	20	565.98	46823.73	81,337	30	565.98	46035.00	19,637	20	565.98	11114.33	34,188	30	565.98	19349.91
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	616,281	20	565.98	348802.96	605,900	30	565.98	342927.50	100,584	20	565.98	56928.66	175,116	30	565.98	99112.10
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	418,086	20	565.98	236628.19	411,043	30	565.98	232642.27	77,582	20	565.98	43909.85	135,069	30	565.98	76446.52
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	1,180,864	20	565.98	668345.68	1,160,973	30	565.98	657087.64	217,096	20	565.98	122872.18	377,962	30	565.98	213918.98
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	88,226	20	565.98	49934.24	86,740	30	565.98	49093.12	14,812	20	565.98	8383.17	25,787	30	565.98	14595.00
26	East Berkeley Street - west of Harrison Ave	2	0.30	480,034	20	565.98	271689.78	471,948	30	565.98	267113.26	117,159	20	565.98	66309.55	203,972	30	565.98	115444.13
27	Site Drive North - Albany Street	2	0.02	306	20	565.98	173.08	301	30	565.98	170.16	95	20	565.98	53.62	165	30	565.98	93.35
28	Site Drive South - Harrison Ave	2	0.02	2,446	20	565.98	1384.61	2,405	30	565.98	1361.29	995	20	565.98	562.99	1,732	30	565.98	980.15
29	Site Drive -Traveler Street	2	0.02	12,324	20	565.98	6974.98	12,116	30	565.98	6857.49	4,405	20	565.98	2493.22	7,669	30	565.98	4340.67
30	Site Drive - No Data	2	0.02	0	20	565.98	0.00	0	30	565.98	0.00	0	20	565.98	0.00	0	30	565.98	0.00

#### Mesoscale CO2 Emissions (tons/year)

**16546.7**

#### Weekday CO2 Emission Inventory

VMT Emissions (tons/year)	Peak	Off-Peak
VMT = 19,849,549	<b>6244.5</b>	<b>6139.3</b>

Idle Emissions (tons/year)	Peak	Off-Peak
	<b>350.88</b>	<b>310.5</b>

**TOTAL 13045.2**

#### Weekend CO2 Emission Inventory

VMT Emissions (tons/year)	Peak	Off-Peak
VMT = 5,478,530	<b>1247.0</b>	<b>2171.0</b>

Idle Emissions (tons/year)	Peak	Off-Peak
	<b>32.54</b>	<b>51.0</b>

**TOTAL 3501.5**

**Herald Square, Boston MA**

**2016 Build with Mitigation Condition**

Link No.	Description	Seasonally Adjusted Wkdy ADT (veh/day)	Seasonally Adjusted Wknd ADT (veh/day)	Annual Weekday Trips (veh/day)	Annual Weekend Trips (veh/day)	Wkdy Peak Period Factor	Wknd Peak Period Factor	Weekday Peak Traffic Data			Weekday Off-Peak Traffic Data			Weekend Peak Traffic Data			Weekend Off-Peak Traffic Data		
								Period Volume (vehicles)	Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	18,170	11,162	4,724,192	1,171,965	0.50	0.36	2,382,159	29.1	69,201,728	2,342,033	26.15	61,232,445	427,570	8.8	3,762,617	744,394	7.92	5,895,604
2	Washington Street - between Herald Street and Kneeland Street	8,235	6,753	2,141,109	709,089	0.50	0.36	1,079,647	5.6	5,992,043	1,061,461	5.00	5,301,999	258,698	5.7	1,474,580	450,391	5.13	2,310,504
3	Washington Street - between Herald Street and Mass Ave	8,235	7,646	2,141,109	802,879	0.50	0.36	1,079,647	6.9	7,395,585	1,061,461	6.17	6,543,908	292,916	6.8	1,991,829	509,963	6.12	3,120,975
4	Herald Street - between Washington Street and Harrison Ave	18,170	12,246	4,724,192	1,285,853	0.50	0.36	2,382,159	18.9	45,022,811	2,342,033	17.01	39,837,976	469,120	10.3	4,808,482	816,733	9.23	7,534,359
5	Harrison Ave - between Herald Street and Kneeland Street	5,047	4,201	1,312,343	441,116	0.50	0.36	661,745	13.8	9,098,995	650,598	12.38	8,051,153	160,933	12.2	1,963,387	280,183	10.98	3,076,409
6	Harrison Ave - between Herald Street and Traveler Street	8,647	6,362	2,248,207	668,062	0.50	0.36	1,133,652	16.4	18,535,202	1,114,556	14.72	16,400,685	243,730	16.0	3,887,501	424,332	14.36	6,091,283
7	Herald Street - between Harrison Ave and Albany Street	19,257	11,419	5,006,794	1,198,969	0.50	0.36	2,524,661	60.0	151,479,638	2,482,134	54.00	134,035,217	437,422	9.9	4,330,481	761,547	8.91	6,785,384
8	Albany Street - north of Herald Street	20,425	13,355	5,310,503	1,402,287	0.50	0.36	2,677,805	14.5	38,828,172	2,632,698	13.05	34,356,713	511,599	8.6	4,399,752	890,688	7.74	6,893,924
9	Albany Street - between Herald Street and I-93 SB On-ramp	39,682	24,774	10,317,298	2,601,256	0.50	0.36	5,202,466	2.3	11,705,548	5,114,832	2.03	10,357,535	949,021	1.9	1,755,690	1,652,235	1.67	2,750,971
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	28,306	16,387	7,359,675	1,720,634	0.50	0.36	3,711,093	13.0	48,058,659	3,648,581	11.66	42,524,215	627,742	4.7	2,919,002	1,092,892	4.19	4,573,753
11	Albany Street - between Traveler Street and East Berkeley Street	13,647	8,021	3,548,299	842,244	0.50	0.36	1,789,219	11.4	20,397,098	1,759,080	10.26	18,048,164	307,278	11.9	3,641,240	534,967	10.67	5,705,420
12	Albany Street - between East Berkeley Street and Albany Street	11,541	6,171	3,000,681	647,964	0.50	0.36	1,513,084	0.0	0	1,487,597	0.00	0	236,398	0.0	411,566	0.00	0	
13	I-93 NB On-Ramp - north of Traveler Street to I-93	19,357	13,626	5,032,751	1,430,746	0.50	0.36	2,537,749	0.0	0	2,495,002	0.00	0	521,982	0.0	0	908,764	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,021	7,718	3,645,572	810,409	0.50	0.36	1,838,269	16.6	30,515,258	1,807,304	14.94	27,001,115	295,663	13.9	4,094,935	514,746	12.47	6,416,310
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	22,492	13,788	5,847,811	1,447,728	0.50	0.36	2,948,741	60.0	176,924,430	2,899,070	54.00	156,549,782	528,178	10.9	5,757,135	919,551	9.81	9,020,793
16	Mullins Way - between Washington Street and Harrison Ave	3,368	3,952	875,704	414,942	0.50	0.36	441,571	7.3	3,201,390	434,133	6.53	2,832,717	151,384	6.1	923,443	263,558	5.49	1,446,933
17	Traveler Street - between Washington Street and Harrison Ave	1,738	3,629	451,801	381,030	0.50	0.36	227,819	0.0	0	223,982	0.00	0	139,012	0.0	0	242,018	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	7,923	7,430	2,060,092	780,135	0.50	0.36	1,038,795	33.3	34,591,883	1,021,297	29.97	30,608,276	284,618	29.5	8,396,237	495,517	26.55	13,155,973
19	East Berkeley Street - between Harrison Ave and Albany Street	14,428	11,720	3,751,215	1,230,597	0.50	0.36	1,891,539	21.5	40,573,509	1,859,677	19.31	35,901,056	448,961	11.3	5,050,812	781,636	10.13	7,914,063
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	18,078	10,229	4,700,300	1,074,021	0.50	0.36	2,370,112	6.0	14,102,166	2,330,188	5.36	12,478,158	391,837	4.8	1,861,226	682,184	4.28	2,916,335
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	12,621	10,253	3,281,343	1,076,513	0.50	0.36	1,654,607	5.4	8,852,149	1,626,736	4.82	7,832,734	392,746	4.3	1,688,809	683,766	3.87	2,646,176
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	22,384	12,503	5,819,913	1,312,858	0.50	0.36	2,934,673	0.0	0	2,885,240	0.00	0	478,972	0.0	0	833,885	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	12,756	8,101	3,316,516	850,605	0.50	0.36	1,672,343	19.3	32,276,222	1,644,173	17.37	28,559,286	310,328	16.8	5,213,509	540,277	15.12	8,168,991
24	Harrison Ave- between East Berkeley Street and Mass. Ave	11,120	6,997	2,891,158	734,640	0.50	0.36	1,457,857	17.6	25,658,290	1,433,300	15.84	22,703,477	268,020	12.5	3,350,252	466,620	11.25	5,249,473
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,412	4,833	2,187,077	507,486	0.50	0.36	1,102,827	0.0	0	1,084,250	0.00	0	185,147	0.0	0	322,339	0.00	0
26	East Berkeley Street - west of Harrison Ave	12,205	10,195	3,173,275	1,070,436	0.50	0.36	1,600,114	0.0	0	1,573,161	0.00	0	390,529	0.0	0	679,907	0.00	0
27	Site Drive North - Albany Street	117	124	30,322	12,983	0.50	0.36	15,290	2.3	34,402	15,032	2.03	30,441	4,737	6.4	30,315	8,247	5.76	47,500
28	Site Drive South - Harrison Ave	933	1,298	242,579	136,324	0.50	0.36	122,320	4.7	574,903	120,259	4.23	508,697	49,735	4.6	228,783	86,589	4.14	358,478
29	Site Drive -Traveler Street	4,700	5,750	1,221,993	603,722	0.50	0.36	616,186	28.2	17,376,446	605,807	25.38	15,375,372	220,257	16.5	3,634,242	383,465	14.85	5,694,454
30	Site Drive - No Data	0	0	0	0	0.50	0.36	0	0.0	0	0	0.00	0	0	0.0	0	0	0.00	0

Freeway	0	0	Freeway	0
Arterial	810,396,529	717,071,123	Arterial	75,164,259

**Weekday Idle Emission Parameters**

**Weekend Idle Emission Parameters**

Pollutant	Peak Period Emissions			Off-Peak Period Emissions			Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/year)	(tons/year)	(g/sec)	(g/year)	(tons/year)	(g/sec)	(g/year)	(tons/year)	(g/sec)	(g/year)	(tons/year)
Freeway	0.3930	0	0.00	0.3930	0	0.00	0.3930	0	0.00	0.3930	0	0.00
Arterial	0.3930	318,519,602	351.11	0.3930	281,838,829	310.67	0.3930	29,542,685	32.57	0.3930	46,290,114	51.03
Total			350.88			310.48			32.54			50.99

## Herald Square, Boston MA

### 2016 Build Condition

Link No.	Description	Roadway Link Length type (miles)	Weekday Peak Traffic Data				Weekday Off-Peak Traffic Data				Weekend Peak Traffic Data				Weekend Off-Peak Traffic Data				
			Annual Peak VMT (veh-miles)	Weekday Wkdy Speed Peak (mph)	E.M.F. CO2 (g/veh-mi)	Emissions CO2 (Kg/year)	Annual Peak VMT (veh-miles)	Weekday Off-Peak Speed Off-Peak (mph)	E.M.F. CO2 (g/veh-mi)	Emissions CO2 (Kg/year)	Annual Weekend Peak (veh-miles)	Weekend Wkend Speed Peak (mph)	E.M.F. CO2 (g/veh-mi)	Emissions CO2 (Kg/year)	Annual Weekend Off- (veh-miles)	Weekend Off-Peak Off-Peak (mph)	E.M.F. CO2 (g/veh-mi)	Emissions CO2 (Kg/year)	
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	976,886	20	565.98	552897.87	960,431	30	565.98	543584.50	175,366	20	565.98	99253.57	305,310	30	565.98	172799.28
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	335,070	20	565.98	189642.81	329,426	30	565.98	186448.34	80,314	20	565.98	45456.06	139,826	30	565.98	79138.46
3	Washington Street - between Herald Street and Mass Ave	2	0.97	1,048,444	20	565.98	593398.46	1,030,784	30	565.98	583402.88	284,496	20	565.98	161019.04	495,304	30	565.98	280332.21
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	190,612	20	565.98	107882.51	187,401	30	565.98	106065.27	37,542	20	565.98	21247.87	65,360	30	565.98	36992.29
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	291,598	20	565.98	165038.81	286,686	30	565.98	162258.79	70,977	20	565.98	40171.76	123,571	30	565.98	69938.55
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	68,166	20	565.98	38580.50	67,018	30	565.98	37930.63	14,665	20	565.98	8299.95	25,531	30	565.98	14450.11
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	252,466	20	565.98	142890.74	248,213	30	565.98	140483.80	43,750	20	565.98	24761.52	76,168	30	565.98	43109.51
8	Albany Street - north of Herald Street	2	0.21	563,315	20	565.98	318824.97	553,826	30	565.98	313454.48	107,786	20	565.98	61004.64	187,654	30	565.98	106208.34
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	156,213	20	565.98	88413.65	153,582	30	565.98	86924.35	28,523	20	565.98	16143.40	49,658	30	565.98	28105.47
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	408,758	20	565.98	231349.04	401,873	30	565.98	227452.05	69,257	20	565.98	39197.90	120,575	30	565.98	68243.07
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	125,365	20	565.98	70954.18	123,253	30	565.98	69758.99	21,557	20	565.98	12200.93	37,531	30	565.98	21241.67
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	318,107	20	565.98	180042.34	312,749	30	565.98	177009.59	49,787	20	565.98	28178.33	86,678	30	565.98	49058.14
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	203,235	20	565.98	115027.05	199,812	30	565.98	113089.46	41,843	20	565.98	23682.53	72,849	30	565.98	41230.99
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	147,061	20	565.98	83233.86	144,584	30	565.98	81831.81	23,659	20	565.98	13390.59	41,190	30	565.98	23312.85
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	1,563,869	20	565.98	885118.84	1,537,527	30	565.98	870209.34	281,099	20	565.98	159096.22	489,389	30	565.98	276984.60
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	30,927	20	565.98	17504.12	30,406	30	565.98	17209.27	10,607	20	565.98	6003.63	18,468	30	565.98	10452.25
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	18,304	20	565.98	10359.58	17,995	30	565.98	10185.08	11,145	20	565.98	6307.96	19,404	30	565.98	10982.09
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	104,931	20	565.98	59388.96	103,164	30	565.98	58388.58	28,841	20	565.98	16323.24	50,211	30	565.98	28418.56
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	189,350	20	565.98	107168.06	186,160	30	565.98	105362.85	44,972	20	565.98	25453.18	78,295	30	565.98	44313.68
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	142,486	20	565.98	80643.96	140,085	30	565.98	79285.54	23,610	20	565.98	13362.92	41,105	30	565.98	23264.68
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	82,840	20	565.98	46886.02	81,445	30	565.98	46096.25	19,675	20	565.98	11135.77	34,254	30	565.98	19387.24
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	616,333	20	565.98	348832.03	605,951	30	565.98	342956.08	100,600	20	565.98	56937.66	175,144	30	565.98	99127.78
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	418,147	20	565.98	236662.79	411,103	30	565.98	232676.29	77,601	20	565.98	43920.57	135,102	30	565.98	76465.19
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	1,182,251	20	565.98	669130.56	1,162,337	30	565.98	657859.29	217,771	20	565.98	123254.27	379,137	30	565.98	214584.19
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	88,363	20	565.98	50011.76	86,875	30	565.98	49169.33	14,860	20	565.98	8410.62	25,872	30	565.98	14642.78
26	East Berkeley Street - west of Harrison Ave	2	0.30	480,474	20	565.98	271938.94	472,381	30	565.98	267358.23	117,318	20	565.98	66399.60	204,249	30	565.98	115600.91
27	Site Drive North - Albany Street	2	0.02	316	20	565.98	178.61	310	30	565.98	175.60	98	20	565.98	55.33	170	30	565.98	96.33
28	Site Drive South - Harrison Ave	2	0.02	2,525	20	565.98	1428.91	2,482	30	565.98	1404.84	1,027	20	565.98	581.00	1,787	30	565.98	1011.51
29	Site Drive -Traveler Street	2	0.02	12,718	20	565.98	7198.12	12,504	30	565.98	7076.87	4,546	20	565.98	2572.98	7,915	30	565.98	4479.54
30	Site Drive - No Data	2	0.02	0	20	565.98	0.00	0	30	565.98	0.00	0	20	565.98	0.00	0	30	565.98	0.00

