

Accurate Counts

978-664-2565

File Name : 7810PEDI
 Site Code : 78100001
 Start Date : 5/10/2018
 Page No : 8

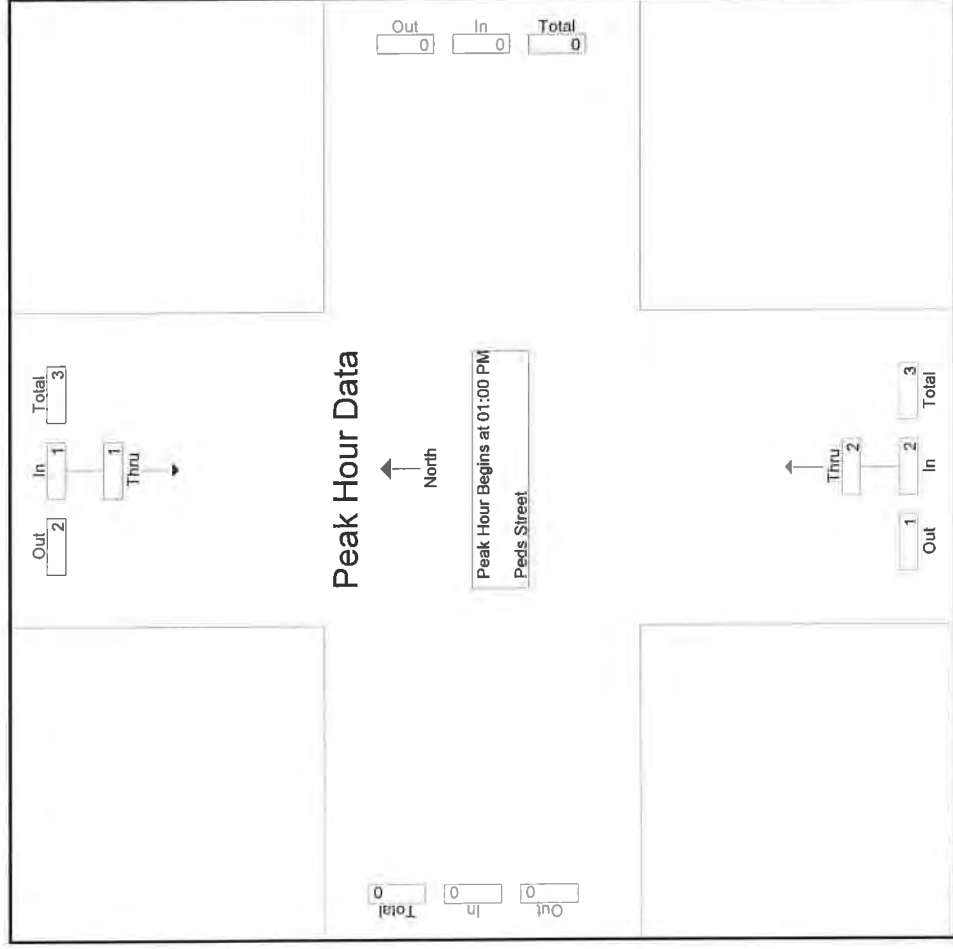
N/S Street : First Street
 EW Street : PED/BIKE Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

Start Time	From North		From East		From South		From West		Int. Total
	SB	App. Total	App. Total		NB	App. Total	App. Total		
Peak Hour Analysis From 10:00 AM to 01:45 PM – Peak 1 of 1									
Peak Hour for Entire Intersection Begins at 01:00 PM									
01:00 PM	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	1	1	0	0	1
01:30 PM	0	0	0	0	1	1	0	0	1
01:45 PM	1	1	0	0	0	0	0	0	1
Total Volume	1	1	0	0	2	2	0	0	3
% App. Total	100				100				
PHF	.250	.250	.000	.000	.500	.500	.000	.000	.750

Accurate Counts 978-664-2565

N/S Street : First Street
 E/W Street : PED/BIKE Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