### Mesoscale CO2 Emissions (tons/year)

**16569.0**

### Weekday CO2 Emission Inventory

VMT Emissions (tons/year)	Peak	Off-Peak
VMT = 19,869,494	<b>6250.8</b>	<b>6145.5</b>
Idle Emissions (tons/year)	Peak	Off-Peak
	<b>351.72</b>	<b>311.2</b>
	<b>TOTAL</b>	<b>13059.2</b>

### Weekend CO2 Emission Inventory

VMT Emissions (tons/year)	Peak	Off-Peak
VMT = 5,490,998	<b>1249.8</b>	<b>2175.9</b>
Idle Emissions (tons/year)	Peak	Off-Peak
	<b>32.72</b>	<b>51.3</b>
	<b>TOTAL</b>	<b>3509.7</b>

**Herald Square, Boston MA**

**2016 Build Condition**

Link No.	Description	Seasonally Adjusted	Seasonally Adjusted	Annual	Annual	Wkdy Peak	Wknd Peak	Weekday Peak Traffic Data			Weekday Off-Peak Traffic Data			Weekend Peak Traffic Data			Weekend Off-Peak Traffic Data		
		Wkdy ADT (veh/day)	Wknd ADT (veh/day)	Weekday Trips (veh/day)	Weekend Trips (veh/day)	Period Factor	Period Factor	Period Volume (vehicles)	Wkday Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Wkday Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Wknd Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Wknd Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	18,174	11,166	4,725,162	1,172,380	0.50	0.36	2,382,648	29.1	69,215,938	2,342,514	26.15	61,245,019	427,722	8.8	3,763,950	744,658	7.92	5,897,693
2	Washington Street - between Herald Street and Kneeland Street	8,244	6,763	2,143,534	710,127	0.50	0.36	1,080,870	5.6	5,998,830	1,062,663	5.00	5,308,004	259,077	5.7	1,476,739	451,050	5.13	2,313,887
3	Washington Street - between Herald Street and Mass Ave	8,244	7,656	2,143,534	803,918	0.50	0.36	1,080,870	6.9	7,403,962	1,062,663	6.17	6,551,320	293,295	6.8	1,994,405	510,623	6.12	3,125,011
4	Herald Street - between Washington Street and Harrison Ave	18,174	12,250	4,725,162	1,286,268	0.50	0.36	2,382,648	18.9	45,032,056	2,342,514	17.01	39,846,157	469,272	10.3	4,810,035	816,996	9.23	7,536,792
5	Harrison Ave - between Herald Street and Kneeland Street	5,055	4,211	1,314,283	442,155	0.50	0.36	662,723	13.8	9,112,447	651,560	12.38	8,063,056	161,312	12.2	1,968,008	280,843	10.98	3,083,651
6	Harrison Ave - between Herald Street and Traveler Street	8,666	6,380	2,253,057	669,931	0.50	0.36	1,136,097	16.4	18,575,191	1,116,960	14.72	16,436,068	244,412	16.0	3,898,377	425,519	14.36	6,108,325
7	Herald Street - between Harrison Ave and Albany Street	19,257	11,421	5,006,794	1,199,177	0.50	0.36	2,524,661	60.0	151,479,638	2,482,134	54.00	134,035,217	437,498	9.9	4,331,231	761,679	8.91	6,786,560
8	Albany Street - north of Herald Street	20,460	13,399	5,319,719	1,406,856	0.50	0.36	2,682,452	14.5	38,895,553	2,637,267	13.05	34,416,334	513,266	8.6	4,414,087	893,590	7.74	6,916,386
9	Albany Street - between Herald Street and I-93 SB On-ramp	39,717	24,819	10,326,513	2,606,033	0.50	0.36	5,207,113	2.3	11,716,003	5,119,401	2.03	10,366,786	950,764	1.9	1,758,914	1,655,269	1.67	2,756,023
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	28,344	16,436	7,369,375	1,725,743	0.50	0.36	3,715,985	13.0	48,122,004	3,653,390	11.66	42,580,266	629,606	4.7	2,927,669	1,096,137	4.19	4,587,333
11	Albany Street between Traveler Street and East Berkeley Street	13,660	8,039	3,551,695	844,113	0.50	0.36	1,790,931	11.4	20,416,615	1,760,764	10.26	18,065,434	307,960	11.9	3,649,321	536,154	10.67	5,718,082
12	Albany Street - between East Berkeley Street and Albany Street	11,554	6,189	3,004,077	649,833	0.50	0.36	1,514,796	0.0	0	1,489,280	0.00	0	237,080	0.0	0	412,753	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	19,377	13,654	5,038,087	1,433,653	0.50	0.36	2,540,440	0.0	0	2,497,647	0.00	0	523,042	0.0	0	910,611	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,021	7,720	3,645,572	810,617	0.50	0.36	1,838,269	16.6	30,515,258	1,807,304	14.94	27,001,115	295,739	13.9	4,095,985	514,878	12.47	6,417,954
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	22,507	13,845	5,851,691	1,453,751	0.50	0.36	2,950,697	60.0	177,041,827	2,900,994	54.00	156,653,659	530,375	10.9	5,781,086	923,376	9.81	9,058,321
16	Mullins Way - between Washington Street and Harrison Ave	3,370	3,956	876,189	415,357	0.50	0.36	441,816	7.3	3,203,163	434,373	6.53	2,834,286	151,536	6.1	924,368	263,822	5.49	1,448,382
17	Traveler Street - between Washington Street and Harrison Ave	1,745	3,637	453,741	381,861	0.50	0.36	228,797	0.0	0	224,943	0.00	0	139,315	0.0	0	242,546	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	8,004	7,529	2,080,949	790,519	0.50	0.36	1,049,312	33.3	34,942,092	1,031,637	29.97	30,918,155	288,407	29.5	8,507,994	502,112	26.55	13,331,084
19	East Berkeley Street - between Harrison Ave and Albany Street	14,443	11,740	3,755,096	1,232,674	0.50	0.36	1,893,495	21.5	40,615,478	1,861,600	19.31	35,938,192	449,719	11.3	5,059,336	782,955	10.13	7,927,419
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	18,114	10,272	4,709,516	1,078,589	0.50	0.36	2,374,759	6.0	14,129,816	2,334,757	5.36	12,502,624	393,504	4.8	1,869,144	685,086	4.28	2,928,741
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	12,637	10,272	3,285,709	1,078,589	0.50	0.36	1,656,809	5.4	8,863,926	1,628,900	4.82	7,843,154	393,504	4.3	1,692,067	685,086	3.87	2,651,281
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	22,386	12,505	5,820,398	1,313,065	0.50	0.36	2,934,918	0.0	0	2,885,480	0.00	0	479,048	0.0	0	834,017	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	12,758	8,103	3,317,001	850,813	0.50	0.36	1,672,588	19.3	32,280,942	1,644,414	17.37	28,563,463	310,404	16.8	5,214,782	540,409	15.12	8,170,986
24	Harrison Ave- between East Berkeley Street and Mass. Ave	11,133	7,018	2,894,553	736,924	0.50	0.36	1,459,569	17.6	25,688,422	1,434,984	15.84	22,730,139	268,854	12.5	3,360,670	468,071	11.25	5,265,797
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,425	4,849	2,190,472	509,148	0.50	0.36	1,104,539	0.0	0	1,085,933	0.00	0	185,753	0.0	0	323,394	0.00	0
26	East Berkeley Street - west of Harrison Ave	12,216	10,208	3,176,185	1,071,890	0.50	0.36	1,601,582	0.0	0	1,574,604	0.00	0	391,060	0.0	0	680,830	0.00	0
27	Site Drive North - Albany Street	120	128	31,292	13,399	0.50	0.36	15,779	2.3	35,503	15,513	2.03	31,415	4,888	6.4	31,285	8,510	5.76	49,020
28	Site Drive South - Harrison Ave	963	1,340	250,340	140,686	0.50	0.36	126,233	4.7	593,295	124,107	4.23	524,971	51,327	4.6	236,102	89,359	4.14	369,946
29	Site Drive -Traveler Street	4,850	5,934	1,261,086	623,036	0.50	0.36	635,899	28.2	17,932,349	625,187	25.38	15,867,256	227,303	16.5	3,750,508	395,733	14.85	5,876,630
30	Site Drive - No Data	0	0	0	0	0.50	0.36	0	0.0	0	0	0.00	0	0	0.0	0	0	0.00	0

Freeway	0	Freeway	0
Arterial	811,810,308	Arterial	718,322,091

**Weekday Idle Emission Parameters**

**Weekend Idle Emission Parameters**

Pollutant	Peak Period Emissions			Off-Peak Period Emissions			Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/year)	(tons/year)	(g/sec)	(g/year)	(tons/year)	(g/sec)	(g/year)	(tons/year)	(g/sec)	(g/year)	(tons/year)
Freeway	0.3930	0	0.00	0.3930	0	0.00	0.3930	0	0.00	0.3930	0	0.00
Arterial	0.3930	319,075,277	351.72	0.3930	282,330,512	311.22	0.3930	29,680,959	32.72	0.3930	46,506,774	51.26
Total			351.72			311.22			32.72			51.26



## Herald Square, Boston MA

### 2016 No Build Condition

Link No.	Description	Roadway		Weekday Peak Traffic Data			Weekday Off-Peak Traffic Data				Weekend Peak Traffic Data				Weekend Off-Peak Traffic Data				
		Link Length type	(miles)	Annual Weekday Peak VMT (veh-miles)	Wkdy Speed Peak (mph)	E.M.F. CO2 (g/veh-mi)	Emissions CO2 (Kg/year)	Annual Weekday Off-Peak VMT (veh-miles)	Speed Off-Peak (mph)	E.M.F. CO2 (g/veh-mi)	Emissions CO2 (Kg/year)	Annual Weekend Peak VMT (veh-miles)	Wkend Speed Peak (mph)	E.M.F. CO2 (g/veh-mi)	Emissions CO2 (Kg/year)	Annual Weekend Off-Peak VMT (veh-miles)	Wkend Speed Off-Peak (mph)	E.M.F. CO2 (g/veh-mi)	Emissions CO2 (Kg/year)
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	970,416	20	565.98	549236.29	954,070	30	565.98	539984.61	173,362	20	565.98	98119.25	301,821	30	565.98	170824.43
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	322,841	20	565.98	182721.54	317,403	30	565.98	179643.66	76,526	20	565.98	43311.91	133,230	30	565.98	75405.51
3	Washington Street - between Herald Street and Mass Ave	2	0.97	1,010,180	20	565.98	571741.58	993,164	30	565.98	562110.80	272,642	20	565.98	154309.91	474,666	30	565.98	268651.71
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	189,350	20	565.98	107168.06	186,160	30	565.98	105362.85	37,151	20	565.98	21026.54	64,679	30	565.98	36606.96
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	277,713	20	565.98	157179.82	273,035	30	565.98	154532.18	65,600	20	565.98	37128.45	114,209	30	565.98	64640.18
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	63,432	20	565.98	35901.30	62,364	30	565.98	35296.55	13,345	20	565.98	7552.95	23,233	30	565.98	13149.60
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	252,466	20	565.98	142890.74	248,213	30	565.98	140483.80	43,505	20	565.98	24623.19	75,742	30	565.98	42868.67
8	Albany Street - north of Herald Street	2	0.21	531,836	20	565.98	301008.28	522,877	30	565.98	295937.90	96,494	20	565.98	54613.67	167,995	30	565.98	95081.75
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	151,716	20	565.98	85868.41	149,161	30	565.98	84421.98	26,836	20	565.98	15188.91	46,722	30	565.98	26443.71
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	391,401	20	565.98	221525.30	384,808	30	565.98	217793.79	62,643	20	565.98	35454.62	109,061	30	565.98	61726.07
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	121,499	20	565.98	68766.17	119,453	30	565.98	67607.83	20,017	20	565.98	11329.43	34,850	30	565.98	19724.41
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	306,510	20	565.98	173478.29	301,347	30	565.98	170556.11	45,167	20	565.98	25563.85	78,636	30	565.98	44506.35
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	196,292	20	565.98	111097.55	192,986	30	565.98	109226.15	39,106	20	565.98	22133.20	68,083	30	565.98	38533.64
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	147,061	20	565.98	83233.86	144,584	30	565.98	81831.81	23,464	20	565.98	13279.92	40,850	30	565.98	23120.18
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	1,530,418	20	565.98	866185.82	1,504,638	30	565.98	851595.23	243,532	20	565.98	137834.51	423,987	30	565.98	239968.23
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	30,375	20	565.98	17191.54	29,863	30	565.98	16901.96	10,265	20	565.98	5809.97	17,872	30	565.98	10115.08
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	15,779	20	565.98	8930.67	15,513	30	565.98	8780.24	10,363	20	565.98	5865.30	18,042	30	565.98	10211.41
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	71,006	20	565.98	40188.02	69,810	30	565.98	39511.07	16,620	20	565.98	9406.61	28,935	30	565.98	16376.80
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	183,038	20	565.98	103595.79	179,955	30	565.98	101850.75	42,528	20	565.98	24069.86	74,040	30	565.98	41905.33
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	133,491	20	565.98	75553.48	131,243	30	565.98	74280.81	20,384	20	565.98	11536.93	35,488	30	565.98	20085.66
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	79,290	20	565.98	44876.62	77,955	30	565.98	44120.69	18,453	20	565.98	10444.10	32,127	30	565.98	18183.06
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	614,676	20	565.98	347894.31	604,322	30	565.98	342034.15	100,087	20	565.98	56647.16	174,250	30	565.98	98622.03
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	416,175	20	565.98	235546.46	409,164	30	565.98	231578.76	76,990	20	565.98	43574.74	134,038	30	565.98	75863.10
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	1,137,517	20	565.98	643812.10	1,118,356	30	565.98	632967.32	195,994	20	565.98	110928.84	341,224	30	565.98	193125.78
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	83,945	20	565.98	47511.17	82,531	30	565.98	46710.86	13,296	20	565.98	7525.29	23,148	30	565.98	13101.44
26	East Berkeley Street - west of Harrison Ave	2	0.30	466,273	20	565.98	263901.34	458,419	30	565.98	259456.02	112,185	20	565.98	63494.62	195,313	30	565.98	110543.37
27	Site Drive North - Albany Street	2	0.02	0	20	565.98	0.00	0	30	565.98	0.00	0	20	565.98	0.00	0	30	565.98	0.00
28	Site Drive South - Harrison Ave	2	0.02	0	20	565.98	0.00	0	30	565.98	0.00	0	20	565.98	0.00	0	30	565.98	0.00
29	Site Drive -Traveler Street	2	0.02	0	20	565.98	0.00	0	30	565.98	0.00	0	20	565.98	0.00	0	30	565.98	0.00
30	Site Drive - No Data	2	0.02	0	20	565.98	0.00	0	30	565.98	0.00	0	20	565.98	0.00	0	30	565.98	0.00

#### Mesoscale CO2 Emissions (tons/year)

15919.8

#### Weekday CO2 Emission Inventory

VMT Emissions (tons/year)	Peak	Off-Peak
VMT = 19,226,090	<b>6048.4</b>	<b>5946.5</b>
<b>Idle Emissions (tons/year)</b>	<b>320.04</b>	<b>283.2</b>
	<b>TOTAL</b>	<b>12598.1</b>

#### Weekend CO2 Emission Inventory

VMT Emissions (tons/year)	Peak	Off-Peak
VMT = 5,088,799	<b>1158.3</b>	<b>2016.6</b>
<b>Idle Emissions (tons/year)</b>	<b>57.23</b>	<b>89.7</b>
	<b>TOTAL</b>	<b>3321.7</b>

### Herald Square, Boston MA

#### 2016 No Build Condition

Link No.	Description	Seasonally Adjusted Wkdy ADT (veh/day)	Seasonally Adjusted Wknd ADT (veh/day)	Annual Weekday Trips (veh/day)	Annual Weekend Trips (veh/day)	Wkdy Peak Period Factor	Wknd Peak Period Factor	Weekday Peak Traffic Data			Weekday Off-Peak Traffic Data			Weekend Peak Traffic Data			Weekend Off-Peak Traffic Data		
								Period Volume (vehicles)	Wkday Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Wkday Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Wkend Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Wkend Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	18,053	11,038	4,693,870	1,158,981	0.50	0.36	2,366,869	28.1	66,509,029	2,327,000	25.29	58,849,837	422,833	28.1	11,881,618	736,148	25.29	18,617,179
2	Washington Street - between Herald Street and Kneeland Street	7,943	6,444	2,065,303	676,631	0.50	0.36	1,041,423	5.6	5,779,895	1,023,880	5.00	5,114,281	246,856	5.6	1,370,053	429,774	5.00	2,146,722
3	Washington Street - between Herald Street and Mass Ave	7,943	7,337	2,065,303	770,421	0.50	0.36	1,041,423	6.8	7,029,602	1,023,880	6.08	6,220,072	281,074	6.8	1,897,251	489,347	6.08	2,972,782
4	Herald Street - between Washington Street and Harrison Ave	18,053	12,123	4,693,870	1,272,870	0.50	0.36	2,366,869	18.6	43,905,426	2,327,000	16.70	38,849,270	464,383	18.6	8,614,314	808,486	16.70	13,497,675
5	Harrison Ave - between Herald Street and Kneeland Street	4,814	3,892	1,251,699	408,658	0.50	0.36	631,165	13.8	8,678,521	620,533	12.38	7,679,101	149,092	13.8	2,050,009	259,567	12.38	3,212,136
6	Harrison Ave - between Herald Street and Traveler Street	8,064	5,806	2,096,595	609,638	0.50	0.36	1,057,202	16.3	17,232,387	1,039,393	14.67	15,247,902	222,415	16.3	3,625,369	387,222	14.67	5,680,551
7	Herald Street - between Harrison Ave and Albany Street	19,257	11,357	5,006,794	1,192,478	0.50	0.36	2,524,661	60.0	151,479,638	2,482,134	54.00	134,035,217	435,054	60.0	26,103,240	757,424	54.00	40,900,885
8	Albany Street - north of Herald Street	19,317	11,995	5,022,441	1,259,471	0.50	0.36	2,532,550	13.4	33,936,173	2,489,890	12.06	30,028,077	459,495	13.4	6,157,236	799,976	12.06	9,647,707
9	Albany Street - between Herald Street and I-93 SB On-ramp	38,574	23,352	10,029,235	2,451,949	0.50	0.36	5,057,211	2.6	12,895,888	4,972,024	2.30	11,410,795	894,549	2.0	1,789,098	1,557,399	1.80	2,803,319
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	27,140	14,866	7,056,451	1,560,940	0.50	0.36	3,558,194	8.0	28,287,639	3,498,257	7.16	25,030,030	569,481	8.0	4,527,372	991,459	7.16	7,093,891
11	Albany Street between Traveler Street and East Berkeley Street	13,239	7,465	3,442,171	783,820	0.50	0.36	1,735,704	12.3	21,262,376	1,706,467	11.03	18,813,797	285,962	12.3	3,503,040	497,857	11.03	5,488,876
12	Albany Street - between East Berkeley Street and Albany Street	11,133	5,615	2,894,553	589,540	0.50	0.36	1,459,569	0.0	0	1,434,984	0.00	0	215,083	0.0	0	374,457	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	18,715	12,761	4,865,978	1,339,863	0.50	0.36	2,453,655	0.0	0	2,412,324	0.00	0	488,825	0.0	0	851,038	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	14,021	7,656	3,645,572	803,918	0.50	0.36	1,838,269	16.6	30,515,258	1,807,304	14.94	27,001,115	293,295	16.6	4,868,694	510,623	14.94	7,628,704
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	22,025	11,995	5,726,521	1,259,471	0.50	0.36	2,887,581	60.0	173,254,836	2,838,940	54.00	153,302,779	459,495	60.0	27,569,714	799,976	54.00	43,198,687
16	Mullins Way - between Washington Street and Harrison Ave	3,310	3,828	860,543	401,959	0.50	0.36	433,926	9.8	4,230,779	426,617	8.78	3,743,562	146,647	6.1	887,217	255,311	5.45	1,390,171
17	Traveler Street - between Washington Street and Harrison Ave	1,504	3,382	391,156	355,064	0.50	0.36	197,239	0.0	0	193,917	0.00	0	129,539	0.0	0	225,525	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	5,416	4,339	1,408,161	455,553	0.50	0.36	710,061	33.0	23,396,503	698,100	29.66	20,702,158	166,200	33.0	5,476,303	289,353	29.66	8,580,761
19	East Berkeley Street - between Harrison Ave and Albany Street	13,961	11,102	3,629,926	1,165,681	0.50	0.36	1,830,379	19.9	36,333,022	1,799,547	17.87	32,148,905	425,278	19.9	8,441,759	740,403	17.87	13,227,300
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	16,970	8,869	4,412,237	931,205	0.50	0.36	2,224,857	5.8	12,904,172	2,187,380	5.22	11,418,125	339,733	5.8	1,970,452	591,471	5.22	3,087,481
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	12,096	9,634	3,144,893	1,011,596	0.50	0.36	1,585,802	4.7	7,373,981	1,559,090	4.19	6,524,792	369,063	4.7	1,716,141	642,534	4.19	2,689,003
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	22,326	12,442	5,804,752	1,306,366	0.50	0.36	2,927,028	0.0	0	2,877,724	0.00	0	476,604	0.0	0	829,762	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	12,698	8,039	3,301,355	844,113	0.50	0.36	1,664,698	19.3	32,045,439	1,636,657	17.33	28,355,080	307,960	19.3	5,928,222	536,154	17.33	9,288,867
24	Harrison Ave - between East Berkeley Street and Mass. Ave	10,712	6,316	2,785,029	663,232	0.50	0.36	1,404,342	15.4	21,626,874	1,380,687	13.86	19,136,320	241,968	15.4	3,726,311	421,264	13.86	5,838,716
25	I-90 EB On-Ramp - north of Traveler Street to I-90	8,004	4,339	2,080,949	455,553	0.50	0.36	1,049,312	0.0	0	1,031,637	0.00	0	166,200	0.0	0	289,353	0.00	0
26	East Berkeley Street - west of Harrison Ave	11,855	9,762	3,082,308	1,024,995	0.50	0.36	1,554,244	0.0	0	1,528,064	0.00	0	373,951	0.0	0	651,044	0.00	0
27	Site Drive North - Albany Street	0	0	0	0	0.50	0.36	0	2.6	0	0	2.30	0	0	62.0	0	0	55.80	0
28	Site Drive South - Harrison Ave	0	0	0	0	0.50	0.36	0	0.0	0	0	0.00	0	0	0.0	0	0	0.00	0
29	Site Drive -Traveler Street	0	0	0	0	0.50	0.36	0	0.0	0	0	0.00	0	0	0.0	0	0	0.00	0
30	Site Drive - No Data	0	0	0	0	0.50	0.36	0	0.0	0	0	0.00	0	0	0.0	0	0	0.00	0

Freeway	0	0	Freeway	0
Arterial	738,677,438	653,611,215	Arterial	132,103,415

#### Weekday Idle Emission Parameters

#### Weekend Idle Emission Parameters

Pollutant	Peak Period Emissions			Off-Peak Period Emissions			Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/year)	(tons/year)	(g/sec)	(g/year)	(tons/year)	(g/sec)	(g/year)	(tons/year)	(g/sec)	(g/year)	(tons/year)
Freeway	0.3930	0	0.00	0.3930	0	0.00	0.3930	0	0.00	0.3930	0	0.00
Arterial	0.3930	290,331,011	320.04	0.3930	256,896,441	283.18	0.3930	51,922,146	57.23	0.3930	81,356,250	89.68
Total			320.04			283.18			57.23			89.68

## Herald Square, Boston MA

### 2011 Existing Condition

Link No.	Roadway Description	Weekday Peak Traffic Data					Weekday Off-Peak Traffic Data					Weekend Peak Traffic Data					Weekend Off-Peak Traffic Data				
		Annual Peak VMT	Wkdy Speed	E.M.F.	Emissions	Annual Off-Peak VMT	Wkdy Speed	E.M.F.	Emissions	Annual Peak VMT	Wknd Speed	E.M.F.	Emissions	Annual Off-Peak VMT	Wknd Speed	E.M.F.	Emissions				
	Link Length Type (miles)	Peak VMT (veh-miles)	Peak (mph)	CO2 (g/veh-mi)	CO2 (Kg/year)	Off-Peak VMT (veh-miles)	Off-Peak (mph)	CO2 (g/veh-mi)	CO2 (Kg/year)	Peak VMT (veh-miles)	Peak (mph)	CO2 (g/veh-mi)	CO2 (Kg/year)	Off-Peak VMT (veh-miles)	Off-Peak (mph)	CO2 (g/veh-mi)	CO2 (Kg/year)				
1	Herald Street - between Kneeland Street and Washington Street	2	0.41	896,018	20	559.89	501671.43	880,925	30	559.89	493220.95	161,337	20	559.89	90330.75	280,885	30	559.89	157264.75		
2	Washington Street - between Herald Street and Kneeland Street	2	0.31	305,721	20	559.89	171169.92	300,571	30	559.89	168286.62	72,737	20	559.89	40724.79	126,634	30	559.89	70901.36		
3	Washington Street - between Herald Street and Mass Ave	2	0.97	956,610	20	559.89	535596.20	940,496	30	559.89	526574.28	258,417	20	559.89	144685.20	449,901	30	559.89	251895.20		
4	Herald Street - between Washington Street and Harrison Ave	2	0.08	174,833	20	559.89	97887.11	171,888	30	559.89	96238.23	34,609	20	559.89	19377.12	60,253	30	559.89	33735.33		
5	Harrison Ave - between Herald Street and Kneeland Street	2	0.44	249,941	20	559.89	139939.69	245,731	30	559.89	137582.46	58,072	20	559.89	32514.14	101,103	30	559.89	56606.73		
6	Harrison Ave - between Herald Street and Traveler Street	2	0.06	57,278	20	559.89	32069.51	56,313	30	559.89	31529.31	11,585	20	559.89	6486.41	20,170	30	559.89	11292.76		
7	Herald Street - between Harrison Ave and Albany Street	2	0.10	235,109	20	559.89	131635.19	231,149	30	559.89	129417.84	41,061	20	559.89	22989.80	71,487	30	559.89	40024.96		
8	Albany Street - north of Herald Street	2	0.21	487,102	20	559.89	272723.38	478,897	30	559.89	268129.45	84,689	20	559.89	47416.46	147,442	30	559.89	82551.49		
9	Albany Street - between Herald Street and I-93 SB On-ramp	2	0.03	140,119	20	559.89	78451.04	137,758	30	559.89	77129.56	24,417	20	559.89	13670.72	42,509	30	559.89	23800.56		
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	2	0.11	360,159	20	559.89	201649.21	354,092	30	559.89	198252.50	55,653	20	559.89	31159.39	96,891	30	559.89	54248.12		
11	Albany Street between Traveler Street and East Berkeley Street	2	0.07	107,693	20	559.89	60295.98	105,879	30	559.89	59280.32	16,425	20	559.89	9195.92	28,595	30	559.89	16009.99		
12	Albany Street - between East Berkeley Street and Albany Street	2	0.21	280,001	20	559.89	156769.56	275,284	30	559.89	154128.83	39,008	20	559.89	21840.31	67,913	30	559.89	38023.71		
13	I-93 NB On-Ramp - north of Traveler Street to I-93	2	0.08	182,407	20	559.89	102127.70	179,334	30	559.89	100407.40	36,173	20	559.89	20252.92	62,977	30	559.89	35260.09		
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	0.08	134,438	20	559.89	75270.59	132,174	30	559.89	74002.69	20,922	20	559.89	11713.85	36,424	30	559.89	20393.67		
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	0.53	1,400,792	20	559.89	784289.53	1,377,196	30	559.89	771078.46	239,646	20	559.89	134175.58	417,221	30	559.89	233598.07		
16	Mullins Way - between Washington Street and Harrison Ave	2	0.07	28,166	20	559.89	15769.72	27,691	30	559.89	15504.08	9,581	20	559.89	5364.29	16,680	30	559.89	9339.16		
17	Traveler Street - between Washington Street and Harrison Ave	2	0.08	14,517	20	559.89	8127.81	14,272	30	559.89	7990.90	9,776	20	559.89	5473.76	17,021	30	559.89	9529.75		
18	Traveler Street - between Harrison Ave and Albany Street	2	0.10	55,227	20	559.89	30921.02	54,297	30	559.89	30400.16	11,732	20	559.89	6568.51	20,425	30	559.89	11435.70		
19	East Berkeley Street - between Harrison Ave and Albany Street	2	0.10	168,048	20	559.89	94088.24	165,217	30	559.89	92503.36	38,373	20	559.89	21484.51	66,806	30	559.89	37404.28		
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	2	0.06	124,024	20	559.89	69439.77	121,935	30	559.89	68270.08	18,624	20	559.89	10427.52	32,425	30	559.89	18154.18		
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	0.05	73,767	20	559.89	41301.65	72,525	30	559.89	40605.93	16,742	20	559.89	9373.82	29,148	30	559.89	16319.70		
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.21	578,226	20	559.89	323743.06	568,486	30	559.89	318289.72	94,441	20	559.89	52876.54	164,421	30	559.89	92057.41		
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	0.25	388,561	20	559.89	217551.45	382,016	30	559.89	213886.87	70,269	20	559.89	39342.66	122,337	30	559.89	68495.10		
24	Harrison Ave- between East Berkeley Street and Mass. Ave	2	0.81	1,048,050	20	559.89	586792.57	1,030,396	30	559.89	576908.26	172,237	20	559.89	96433.99	299,863	30	559.89	167890.42		
25	I-90 EB On-Ramp - north of Traveler Street to I-90	2	0.08	76,371	20	559.89	42759.35	75,085	30	559.89	42039.08	11,536	20	559.89	6459.04	20,084	30	559.89	11245.11		
26	East Berkeley Street - west of Harrison Ave	2	0.30	430,770	20	559.89	241183.94	423,514	30	559.89	237121.28	102,653	20	559.89	57474.50	178,718	30	559.89	100062.41		
27	Site Drive North - Albany Street	2	0.02	0	20	559.89	0.00	0	30	559.89	0.00	0	20	559.89	0.00	0	30	559.89	0.00		
28	Site Drive South - Harrison Ave	2	0.02	0	20	559.89	0.00	0	30	559.89	0.00	0	20	559.89	0.00	0	30	559.89	0.00		
29	Site Drive -Traveler Street	2	0.02	0	20	559.89	0.00	0	30	559.89	0.00	0	20	559.89	0.00	0	30	559.89	0.00		
30	Site Drive - No Data	2	0.02	0	20	559.89	0.00	0	30	559.89	0.00	0	20	559.89	0.00	0	30	559.89	0.00		

### Mesoscale CO2 Emissions (tons/year)

14451.2

### Weekday CO2 Emission Inventory

VTM Emissions (tons/year)	Peak	Off-Peak
VTM = 17,757,065	5526.1	5433.0
<b>Idle Emissions (tons/year)</b>	<b>Peak</b>	<b>Off-Peak</b>
	254.85	225.5
	<b>TOTAL</b>	<b>11439.5</b>

### Weekend CO2 Emission Inventory

VTM Emissions (tons/year)	Peak	Off-Peak
VTM = 4,689,050	1055.8	1838.1
<b>Idle Emissions (tons/year)</b>	<b>Peak</b>	<b>Off-Peak</b>
	45.86	71.9
	<b>TOTAL</b>	<b>3011.7</b>

**Herald Square, Boston MA**

**2011 Existing Condition**

Link No.	Description	Seasonally Adjusted Wkdy ADT (veh/day)	Seasonally Adjusted Wknd ADT (veh/day)	Annual Weekday Trips (veh/day)	Annual Weekend Trips (veh/day)	Wkdy Peak Period Factor	Wknd Peak Period Factor	Weekday Peak Traffic Data			Weekday Off-Peak Traffic Data			Weekend Peak Traffic Data			Weekend Off-Peak Traffic Data		
								Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)	Period Volume (vehicles)	Average Delay (sec)	Adjusted Delay (veh-sec)
1	Herald Street - between Kneeland Street and Washington Street	16,669	10,272	4,334,006	1,078,589	0.50	0.36	2,185,409	20.5	44,691,621	2,148,597	18.41	39,544,927	393,504	20.5	8,047,155	685,086	18.41	12,609,000
2	Washington Street - between Herald Street and Kneeland Street	7,522	6,125	1,955,779	643,134	0.50	0.36	986,196	5.6	5,473,385	969,583	5.00	4,843,069	234,636	5.6	1,302,229	408,498	5.00	2,040,449
3	Washington Street - between Herald Street and Mass Ave	7,522	6,955	1,955,779	730,225	0.50	0.36	986,196	6.7	6,558,200	969,583	5.99	5,802,957	266,409	6.7	1,771,623	463,816	5.99	2,775,937
4	Herald Street - between Washington Street and Harrison Ave	16,669	11,293	4,334,006	1,185,778	0.50	0.36	2,185,409	14.8	32,234,788	2,148,597	13.28	28,522,624	432,610	14.8	6,380,996	753,169	13.28	9,998,313
5	Harrison Ave - between Herald Street and Kneeland Street	4,333	3,445	1,126,529	361,763	0.50	0.36	568,049	13.6	7,697,059	558,480	12.20	6,810,664	131,983	13.6	1,788,365	229,780	12.20	2,802,170
6	Harrison Ave - between Herald Street and Traveler Street	7,282	5,040	1,893,194	529,246	0.50	0.36	954,637	16.3	15,512,856	938,557	14.63	13,726,393	193,086	16.3	3,137,644	336,160	14.63	4,916,340
7	Herald Street - between Harrison Ave and Albany Street	17,933	10,719	4,662,577	1,125,485	0.50	0.36	2,351,090	47.8	112,264,558	2,311,487	42.98	99,336,152	410,613	47.8	19,606,760	714,872	42.98	30,721,620
8	Albany Street - north of Herald Street	17,692	10,527	4,599,992	1,105,387	0.50	0.36	2,319,532	12.3	28,530,243	2,280,460	11.07	25,244,695	403,280	12.3	4,960,349	702,106	11.07	7,772,317
9	Albany Street - between Herald Street and I-93 SB On-Ramp	35,625	21,246	9,262,569	2,230,871	0.50	0.36	4,670,622	2.4	10,975,962	4,591,947	2.12	9,711,968	813,893	2.0	1,627,786	1,416,978	1.80	2,550,561
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	24,974	13,207	6,493,186	1,386,758	0.50	0.36	3,274,169	5.8	18,990,182	3,219,017	5.22	16,803,269	505,934	5.8	2,934,415	880,824	5.22	4,597,903
11	Albany Street between Traveler Street and East Berkeley Street	11,735	6,125	3,051,015	643,134	0.50	0.36	1,538,465	12.0	18,384,658	1,512,550	10.76	16,267,477	234,636	12.0	2,803,899	408,498	10.76	4,393,398
12	Albany Street - between East Berkeley Street and Albany Street	10,170	4,849	2,644,213	509,148	0.50	0.36	1,333,336	0.0	0	1,310,877	0.00	0	185,753	0.0	0	323,394	0.00	0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	17,391	11,804	4,521,761	1,239,373	0.50	0.36	2,280,084	0.0	0	2,241,677	0.00	0	452,163	0.0	0	787,210	0.00	0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	12,818	6,827	3,332,647	716,827	0.50	0.36	1,680,477	16.1	26,971,660	1,652,170	14.45	23,865,599	261,521	16.1	4,197,416	455,305	14.45	6,576,885
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	20,160	11,804	5,241,488	1,239,373	0.50	0.36	2,643,004	57.4	151,708,436	2,598,484	51.66	134,237,666	452,163	57.4	25,954,149	787,210	51.66	40,667,275
16	Mullins Way - between Washington Street and Harrison Ave	3,069	3,573	797,958	375,162	0.50	0.36	402,368	8.8	3,520,718	395,590	7.88	3,115,272	136,871	5.9	800,695	238,291	5.27	1,254,600
17	Traveler Street - between Washington Street and Harrison Ave	1,384	3,190	359,863	334,966	0.50	0.36	181,460	0.0	0	178,403	0.00	0	122,206	0.0	0	212,759	0.00	0
18	Traveler Street - between Harrison Ave and Albany Street	4,212	3,063	1,095,236	321,567	0.50	0.36	552,270	33.1	18,280,121	542,967	29.79	16,174,979	117,318	33.1	3,883,224	204,249	29.79	6,084,581
19	East Berkeley Street - between Harrison Ave and Albany Street	12,818	10,017	3,332,647	1,051,792	0.50	0.36	1,680,477	17.3	29,072,256	1,652,170	15.57	25,724,290	383,727	17.3	6,638,484	668,065	15.57	10,401,769
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	15,767	8,103	4,099,313	850,813	0.50	0.36	2,067,066	5.6	11,575,569	2,032,247	5.04	10,242,524	310,404	5.6	1,738,261	540,409	5.04	2,723,662
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	11,253	8,741	2,925,845	917,806	0.50	0.36	1,475,349	4.0	5,901,394	1,450,497	3.60	5,221,789	334,845	4.0	1,339,380	582,961	3.60	2,098,660
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	21,002	11,740	5,460,535	1,232,674	0.50	0.36	2,753,458	0.0	0	2,707,077	0.00	0	449,719	0.0	0	782,955	0.00	0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	11,855	7,337	3,082,308	770,421	0.50	0.36	1,554,244	18.7	29,064,367	1,528,064	16.83	25,717,309	281,074	18.7	5,256,088	489,347	16.83	8,235,707
24	Harrison Ave- between East Berkeley Street and Mass. Ave	9,869	5,551	2,565,982	582,840	0.50	0.36	1,293,889	13.3	17,208,718	1,272,093	11.97	15,226,959	212,639	13.3	2,828,095	370,202	11.97	4,431,312
25	I-90 EB On-Ramp - north of Traveler Street to I-90	7,282	3,764	1,893,194	395,259	0.50	0.36	954,637	0.0	0	938,557	0.00	0	144,203	0.0	0	251,056	0.00	0
26	East Berkeley Street - west of Harrison Ave	10,952	8,932	2,847,614	937,904	0.50	0.36	1,435,901	0.0	0	1,411,714	0.00	0	342,177	0.0	0	595,727	0.00	0
27	Site Drive North - Albany Street	0	0	0	0	0.50	0.36	0	2.4	0	0	2.12	0	0	62.0	0	0	55.80	0
28	Site Drive South - Harrison Ave	0	0	0	0	0.50	0.36	0	0.0	0	0	0.00	0	0	0.0	0	0	0.00	0
29	Site Drive -Traveler Street	0	0	0	0	0.50	0.36	0	0.0	0	0	0.00	0	0	0.0	0	0	0.00	0
30	Site Drive - No Data	0	0	0	0	0.50	0.36	0	0.0	0	0	0.00	0	0	0.0	0	0	0.00	0

Freeway	0	0	0
Arterial	<b>594,616,752</b>	526,140,583	<b>106,997,011</b>

**Weekday Idle Emission Parameters**

**Weekend Idle Emission Parameters**

Pollutant	Peak Period Emissions			Off-Peak Period Emissions			Peak Period Emissions			Off-Peak Period Emissions		
	(g/sec)	(g/year)	(tons/year)	(g/sec)	(g/year)	(tons/year)	(g/sec)	(g/year)	(tons/year)	(g/sec)	(g/year)	(tons/year)
Freeway	0.3888	0	<b>0.00</b>	0.3888	0	<b>0.00</b>	0.3888	0	<b>0.00</b>	0.3888	0	<b>0.00</b>
Arterial	0.3888	231,194,426	<b>254.85</b>	0.3888	204,570,035	<b>225.50</b>	0.3888	41,601,775	<b>45.86</b>	0.3888	65,185,372	<b>71.85</b>
Total			<b>254.85</b>			<b>225.50</b>			<b>45.86</b>			<b>71.85</b>

### Herald Square, Boston MA

Weekend Link Roadway No. Description	Roadway Type	2011 Existing Condition				2016 No Build Condition				2016 Build Condition				2016 Build with Mitigation Condition			
		Peak		Off Peak		Peak		Off Peak		Peak		Off Peak		Peak		Off Peak	
		Average Speed (mph)	CO2 EMF (g-veh/mi)	Average Speed (mph)	CO2 EMF (g-veh/mi)	Average Speed (mph)	CO2 EMF (g-veh/mi)	Average Speed (mph)	CO2 EMF (g-veh/mi)	Average Speed (mph)	CO2 EMF (g-veh/mi)	Average Speed (mph)	CO2 EMF (g-veh/mi)	Average Speed (mph)	CO2 EMF (g-veh/mi)	Average Speed (mph)	CO2 EMF (g-veh/mi)
1 Herald Street - between Kneeland Street and Washington Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
2 Washington Street - between Herald Street and Kneeland Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
3 Washington Street - between Herald Street and Mass Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
4 Herald Street - between Washington Street and Harrison Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
5 Harrison Ave - between Herald Street and Kneeland Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
6 Harrison Ave - between Herald Street and Traveler Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
7 Herald Street - between Harrison Ave and Albany Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
8 Albany Street - north of Herald Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
9 Albany Street - between Herald Street and I-93 SB On-ramp	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
10 Albany Street - between I-93 SB On-Ramp and Traveler Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
11 Albany Street - between Traveler Street and East Berkeley Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
12 Albany Street - between East Berkeley Street and Albany Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
13 I-93 NB On-Ramp - north of Traveler Street to I-93	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
14 I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
15 I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
16 Mullins Way - between Washington Street and Harrison Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
17 Traveler Street - between Washington Street and Harrison Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
18 Traveler Street - between Harrison Ave and Albany Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
19 East Berkeley Street - between Harrison Ave and Albany Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
20 Traveler Street - between Albany Street and I-93 NB On-Ramp	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
21 East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
22 Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
23 West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
24 Harrison Ave - between East Berkeley Street and Mass. Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
25 I-90 EB On-Ramp - north of Traveler Street to I-90	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
26 East Berkeley Street - west of Harrison Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
27 Site Drive North - Albany Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
28 Site Drive South - Harrison Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
29 Site Drive -Traveler Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
30 Site Drive - No Data	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98

## Herald Square, Boston MA

Weekday	Link Roadway No. Description	Roadway Type	2011 Existing Condition				2016 No Build Condition				2016 Build Condition				2016 Build with Mitigation Condition			
			Peak		Off Peak		Peak		Off Peak		Peak		Off Peak		Peak		Off Peak	
			Average Speed (mph)	CO2 EMF (g-veh/mi)	Average Speed (mph)	CO2 EMF (g-veh/mi)	Average Speed (mph)	CO2 EMF (g-veh/mi)	Average Speed (mph)	CO2 EMF (g-veh/mi)	Average Speed (mph)	CO2 EMF (g-veh/mi)	Average Speed (mph)	CO2 EMF (g-veh/mi)	Average Speed (mph)	CO2 EMF (g-veh/mi)	Average Speed (mph)	CO2 EMF (g-veh/mi)
	1 Herald Street - between Kneeland Street and Washington Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	2 Washington Street - between Herald Street and Kneeland Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	3 Washington Street - between Herald Street and Mass Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	4 Herald Street - between Washington Street and Harrison Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	5 Harrison Ave - between Herald Street and Kneeland Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	6 Harrison Ave - between Herald Street and Traveler Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	7 Herald Street - between Harrison Ave and Albany Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	8 Albany Street - north of Herald Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	9 Albany Street - between Herald Street and I-93 SB On-ramp	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	10 Albany Street - between I-93 SB On-Ramp and Traveler Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	11 Albany Street between Traveler Street and East Berkeley Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	12 Albany Street - between East Berkeley Street and Albany Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	13 I-93 NB On-Ramp - north of Traveler Street to I-93	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	14 I-93 NB On-Ramp - between Traveler Street and West 4th Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	15 I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	16 Mullins Way - between Washington Street and Harrison Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	17 Traveler Street - between Washington Street and Harrison Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	18 Traveler Street - between Harrison Ave and Albany Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	19 East Berkeley Street - between Harrison Ave and Albany Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	20 Traveler Street - between Albany Street and I-93 NB On-Ramp	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	21 East Berkeley Street - between Albany Street and I-93 NB On-Ramp	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	22 Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	23 West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	24 Harrison Ave- between East Berkeley Street and Mass. Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	25 I-90 EB On-Ramp - north of Traveler Street to I-90	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	26 East Berkeley Street - west of Harrison Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	27 Site Drive North - Albany Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	28 Site Drive South - Harrison Ave	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	29 Site Drive -Traveler Street	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98
	30 Site Drive - No Data	2	20	559.89	30	559.89	20	565.98	30	565.98	20	565.98	30	565.98	20	565.98	30	565.98

## Herald Square, Boston MA

Link No.	Roadway Description	2011 Existing Condition		2016 No Build Condition			2016 Build Condition				2016 Build with Mitigation Condition				
		S.A.F.	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Traffic Increase (no-build)	Roadway ADT (veh/day)	Seasonal ADT (veh/day)	Traffic Increase (existing)	Traffic Increase (no-build)
1	Herald Street - between Kneeland Street and Washington Street	100%	10,272	10,272	11,038	11,038	7.5%	11,166	11,166	8.7%	1.2%	11,162	11,162	8.7%	1.1%
2	Washington Street - between Herald Street and Kneeland Street	100%	6,125	6,125	6,444	6,444	5.2%	6,763	6,763	10.4%	5.0%	6,753	6,753	10.3%	4.8%
3	Washington Street - between Herald Street and Mass Ave	100%	6,955	6,955	7,337	7,337	5.5%	7,656	7,656	10.1%	4.3%	7,646	7,646	9.9%	4.2%
4	Herald Street - between Washington Street and Harrison Ave	100%	11,293	11,293	12,123	12,123	7.3%	12,250	12,250	8.5%	1.1%	12,246	12,246	8.4%	1.0%
5	Harrison Ave - between Herald Street and Kneeland Street	100%	3,445	3,445	3,892	3,892	13.0%	4,211	4,211	22.2%	8.2%	4,201	4,201	21.9%	7.9%
6	Harrison Ave - between Herald Street and Traveler Street	100%	5,040	5,040	5,806	5,806	15.2%	6,380	6,380	26.6%	9.9%	6,362	6,362	26.2%	9.6%
7	Herald Street - between Harrison Ave and Albany Street	100%	10,719	10,719	11,357	11,357	6.0%	11,421	11,421	6.5%	0.6%	11,419	11,419	6.5%	0.5%
8	Albany Street - north of Herald Street	100%	10,527	10,527	11,995	11,995	13.9%	13,399	13,399	27.3%	11.7%	13,355	13,355	26.9%	11.3%
9	Albany Street - between Herald Street and I-93 SB On-ramp	100%	21,246	21,246	23,352	23,352	9.9%	24,819	24,819	16.8%	6.3%	24,774	24,774	16.6%	6.1%
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	100%	13,207	13,207	14,866	14,866	12.6%	16,436	16,436	24.4%	10.6%	16,387	16,387	24.1%	10.2%
11	Albany Street between Traveler Street and East Berkeley Street	100%	6,125	6,125	7,465	7,465	21.9%	8,039	8,039	31.3%	7.7%	8,021	8,021	31.0%	7.5%
12	Albany Street - between East Berkeley Street and Albany Street	100%	4,849	4,849	5,615	5,615	15.8%	6,189	6,189	27.6%	10.2%	6,171	6,171	27.3%	9.9%
13	I-93 NB On-Ramp - north of Traveler Street to I-93	100%	11,804	11,804	12,761	12,761	8.1%	13,654	13,654	15.7%	7.0%	13,626	13,626	15.4%	6.8%
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	100%	6,827	6,827	7,656	7,656	12.1%	7,720	7,720	13.1%	0.8%	7,718	7,718	13.1%	0.8%
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	100%	11,804	11,804	11,995	11,995	1.6%	13,845	13,845	17.3%	15.4%	13,788	13,788	16.8%	14.9%
16	Mullins Way - between Washington Street and Harrison Ave	100%	3,573	3,573	3,828	3,828	7.1%	3,956	3,956	10.7%	3.3%	3,952	3,952	10.6%	3.2%
17	Traveler Street - between Washington Street and Harrison Ave	100%	3,190	3,190	3,382	3,382	6.0%	3,637	3,637	14.0%	7.5%	3,629	3,629	13.8%	7.3%
18	Traveler Street - between Harrison Ave and Albany Street	100%	3,063	3,063	4,339	4,339	41.7%	7,529	7,529	145.8%	73.5%	7,430	7,430	142.6%	71.3%
19	East Berkeley Street - between Harrison Ave and Albany Street	100%	10,017	10,017	11,102	11,102	10.8%	11,740	11,740	17.2%	5.7%	11,720	11,720	17.0%	5.6%
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	100%	8,103	8,103	8,869	8,869	9.4%	10,272	10,272	26.8%	15.8%	10,229	10,229	26.2%	15.3%
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	100%	8,741	8,741	9,634	9,634	10.2%	10,272	10,272	17.5%	6.6%	10,253	10,253	17.3%	6.4%
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	100%	11,740	11,740	12,442	12,442	6.0%	12,505	12,505	6.5%	0.5%	12,503	12,503	6.5%	0.5%
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	100%	7,337	7,337	8,039	8,039	9.6%	8,103	8,103	10.4%	0.8%	8,101	8,101	10.4%	0.8%
24	Harrison Ave- between East Berkeley Street and Mass. Ave	100%	5,551	5,551	6,316	6,316	13.8%	7,018	7,018	26.4%	11.1%	6,997	6,997	26.0%	10.8%
25	I-90 EB On-Ramp - north of Traveler Street to I-90	100%	3,764	3,764	4,339	4,339	15.3%	4,849	4,849	28.8%	11.8%	4,833	4,833	28.4%	11.4%
26	East Berkeley Street - west of Harrison Ave	100%	8,932	8,932	9,762	9,762	9.3%	10,208	10,208	14.3%	4.6%	10,195	10,195	14.1%	4.4%
27	Site Drive North - Albany Street	100%	0	0	0	0	#DIV/0!	128	128	#DIV/0!	#DIV/0!	124	124	#DIV/0!	#DIV/0!
28	Site Drive South - Harrison Ave	100%	0	0	0	0	#DIV/0!	1,340	1,340	#DIV/0!	#DIV/0!	1,298	1,298	#DIV/0!	#DIV/0!
29	Site Drive -Traveler Street	100%	0	0	0	0	#DIV/0!	5,934	5,934	#DIV/0!	#DIV/0!	5,750	5,750	#DIV/0!	#DIV/0!
30	Site Drive - No Data	100%	0	0	0	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	0	0	#DIV/0!	#DIV/0!

## Herald Square, Boston MA

Link No.	Roadway Description	2011 Existing Condition		2016 No Build Condition			2016 Build Condition				2016 Build with Mitigation Condition				
		Roadway S.A.F.	Seasonal ADT	Roadway ADT	Seasonal ADT	Traffic Increase (existing)	Roadway ADT	Seasonal ADT	Traffic Increase (existing)	Traffic Increase (no-build)	Roadway ADT	Seasonal ADT	Traffic Increase (existing)	Traffic Increase (no-build)	
		(veh/day)	(veh/day)	(veh/day)	(veh/day)	(%)	(veh/day)	(veh/day)	(%)	(%)	(veh/day)	(veh/day)	(%)	(%)	
1	Herald Street - between Kneeland Street and Washington Street	100%	16,669	16,669	18,053	18,053	8.3%	18,174	18,174	9.0%	0.7%	18,170	18,170	9.0%	0.6%
2	Washington Street - between Herald Street and Kneeland Street	100%	7,522	7,522	7,943	7,943	5.6%	8,244	8,244	9.6%	3.8%	8,235	8,235	9.5%	3.7%
3	Washington Street - between Herald Street and Mass Ave	100%	7,522	7,522	7,943	7,943	5.6%	8,244	8,244	9.6%	3.8%	8,235	8,235	9.5%	3.7%
4	Herald Street - between Washington Street and Harrison Ave	100%	16,669	16,669	18,053	18,053	8.3%	18,174	18,174	9.0%	0.7%	18,170	18,170	9.0%	0.6%
5	Harrison Ave - between Herald Street and Kneeland Street	100%	4,333	4,333	4,814	4,814	11.1%	5,055	5,055	16.7%	5.0%	5,047	5,047	16.5%	4.8%
6	Harrison Ave - between Herald Street and Traveler Street	100%	7,282	7,282	8,064	8,064	10.7%	8,666	8,666	19.0%	7.5%	8,647	8,647	18.8%	7.2%
7	Herald Street - between Harrison Ave and Albany Street	100%	17,933	17,933	19,257	19,257	7.4%	19,257	19,257	7.4%	0.0%	19,257	19,257	7.4%	0.0%
8	Albany Street - north of Herald Street	100%	17,692	17,692	19,317	19,317	9.2%	20,460	20,460	15.6%	5.9%	20,425	20,425	15.4%	5.7%
9	Albany Street - between Herald Street and I-93 SB On-ramp	100%	35,625	35,625	38,574	38,574	8.3%	39,717	39,717	11.5%	3.0%	39,682	39,682	11.4%	2.9%
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	100%	24,974	24,974	27,140	27,140	8.7%	28,344	28,344	13.5%	4.4%	28,306	28,306	13.3%	4.3%
11	Albany Street between Traveler Street and East Berkeley Street	100%	11,735	11,735	13,239	13,239	12.8%	13,660	13,660	16.4%	3.2%	13,647	13,647	16.3%	3.1%
12	Albany Street - between East Berkeley Street and Albany Street	100%	10,170	10,170	11,133	11,133	9.5%	11,554	11,554	13.6%	3.8%	11,541	11,541	13.5%	3.7%
13	I-93 NB On-Ramp - north of Traveler Street to I-93	100%	17,391	17,391	18,715	18,715	7.6%	19,377	19,377	11.4%	3.5%	19,357	19,357	11.3%	3.4%
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	100%	12,818	12,818	14,021	14,021	9.4%	14,021	14,021	9.4%	0.0%	14,021	14,021	9.4%	0.0%
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	100%	20,160	20,160	22,025	22,025	9.3%	22,507	22,507	11.6%	2.2%	22,492	22,492	11.6%	2.1%
16	Mullins Way - between Washington Street and Harrison Ave	100%	3,069	3,069	3,310	3,310	7.8%	3,370	3,370	9.8%	1.8%	3,368	3,368	9.7%	1.8%
17	Traveler Street - between Washington Street and Harrison Ave	100%	1,384	1,384	1,504	1,504	8.7%	1,745	1,745	26.1%	16.0%	1,738	1,738	25.5%	15.5%
18	Traveler Street - between Harrison Ave and Albany Street	100%	4,212	4,212	5,416	5,416	28.6%	8,004	8,004	90.0%	47.8%	7,923	7,923	88.1%	46.3%
19	East Berkeley Street - between Harrison Ave and Albany Street	100%	12,818	12,818	13,961	13,961	8.9%	14,443	14,443	12.7%	3.4%	14,428	14,428	12.6%	3.3%
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	100%	15,767	15,767	16,970	16,970	7.6%	18,114	18,114	14.9%	6.7%	18,078	18,078	14.7%	6.5%
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	100%	11,253	11,253	12,096	12,096	7.5%	12,637	12,637	12.3%	4.5%	12,621	12,621	12.2%	4.3%
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	100%	21,002	21,002	22,326	22,326	6.3%	22,386	22,386	6.6%	0.3%	22,384	22,384	6.6%	0.3%
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	100%	11,855	11,855	12,698	12,698	7.1%	12,758	12,758	7.6%	0.5%	12,756	12,756	7.6%	0.5%
24	Harrison Ave- between East Berkeley Street and Mass. Ave	100%	9,869	9,869	10,712	10,712	8.5%	11,133	11,133	12.8%	3.9%	11,120	11,120	12.7%	3.8%
25	I-90 EB On-Ramp - north of Traveler Street to I-90	100%	7,282	7,282	8,004	8,004	9.9%	8,425	8,425	15.7%	5.3%	8,412	8,412	15.5%	5.1%
26	East Berkeley Street - west of Harrison Ave	100%	10,952	10,952	11,855	11,855	8.2%	12,216	12,216	11.5%	3.0%	12,205	12,205	11.4%	3.0%
27	Site Drive North - Albany Street	100%	0	0	0	0	#DIV/0!	120	120	#DIV/0!	#DIV/0!	117	117	#DIV/0!	#DIV/0!
28	Site Drive South - Harrison Ave	100%	0	0	0	0	#DIV/0!	963	963	#DIV/0!	#DIV/0!	933	933	#DIV/0!	#DIV/0!
29	Site Drive -Traveler Street	100%	0	0	0	0	#DIV/0!	4,850	4,850	#DIV/0!	#DIV/0!	4,700	4,700	#DIV/0!	#DIV/0!
30	Site Drive - No Data	100%	0	0	0	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	0	0	#DIV/0!	#DIV/0!



**Herald Square, Boston MA**  
**MOBILE 6.2 Emission Factors**

2011			2016		
Vehicle Speed (mph)	CO2 (g/veh-mile)		Vehicle Speed (mph)	CO2 (g/veh-mile)	
	Freeway	Arterial		Freeway	Arterial
2.5	559.89	559.89	2.5	565.98	565.98
3	559.89	559.89	3	565.98	565.98
4	559.89	559.89	4	565.98	565.98
5	559.89	559.89	5	565.98	565.98
6	559.89	559.89	6	565.98	565.98
7	559.89	559.89	7	565.98	565.98
8	559.89	559.89	8	565.98	565.98
9	559.89	559.89	9	565.98	565.98
10	559.89	559.89	10	565.98	565.98
11	559.89	559.89	11	565.98	565.98
12	559.89	559.89	12	565.98	565.98
13	559.89	559.89	13	565.98	565.98
14	559.89	559.89	14	565.98	565.98
15	559.89	559.89	15	565.98	565.98
16	559.89	559.89	16	565.98	565.98
17	559.89	559.89	17	565.98	565.98
18	559.89	559.89	18	565.98	565.98
19	559.89	559.89	19	565.98	565.98
20	559.89	559.89	20	565.98	565.98
21	559.89	559.89	21	565.98	565.98
22	559.89	559.89	22	565.98	565.98
23	559.89	559.89	23	565.98	565.98
24	559.89	559.89	24	565.98	565.98
25	559.89	559.89	25	565.98	565.98
26	559.89	559.89	26	565.98	565.98
27	559.89	559.89	27	565.98	565.98
28	559.89	559.89	28	565.98	565.98
29	559.89	559.89	29	565.98	565.98
30	559.89	559.89	30	565.98	565.98
31	559.89	559.89	31	565.98	565.98
32	559.89	559.89	32	565.98	565.98
33	559.89	559.89	33	565.98	565.98
34	559.89	559.89	34	565.98	565.98
35	559.89	559.89	35	565.98	565.98
36	559.89	559.89	36	565.98	565.98
37	559.89	559.89	37	565.98	565.98
38	559.89	559.89	38	565.98	565.98
39	559.89	559.89	39	565.98	565.98
40	559.89	559.89	40	565.98	565.98
41	559.89	559.89	41	565.98	565.98
42	559.89	559.89	42	565.98	565.98
43	559.89	559.89	43	565.98	565.98
44	559.89	559.89	44	565.98	565.98
45	559.89	559.89	45	565.98	565.98
46	559.89	559.89	46	565.98	565.98
47	559.89	559.89	47	565.98	565.98
48	559.89	559.89	48	565.98	565.98
49	559.89	559.89	49	565.98	565.98
50	559.89	559.89	50	565.98	565.98
51	559.89	559.89	51	565.98	565.98
52	559.89	559.89	52	565.98	565.98
53	559.89	559.89	53	565.98	565.98
54	559.89	559.89	54	565.98	565.98
55	559.89	559.89	55	565.98	565.98
56	559.89	559.89	56	565.98	565.98
57	559.89	559.89	57	565.98	565.98
58	559.89	559.89	58	565.98	565.98
59	559.89	559.89	59	565.98	565.98
60	559.89	559.89	60	565.98	565.98
60.7	559.89	559.89	60.7	565.98	565.98

NOTE: Emission factors were calculated by MOBILE 6.2 and represent a composite vehicle type during summer conditions.

## Herald Square, Boston MA

Link No.	Description	2011 Existing Condition				2016 No Build Condition				2016 Build Condition				2016 Build with Mitigation Condition							
		Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)
		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)			
1	Herald Street - between Kneeland Street and Washington Street	40.9	0.0	40.9	0.0	20.5	56.2	0.0	56.2	0.0	28.1	17.6	0.0	17.6	0.0	8.8	17.6	0.0	17.6	0.0	8.8
2	Washington Street - between Herald Street and Kneeland Street	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6	0.0	11.4	0.0	11.4	5.7	0.0	11.4	0.0	11.4	5.7
3	Washington Street - between Herald Street and Mass Ave	13.3	0.0	13.3	0.0	6.7	13.5	0.0	13.5	0.0	6.8	13.6	0.0	13.6	0.0	6.8	13.6	0.0	13.6	0.0	6.8
4	Herald Street - between Washington Street and Harrison Ave	29.5	0.0	29.5	0.0	14.8	37.1	0.0	37.1	0.0	18.6	20.5	0.0	20.5	0.0	10.3	20.5	0.0	20.5	0.0	10.3
5	Harrison Ave - between Herald Street and Kneeland Street	0.0	27.1	0.0	27.1	13.6	0.0	27.5	0.0	27.5	13.8	0.0	24.4	0.0	24.4	12.2	0.0	24.4	0.0	24.4	12.2
6	Harrison Ave - between Herald Street and Traveler Street	32.5	0.0	32.5	0.0	16.3	32.6	0.0	32.6	0.0	16.3	31.9	0.0	31.9	0.0	16.0	31.9	0.0	31.9	0.0	16.0
7	Herald Street - between Harrison Ave and Albany Street	95.5	0.0	95.5	0.0	47.8	130.6	0.0	120.0	0.0	60.0	19.8	0.0	19.8	0.0	9.9	19.8	0.0	19.8	0.0	9.9
8	Albany Street - north of Herald Street	0.0	24.6	0.0	24.6	12.3	0.0	26.8	0.0	26.8	13.4	0.0	17.2	0.0	17.2	8.6	0.0	17.2	0.0	17.2	8.6
9	Albany Street - between Herald Street and I-93 SB On-ramp	0.0	4.0	0.0	4.0	2.0	0.0	4.0	0.0	4.0	2.0	0.0	3.7	0.0	3.7	1.9	0.0	3.7	0.0	3.7	1.9
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	0.0	11.6	0.0	11.6	5.8	0.0	15.9	0.0	15.9	8.0	0.0	9.3	0.0	9.3	4.7	0.0	9.3	0.0	9.3	4.7
11	Albany Street between Traveler Street and East Berkeley Street	0.0	23.9	0.0	23.9	12.0	0.0	24.5	0.0	24.5	12.3	0.0	23.7	0.0	23.7	11.9	0.0	23.7	0.0	23.7	11.9
12	Albany Street - between East Berkeley Street and Albany Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	32.1	0.0	32.1	0.0	16.1	33.2	0.0	33.2	0.0	16.6	27.7	0.0	27.7	0.0	13.9	27.7	0.0	27.7	0.0	13.9
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	114.8	0.0	114.8	0.0	57.4	153.4	0.0	120.0	0.0	60.0	21.8	0.0	21.8	0.0	10.9	21.8	0.0	21.8	0.0	10.9
16	Mullins Way - between Washington Street and Harrison Ave	11.7	0.0	11.7	0.0	5.9	12.1	0.0	12.1	0.0	6.1	12.2	0.0	12.2	0.0	6.1	12.2	0.0	12.2	0.0	6.1
17	Traveler Street - between Washington Street and Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	Traveler Street - between Harrison Ave and Albany Street	49.3	16.9	49.3	16.9	33.1	48.8	17.1	48.8	17.1	33.0	44.2	14.8	44.2	14.8	29.5	44.2	14.8	44.2	14.8	29.5
19	East Berkeley Street - between Harrison Ave and Albany Street	0.0	34.6	0.0	34.6	17.3	0.0	39.7	0.0	39.7	19.9	0.0	22.5	0.0	22.5	11.3	0.0	22.5	0.0	22.5	11.3
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	11.2	0.0	11.2	0.0	5.6	11.6	0.0	11.6	0.0	5.8	9.5	0.0	9.5	0.0	4.8	9.5	0.0	9.5	0.0	4.8
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	0.0	8.0	0.0	8.0	4.0	0.0	9.3	0.0	9.3	4.7	0.0	8.6	0.0	8.6	4.3	0.0	8.6	0.0	8.6	4.3
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	0.0	37.4	0.0	37.4	18.7	0.0	38.5	0.0	38.5	19.3	0.0	33.6	0.0	33.6	16.8	0.0	33.6	0.0	33.6	16.8
24	Harrison Ave - between East Berkeley Street and Mass. Ave	26.6	0.0	26.6	0.0	13.3	30.8	0.0	30.8	0.0	15.4	25.0	0.0	25.0	0.0	12.5	25.0	0.0	25.0	0.0	12.5
25	I-90 EB On-Ramp - north of Traveler Street to I-90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	East Berkeley Street - west of Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	Site Drive North - Albany Street	227.5	4.0	120.0	4.0	62.0	364.8	4.0	120.0	4.0	62.0	9.1	3.7	9.1	3.7	6.4	9.1	3.7	9.1	3.7	6.4
28	Site Drive South - Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2	0.0	9.2	4.6	0.0	9.2	0.0	9.2	4.6
29	Site Drive -Traveler Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.0	0.0	33.0	16.5	0.0	33.0	0.0	33.0	16.5
30	Site Drive - No Data	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	I-90 - west of 93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	I-90 - east of 93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	I-93 - north of 90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	I-93 - south of 90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

### Herald Square, Boston MA

#### Saturday Peak Condition

Int	Description	2011 Existing Condition				2016 No Build Condition				2016 Build Condition				2016 Build with Mitigation Condition			
		Delay by Approach				Delay by Approach				Delay by Approach				Delay by Approach			
		Northbound NB.EX	Southbound SB.EX	Eastbound EB.EX	Westbound WB.EX	Northbound NB.NB	Southbound SB.NB	Eastbound EB.NB	Westbound WB.NB	Northbound NB.BL	Southbound SB.BL	Eastbound EB.BL	Westbound WB.BL	Northbound NB.BLM	Southbound SB.BLM	Eastbound EB.BLM	Westbound WB.BLM
Int1	Herald Street and Washington Street	13.3	11.1	40.9	0.0	13.5	11.1	56.2	0.0	13.6	11.4	17.6	0.0	13.6	11.4	17.6	0.0
Int2	Herald Street and Harrison Avenue	32.5	27.1	29.5	0.0	32.6	27.5	37.1	0.0	31.9	24.4	20.5	0.0	31.9	24.4	20.5	0.0
Int3	Herald Street and Albany Street	0.0	24.6	95.5	0.0	0.0	26.8	130.6	0.0	0.0	17.2	19.8	0.0	0.0	17.2	19.8	0.0
Int4	Traveler Street and Harrison Avenue	40.1	41.8	0.0	16.9	41.6	62.5	0.0	17.1	28.7	128.5	0.0	14.8	28.7	128.5	0.0	14.8
Int5	Traveler Street and Albany Street	0.0	11.6	49.3	0.0	0.0	15.9	48.8	0.0	0.0	9.3	44.2	0.0	0.0	9.3	44.2	0.0
Int6	Traveler Street and Frontage Road	32.1	0.0	11.2	0.0	33.2	0.0	11.6	0.0	27.7	0.0	9.5	0.0	27.7	0.0	9.5	0.0
Int7	East Berkeley Street and Harrison Ave	26.6	10.7	0.0	34.6	30.8	10.7	0.0	39.7	25.0	18.5	0.0	22.5	25.0	18.5	0.0	22.5
Int8	East Berkeley Street and Albany Street	0.0	23.9	0.0	8.0	0.0	24.5	0.0	9.3	0.0	23.7	0.0	8.6	0.0	23.7	0.0	8.6
Int9	East Berkeley Street and Frontage Road	114.8	0.0	0.0	37.4	153.4	0.0	0.0	38.5	21.8	0.0	0.0	33.6	21.8	0.0	0.0	33.6
Int10	William E. Mullins Way and Harrison Avenue	6.2	0.0	11.7	0.0	6.6	0.0	12.1	0.0	6.2	0.0	12.2	0.0	6.2	0.0	12.2	0.0
Int11	Boston Herald Back and Albany Street	0.0	4.0	227.5	0.0	0.0	4.0	364.8	0.0	0.0	3.7	9.1	0.0	0.0	3.7	9.1	0.0
Int12	South Site Driveway and Harrison Avenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2	0.0	0.0	0.0	9.2	0.0
Int13	North Site Driveway and Harrison Avenue- No Data	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Int 14	Travelers Driveway	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.0	2.3	0.6	0.0	33.0	2.3	0.6

### Herald Square, Boston MA

Link No.	Description	2011 Existing Condition				2016 No Build Condition				2016 Build Condition				2016 Build with Mitigation Condition							
		Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)	Delay By Approach		Adjusted Delay *		Combined Delay (sec)
		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)	NB or EB (sec)	SB or WB (sec)		NB or EB (sec)	SB or WB (sec)			
1	Herald Street - between Kneeland Street and Washington Street	40.9	0.0	40.9	0.0	20.5	56.2	0.0	56.2	0.0	28.1	58.1	0.0	58.1	0.0	29.1	58.1	0.0	58.1	0.0	29.1
2	Washington Street - between Herald Street and Kneeland Street	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6	0.0	11.1	0.0	11.1	5.6
3	Washington Street - between Herald Street and Mass Ave	13.3	0.0	13.3	0.0	6.7	13.5	0.0	13.5	0.0	6.8	13.7	0.0	13.7	0.0	6.9	13.7	0.0	13.7	0.0	6.9
4	Herald Street - between Washington Street and Harrison Ave	29.5	0.0	29.5	0.0	14.8	37.1	0.0	37.1	0.0	18.6	37.8	0.0	37.8	0.0	18.9	37.8	0.0	37.8	0.0	18.9
5	Harrison Ave - between Herald Street and Kneeland Street	0.0	27.1	0.0	27.1	13.6	0.0	27.5	0.0	27.5	13.8	0.0	27.5	0.0	27.5	13.8	0.0	27.5	0.0	27.5	13.8
6	Harrison Ave - between Herald Street and Traveler Street	32.5	0.0	32.5	0.0	16.3	32.6	0.0	32.6	0.0	16.3	32.7	0.0	32.7	0.0	16.4	32.7	0.0	32.7	0.0	16.4
7	Herald Street - between Harrison Ave and Albany Street	95.5	0.0	95.5	0.0	47.8	130.6	0.0	120.0	0.0	60.0	130.6	0.0	120.0	0.0	60.0	130.6	0.0	120.0	0.0	60.0
8	Albany Street - north of Herald Street	0.0	24.6	0.0	24.6	12.3	0.0	26.8	0.0	26.8	13.4	0.0	29.0	0.0	29.0	14.5	0.0	29.0	0.0	29.0	14.5
9	Albany Street - between Herald Street and I-93 SB On-Ramp	0.0	4.7	0.0	4.7	2.4	0.0	5.1	0.0	5.1	2.6	0.0	4.5	0.0	4.5	2.3	0.0	4.5	0.0	4.5	2.3
10	Albany Street - between I-93 SB On-Ramp and Traveler Street	0.0	11.6	0.0	11.6	5.8	0.0	15.9	0.0	15.9	8.0	0.0	25.9	0.0	25.9	13.0	0.0	25.9	0.0	25.9	13.0
11	Albany Street between Traveler Street and East Berkeley Street	0.0	23.9	0.0	23.9	12.0	0.0	24.5	0.0	24.5	12.3	0.0	22.8	0.0	22.8	11.4	0.0	22.8	0.0	22.8	11.4
12	Albany Street - between East Berkeley Street and Albany Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	I-93 NB On-Ramp - north of Traveler Street to I-93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	I-93 NB On-Ramp - between Traveler Street and West 4th Street	32.1	0.0	32.1	0.0	16.1	33.2	0.0	33.2	0.0	16.6	33.2	0.0	33.2	0.0	16.6	33.2	0.0	33.2	0.0	16.6
15	I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	114.8	0.0	114.8	0.0	57.4	153.4	0.0	120.0	0.0	60.0	150.8	0.0	120.0	0.0	60.0	150.8	0.0	120.0	0.0	60.0
16	Mullins Way - between Washington Street and Harrison Ave	17.5	0.0	17.5	0.0	8.8	19.5	0.0	19.5	0.0	9.8	14.5	0.0	14.5	0.0	7.3	14.5	0.0	14.5	0.0	7.3
17	Traveler Street - between Washington Street and Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	Traveler Street - between Harrison Ave and Albany Street	49.3	16.9	49.3	16.9	33.1	48.8	17.1	48.8	17.1	33.0	48.9	17.7	48.9	17.7	33.3	48.9	17.7	48.9	17.7	33.3
19	East Berkeley Street - between Harrison Ave and Albany Street	0.0	34.6	0.0	34.6	17.3	0.0	39.7	0.0	39.7	19.9	0.0	42.9	0.0	42.9	21.5	0.0	42.9	0.0	42.9	21.5
20	Traveler Street - between Albany Street and I-93 NB On-Ramp	11.2	0.0	11.2	0.0	5.6	11.6	0.0	11.6	0.0	5.8	11.9	0.0	11.9	0.0	6.0	11.9	0.0	11.9	0.0	6.0
21	East Berkeley Street - between Albany Street and I-93 NB On-Ramp	0.0	8.0	0.0	8.0	4.0	0.0	9.3	0.0	9.3	4.7	0.0	10.7	0.0	10.7	5.4	0.0	10.7	0.0	10.7	5.4
22	Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	0.0	37.4	0.0	37.4	18.7	0.0	38.5	0.0	38.5	19.3	0.0	38.6	0.0	38.6	19.3	0.0	38.6	0.0	38.6	19.3
24	Harrison Ave - between East Berkeley Street and Mass. Ave	26.6	0.0	26.6	0.0	13.3	30.8	0.0	30.8	0.0	15.4	35.2	0.0	35.2	0.0	17.6	35.2	0.0	35.2	0.0	17.6
25	I-90 EB On-Ramp - north of Traveler Street to I-90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	East Berkeley Street - west of Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	Site Drive North - Albany Street	0.0	4.7	0.0	4.7	2.4	0.0	5.1	0.0	5.1	2.6	0.0	4.5	0.0	4.5	2.3	0.0	4.5	0.0	4.5	2.3
28	Site Drive South - Harrison Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.0	9.4	4.7	0.0	9.4	0.0	9.4	4.7
29	Site Drive -Traveler Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	54.4	2.0	54.4	28.2	2.0	54.4	2.0	54.4	28.2
30	Site Drive - No Data	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	I-90 - west of 93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	I-90 - east of 93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	I-93 - north of 90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	I-93 - south of 90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

### Herald Square, Boston MA

#### PM Peak Condition

Int	Description	2011 Existing Condition				2016 No Build Condition				2016 Build Condition				2016 Build with Mitigation Condition			
		Delay by Approach				Delay by Approach				Delay by Approach				Delay by Approach			
		Northbound NB.EX	Southbound SB.EX	Eastbound EB.EX	Westbound WB.EX	Northbound NB.NB	Southbound SB.NB	Eastbound EB.NB	Westbound WB.NB	Northbound NB.BL	Southbound SB.BL	Eastbound EB.BL	Westbound WB.BL	Northbound NB.BLM	Southbound SB.BLM	Eastbound EB.BLM	Westbound WB.BLM
Int1	Herald Street and Washington Street	13.3	11.1	40.9	0.0	13.5	11.1	56.2	0.0	13.7	11.1	58.1	0.0	13.7	11.1	58.1	0.0
Int2	Herald Street and Harrison Avenue	32.5	27.1	29.5	0.0	32.6	27.5	37.1	0.0	32.7	27.5	37.8	0.0	32.7	27.5	37.8	0.0
Int3	Herald Street and Albany Street	0.0	24.6	95.5	0.0	0.0	26.8	130.6	0.0	0.0	29.0	130.6	0.0	0.0	29.0	130.6	0.0
Int4	Traveler Street and Harrison Avenue	40.1	41.8	0.0	16.9	41.6	62.5	0.0	17.1	45.5	176.5	0.0	17.7	45.5	176.5	0.0	17.7
Int5	Traveler Street and Albany Street	0.0	11.6	49.3	0.0	0.0	15.9	48.8	0.0	0.0	25.9	48.9	0.0	0.0	25.9	48.9	0.0
Int6	Traveler Street and Frontage Road	32.1	0.0	11.2	0.0	33.2	0.0	11.6	0.0	33.2	0.0	11.9	0.0	33.2	0.0	11.9	0.0
Int7	East Berkeley Street and Harrison Ave	26.6	10.7	0.0	34.6	30.8	10.7	0.0	39.7	35.2	15.0	0.0	42.9	35.2	15.0	0.0	42.9
Int8	East Berkeley Street and Albany Street	0.0	23.9	0.0	8.0	0.0	24.5	0.0	9.3	0.0	22.8	0.0	10.7	0.0	22.8	0.0	10.7
Int9	East Berkeley Street and Frontage Road	114.8	0.0	0.0	37.4	153.4	0.0	0.0	38.5	150.8	0.0	0.0	38.6	150.8	0.0	0.0	38.6
Int10	William E. Mullins Way and Harrison Avenue	4.4	0.0	17.5	16.6	4.7	0.0	19.5	18.1	4.5	0.0	14.5	0.0	4.5	0.0	14.5	0.0
Int11	Boston Herald Back and Albany Street	0.0	4.7	Err	0.0	0.0	5.1	Err	0.0	0.0	4.5	10.2	0.0	0.0	4.5	10.2	0.0
Int12	South Site Driveway and Harrison Avenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.0	0.0	0.0	9.4
Int13	North Site Driveway and Harrison Avenue- No Data	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Int14	Traveler Street and Site Driveway	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.4	2.0	0.5	0.0	54.4	2.0	0.5

# Herald Square, Boston MA

[Harrison Avenue, south of Herald Street](#)

Saturday 03/05/2011						Saturday 03/05/2011						Weekend Average				
Begin Time	Volume	V/C Ratio	Peak Period Data		Begin Time	Volume	V/C Ratio	Peak Period Data		Begin Time	Volume	V/C Ratio	Peak Period Data			
			Hours	Volume				Hours	Volume				Hours	Volume		
12:00 AM	143	0.12	0	0	12:00 AM	143	0.12	0	0	12:00 AM	143	0.12	0	0		
1:00 AM	150	0.13	0	0	1:00 AM	150	0.13	0	0	1:00 AM	150	0.13	0	0		
2:00 AM	178	0.15	0	0	2:00 AM	178	0.15	0	0	2:00 AM	178	0.15	0	0		
3:00 AM	68	0.06	0	0	3:00 AM	68	0.06	0	0	3:00 AM	68	0.06	0	0		
4:00 AM	55	0.05	0	0	4:00 AM	55	0.05	0	0	4:00 AM	55	0.05	0	0		
5:00 AM	40	0.03	0	0	5:00 AM	40	0.03	0	0	5:00 AM	40	0.03	0	0		
6:00 AM	76	0.06	0	0	6:00 AM	76	0.06	0	0	6:00 AM	76	0.06	0	0		
7:00 AM	118	0.10	0	0	7:00 AM	118	0.10	0	0	7:00 AM	118	0.10	0	0		
8:00 AM	227	0.19	0	0	8:00 AM	227	0.19	0	0	8:00 AM	227	0.19	0	0		
9:00 AM	381	0.32	0	0	9:00 AM	381	0.32	0	0	9:00 AM	381	0.32	0	0		
10:00 AM	404	0.34	0	0	10:00 AM	404	0.34	0	0	10:00 AM	404	0.34	0	0		
11:00 AM	401	0.33	0	0	11:00 AM	401	0.33	0	0	11:00 AM	401	0.33	0	0		
12:00 PM	415	0.35	1	415	12:00 PM	415	0.35	1	415	12:00 PM	415	0.35	1	415		
1:00 PM	402	0.34	0	0	1:00 PM	402	0.34	0	0	1:00 PM	402	0.34	0	0		
2:00 PM	514	0.43	1	514	2:00 PM	514	0.43	1	514	2:00 PM	514	0.43	1	514		
3:00 PM	495	0.41	1	495	3:00 PM	495	0.41	1	495	3:00 PM	495	0.41	1	495		
4:00 PM	415	0.35	1	415	4:00 PM	415	0.35	1	415	4:00 PM	415	0.35	1	415		
5:00 PM	408	0.34	1	408	5:00 PM	408	0.34	1	408	5:00 PM	408	0.34	1	408		
6:00 PM	298	0.25	0	0	6:00 PM	298	0.25	0	0	6:00 PM	298	0.25	0	0		
7:00 PM	220	0.18	0	0	7:00 PM	220	0.18	0	0	7:00 PM	220	0.18	0	0		
8:00 PM	170	0.14	0	0	8:00 PM	170	0.14	0	0	8:00 PM	170	0.14	0	0		
9:00 PM	172	0.14	0	0	9:00 PM	172	0.14	0	0	9:00 PM	172	0.14	0	0		
10:00 PM	172	0.14	0	0	10:00 PM	172	0.14	0	0	10:00 PM	172	0.14	0	0		
11:00 PM	237	0.20	0	0	11:00 PM	237	0.20	0	0	11:00 PM	237	0.20	0	0		
<b>Total</b>	<b>6,159</b>		<b>5</b>	<b>2,247</b>	<b>Total</b>	<b>6,159</b>		<b>5</b>	<b>2,247</b>	<b>Total</b>	<b>6,159</b>		<b>5</b>	<b>2,247</b>		
<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>	<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>	<b>Roadway Capacity</b>	<b>1200</b>	<b>Crit. V/C</b>		<b>Critical Capacity</b>		
		<b>34%</b>		<b>408</b>			<b>34%</b>		<b>408</b>			<b>34%</b>		<b>408</b>		
<b>Peak Hour (K) Factor</b>	<b>0.083</b>		<b>(4:00-5:00 PM)</b>		<b>Peak Hour (K) Factor</b>	<b>0.083</b>		<b>(4:00-5:00 PM)</b>		<b>Peak Hour (K) Factor</b>	<b>0.083</b>		<b>(4:00-5:00 PM)</b>			
<b>Peak Period Volume Factor</b>			<b>0.365</b>		<b>Peak Period Volume Factor</b>			<b>0.365</b>		<b>Peak Period Volume Factor</b>			<b>0.365</b>			

## Herald Square, Boston MA

[Harrison Avenue, south of Herald Street](#)

Thursday 03/03/2011					Friday 03/04/2011					Weekday Average				
		Peak Period Data					Peak Period Data					Peak Period Data		
Begin Time	Volume	V/C Ratio	Hours	Volume	Begin Time	Volume	V/C Ratio	Hours	Volume	Begin Time	Volume	V/C Ratio	Hours	Volume
12:00 AM	70	0.06	0	0	12:00 AM	73	0.06	0	0	12:00 AM	72	0.06	0	0
1:00 AM	55	0.05	0	0	1:00 AM	71	0.06	0	0	1:00 AM	63	0.05	0	0
2:00 AM	41	0.03	0	0	2:00 AM	71	0.06	0	0	2:00 AM	56	0.05	0	0
3:00 AM	42	0.04	0	0	3:00 AM	49	0.04	0	0	3:00 AM	46	0.04	0	0
4:00 AM	57	0.05	0	0	4:00 AM	62	0.05	0	0	4:00 AM	60	0.05	0	0
5:00 AM	76	0.06	0	0	5:00 AM	74	0.06	0	0	5:00 AM	75	0.06	0	0
6:00 AM	151	0.13	0	0	6:00 AM	138	0.12	0	0	6:00 AM	145	0.12	0	0
7:00 AM	258	0.22	0	0	7:00 AM	288	0.24	0	0	7:00 AM	273	0.23	0	0
8:00 AM	361	0.30	1	361	8:00 AM	381	0.32	0	0	8:00 AM	371	0.31	0	0
9:00 AM	387	0.32	1	387	9:00 AM	395	0.33	0	0	9:00 AM	391	0.33	1	391
10:00 AM	341	0.28	0	0	10:00 AM	372	0.31	0	0	10:00 AM	357	0.30	0	0
11:00 AM	412	0.34	1	412	11:00 AM	412	0.34	0	0	11:00 AM	412	0.34	1	412
12:00 PM	350	0.29	0	0	12:00 PM	385	0.32	0	0	12:00 PM	368	0.31	0	0
1:00 PM	348	0.29	0	0	1:00 PM	423	0.35	1	423	1:00 PM	386	0.32	0	0
2:00 PM	419	0.35	1	419	2:00 PM	463	0.39	1	463	2:00 PM	441	0.37	1	441
3:00 PM	544	0.45	1	544	3:00 PM	528	0.44	1	528	3:00 PM	536	0.45	1	536
4:00 PM	555	0.46	1	555	4:00 PM	591	0.49	1	591	4:00 PM	573	0.48	1	573
5:00 PM	574	0.48	1	574	5:00 PM	589	0.49	1	589	5:00 PM	582	0.48	1	582
6:00 PM	322	0.27	0	0	6:00 PM	458	0.38	1	458	6:00 PM	390	0.33	1	390
7:00 PM	231	0.19	0	0	7:00 PM	306	0.26	0	0	7:00 PM	269	0.22	0	0
8:00 PM	169	0.14	0	0	8:00 PM	257	0.21	0	0	8:00 PM	213	0.18	0	0
9:00 PM	143	0.12	0	0	9:00 PM	182	0.15	0	0	9:00 PM	163	0.14	0	0
10:00 PM	155	0.13	0	0	10:00 PM	214	0.18	0	0	10:00 PM	185	0.15	0	0
11:00 PM	125	0.10	0	0	11:00 PM	218	0.18	0	0	11:00 PM	172	0.14	0	0
<b>Total</b>	<b>6,186</b>		<b>7</b>	<b>3,252</b>	<b>Total</b>	<b>7,000</b>		<b>6</b>	<b>3,052</b>	<b>Total</b>	<b>6,593</b>		<b>7</b>	<b>3,325</b>
<b>Roadway Capacity</b>		<b>Crit. V/C</b>		<b>Critical Capacity</b>	<b>Roadway Capacity</b>		<b>Crit. V/C</b>		<b>Critical Capacity</b>	<b>Roadway Capacity</b>		<b>Crit. V/C</b>		<b>Critical Capacity</b>
1200		30%		360	1200		35%		420	1200		33%		390
<b>Peak Hour (K) Factor</b>		<b>0.093</b>			<b>Peak Hour (K) Factor</b>		<b>0.084</b>			<b>Peak Hour (K) Factor</b>		<b>0.088</b>		
<b>Peak Period Volume Factor</b>			<b>0.526</b>		<b>Peak Period Volume Factor</b>			<b>0.436</b>		<b>Peak Period Volume Factor</b>			<b>0.504</b>	

**Herald Square, Boston MA**  
**Average Daily Traffic (ADT) for Mesoscale Roadway Network**

Estimated TDM Adjustment = 3.10%

Weekday

Unadjusted SAT Peak Hour

Roadway Segment	2011 Existing Condition	2016 No Build Condition	2016 Build Condition	2016 Build with Mitigation Condition	K Factor	Seasonal Adjustment Factor	2011 Existing Condition	2016 No Build Condition	2016 Build Condition	2016 Build with Mitigation Condition
	Volume (ADT)	Volume (ADT)	Volume (ADT)	Volume (ADT)			Volume (ADT)	Volume (ADT)	Volume (ADT)	Volume (ADT)
					8.3%	105.9%				
1 Herald Street - between Kneeland Street and Washington Street	10,272	11,038	11,166	11,162			805	865	875	875
2 Washington Street - between Herald Street and Kneeland Street	6,125	6,444	6,763	6,753			480	505	530	529
3 Washington Street - between Herald Street and Mass Ave	6,955	7,337	7,656	7,646			545	575	600	599
4 Herald Street - between Washington Street and Harrison Ave	11,293	12,123	12,250	12,246			885	950	960	960
5 Harrison Ave - between Herald Street and Kneeland Street	3,445	3,892	4,211	4,201			270	305	330	329
6 Harrison Ave - between Herald Street and Traveler Street	5,040	5,806	6,380	6,362			395	455	500	499
7 Herald Street - between Harrison Ave and Albany Street	10,719	11,357	11,421	11,419			840	890	895	895
8 Albany Street - north of Herald Street	10,527	11,995	13,399	13,355			825	940	1,050	1047
9 Albany Street - between Herald Street and I-93 SB On-ramp	21,246	23,352	24,819	24,774			1,665	1,830	1,945	1,941
10 Albany Street - between I-93 SB On-Ramp and Traveler Street	13,207	14,866	16,436	16,387			1,035	1,165	1,288	1,284
11 Albany Street between Traveler Street and East Berkeley Street	6,125	7,465	8,039	8,021			480	585	630	629
12 Albany Street - between East Berkeley Street and Albany Street	4,849	5,615	6,189	6,171			380	440	485	484
13 I-93 NB On-Ramp - north of Traveler Street to I-93	11,804	12,761	13,654	13,626			925	1,000	1,070	1068
14 I-93 NB On-Ramp - between Traveler Street and West 4th Street	6,827	7,656	7,720	7,718			535	600	605	605
15 I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	11,804	11,995	13,845	13,788			925	940	1,085	1081
16 Mullins Way - between Washington Street and Harrison Ave	3,573	3,828	3,956	3,952			280	300	310	310
17 Traveler Street - between Washington Street and Harrison Ave	3,190	3,382	3,637	3,629			250	265	285	284
18 Traveler Street - between Harrison Ave and Albany Street	3,063	4,339	7,529	7,430			240	340	590	582
19 East Berkeley Street - between Harrison Ave and Albany Street	10,017	11,102	11,740	11,720			785	870	920	918
20 Traveler Street - between Albany Street and I-93 NB On-Ramp	8,103	8,869	10,272	10,229			635	695	805	802
21 East Berkeley Street - between Albany Street and I-93 NB On-Ramp	8,741	9,634	10,272	10,253			685	755	805	803
22 Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	11,740	12,442	12,505	12,503			920	975	980	980
23 West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	7,337	8,039	8,103	8,101			575	630	635	635
24 Harrison Ave - between East Berkeley Street and Mass. Ave	5,551	6,316	7,018	6,997			435	495	550	548
25 I-90 EB On-Ramp - north of Traveler Street to I-90	3,764	4,339	4,849	4,833			295	340	380	379
26 East Berkeley Street - west of Harrison Ave	8,932	9,762	10,208	10,195			700	765	800	799
27 Site Drive North - Albany Street	0	0	128	124			0	0	10	10
28 Site Drive South - Harrison Ave	0	0	1,340	1,298			0	0	105	102
29 Site Drive -Traveler Street	0	0	5,934	5,750			0	0	465	451
30 Site Drive - No Data	0	0	0	0			0	0	0	0
31 I-90 - west of 93	1,007,717	1,112,601	1,112,601	1,112,601			78,971	87,190	87,190	87190
32 I-90 - east of 93	450,870	497,797	497,797	497,797			35,333	39,010	39,010	39010
33 I-93 - north of 90	1,011,915	1,117,236	1,117,236	1,117,236			79,300	87,554	87,554	87554
34 I-93 - south of 90	542,325	598,771	598,771	598,771			42,500	46,923	46,923	46923

## Herald Square, Boston MA Average Daily Traffic (ADT) for Mesoscale Roadway Network

Weekday

Estimated TDM Adjustment = 3.10%

Roadway Segment	2011 Existing Condition	2016 No Build Condition	2016 Build Condition	2016 Build with Mitigation Condition	K Factor	Seasonal Adjustment Factor	Unadjusted PM Peak Hour			
	Volume (ADT)	Volume (ADT)	Volume (ADT)	Volume (ADT)			2011 Existing Condition	2016 No Build Condition	2016 Build Condition	2016 Build with Mitigation Condition
					8.8%	105.9%				
1 Herald Street - between Kneeland Street and Washington Street	16,669	18,053	18,174	18,170			1385	1500	1510	1510
2 Washington Street - between Herald Street and Kneeland Street	7,522	7,943	8,244	8,235			625	660	685	684
3 Washington Street - between Herald Street and Mass Ave	7,522	7,943	8,244	8,235			625	660	685	684
4 Herald Street - between Washington Street and Harrison Ave	16,669	18,053	18,174	18,170			1385	1500	1510	1510
5 Harrison Ave - between Herald Street and Kneeland Street	4,333	4,814	5,055	5,047			360	400	420	419
6 Harrison Ave - between Herald Street and Traveler Street	7,282	8,064	8,666	8,647			605	670	720	718
7 Herald Street - between Harrison Ave and Albany Street	17,933	19,257	19,257	19,257			1490	1600	1600	1600
8 Albany Street - north of Herald Street	17,692	19,317	20,460	20,425			1470	1605	1700	1697
9 Albany Street - between Herald Street and I-93 SB On-ramp	35,625	38,574	39,717	39,682			2960	3205	3300	3297
10 Albany Street - between I-93 SB On-Ramp and Traveler Street	24,974	27,140	28,344	28,306			2075	2255	2355	2352
11 Albany Street between Traveler Street and East Berkeley Street	11,735	13,239	13,660	13,647			975	1100	1135	1134
12 Albany Street - between East Berkeley Street and Albany Street	10,170	11,133	11,554	11,541			845	925	960	959
13 I-93 NB On-Ramp - north of Traveler Street to I-93	17,391	18,715	19,377	19,357			1445	1555	1610	1608
14 I-93 NB On-Ramp - between Traveler Street and West 4th Street	12,818	14,021	14,021	14,021			1065	1165	1165	1165
15 I-93 NB On-Ramp - between West 4th Street and Mass Ave Connector	20,160	22,025	22,507	22,492			1675	1830	1870	1869
16 Mullins Way - between Washington Street and Harrison Ave	3,069	3,310	3,370	3,368			255	275	280	280
17 Traveler Street - between Washington Street and Harrison Ave	1,384	1,504	1,745	1,738			115	125	145	144
18 Traveler Street - between Harrison Ave and Albany Street	4,212	5,416	8,004	7,923			350	450	665	658
19 East Berkeley Street - between Harrison Ave and Albany Street	12,818	13,961	14,443	14,428			1065	1160	1200	1199
20 Traveler Street - between Albany Street and I-93 NB On-Ramp	15,767	16,970	18,114	18,078			1310	1410	1505	1502
21 East Berkeley Street - between Albany Street and I-93 NB On-Ramp	11,253	12,096	12,637	12,621			935	1005	1050	1049
22 Traveler Street - between I-93 NB On-Ramp and Dorchester Ave	21,002	22,326	22,386	22,384			1745	1855	1860	1860
23 West 4th Street - between I-93 NB On-Ramp and Dorchester Ave	11,855	12,698	12,758	12,756			985	1055	1060	1060
24 Harrison Ave- between East Berkeley Street and Mass. Ave	9,869	10,712	11,133	11,120			820	890	925	924
25 I-90 EB On-Ramp - north of Traveler Street to I-90	7,282	8,004	8,425	8,412			605	665	700	699
26 East Berkeley Street - west of Harrison Ave	10,952	11,855	12,216	12,205			910	985	1015	1014
27 Site Drive North - Albany Street	0	0	120	117			0	0	10	10
28 Site Drive South - Harrison Ave	0	0	963	933			0	0	80	78
29 Site Drive -Traveler Street	0	0	4,850	4,700			0	0	403	391
30 Site Drive - No Data	0	0	0	0			0	0	0	0
31 I-90 - west of 93	950,460	1,049,385	1,049,385	1,049,385			78,971	87,190	87,190	87190
32 I-90 - east of 93	425,253	469,513	469,513	469,513			35,333	39,010	39,010	39010
33 I-93 - north of 90	954,420	1,053,757	1,053,757	1,053,757			79,300	87,554	87,554	87554
34 I-93 - south of 90	511,511	564,750	564,750	564,750			42,500	46,923	46,923	46923

# Commuter Results



## COMMUTER MODEL RESULTS

### SCENARIO INFORMATION

Description	
Scenario Filename	
Emission Factor File	
Performing Agency	
Analyst	
Metropolitan Area	
Area Size	2 - Medium (750,000 to 2 million)
Analysis Scope	2 - Site or Employer-Based
Analysis Area/Site	
Total Employment	220

### PROGRAMS EVALUATED

<input type="checkbox"/>	Site Walk Access Improvements
<input type="checkbox"/>	Transit Service Improvements
<input checked="" type="checkbox"/>	Financial Incentives
<input checked="" type="checkbox"/>	Employer Support Programs
<input type="checkbox"/>	Alternative Work Schedules
<input type="checkbox"/>	User-Supplied Final Mode Shares

### MODE SHARE IMPACTS

Mode	Baseline	Final	%Change
Drive Alone	58.0%	55.6%	-2.4%
Carpool	1.0%	1.9%	+0.9%
Vanpool	0.0%	1.0%	+1.0%
Transit	25.0%	25.4%	+0.4%
Bicycle	6.0%	6.2%	+0.2%
Pedestrian	6.0%	6.0%	+0.0%
Other	4.0%	3.8%	-0.2%
No Trip	-	0.0%	+0.0%
Total	100.0%	100.0%	-

Shifted from Peak to Off-Peak	0.0%
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### TRAVEL IMPACTS (relative to affected employment)

Quantity	Peak	Off-Peak	Total
Baseline VMT	2,260	1,421	3,681
Final VMT	2,187	1,375	3,563
VMT Reduction	73	46	119
% VMT Reduction	3.2%	3.2%	3.2%
Baseline Trips	158	99	257
Final Trips	153	96	249
Trip Reduction	5	3	8
% Trip Reduction	3.1%	3.1%	3.1%

### EMISSION REDUCTIONS (positive values are decreases)

lbs/day:

Pollutant	Peak	Off-Peak	Total
HC			
CO			
NOx			
PM2.5			
Toxics			
Acetaldehyde			
Acrolein			
Benzene			
1, 3-Butadiene			
Formaldehyde			
MTBE			
CO2			

tons/day:

Pollutant	Peak	Off-Peak	Total
HC			
CO			
NOx			
CO2 (metric tons)			

### GASOLINE CONSUMPTION AND COST SAVINGS

Reduction in gasoline consumption (gallons/day)	
Gasoline cost savings (\$/day)	



*Vanasse Hangen Brustlin, Inc.*