File Name : 7810PED1
 Site Code : 78100001
 Start Date : 5/10/2018
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Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	10:45 AM	10:00 AM	12:45 PM	10:00 AM
+0 mins.	0	0	0	0
+15 mins.	0	0	0	0
+30 mins.	0	0	0	0
+45 mins.	1	1	0	1
Total Volume	1	1	0	2
% App. Total	100		100	

Accurate Counts

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File Name : 7810PEDI
Site Code : 7810000I
Start Date : 5/10/2018
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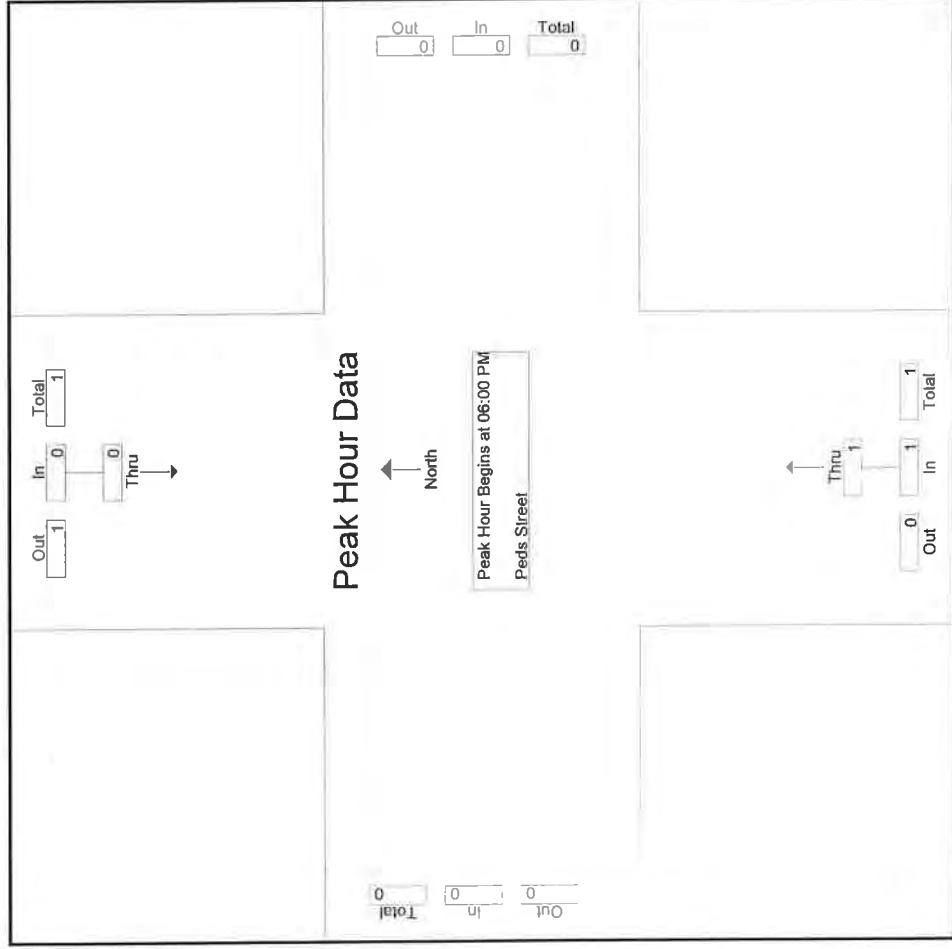
N/S Street : First Street
E/W Street : PED/BIKE Count ATR 1
City/State : Cambridge, MA
Weather : Cloudy

Start Time	From North		From East		From South		From West		Int. Total
	SB	App. Total	App. Total	NB	App. Total	App. Total	App. Total		
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1									
Peak Hour for Entire Intersection Begins at 06:00 PM									
06:00 PM	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	1	0	1	0	0	1
Total Volume	0	0	0	1	1	1	0	0	1
% App. Total	0			100					
PHF	.000	.000	.000	.250	.250	.250	.000	.250	.250

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File Name : 7810PEDI
Site Code : 78100001
Start Date : 5/10/2018
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N/S Street : First Street
EW Street : PED/BIKE Count ATR I
City/State : Cambridge, MA
Weather : Cloudy



Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM	02:00 PM	06:00 PM	02:00 PM
+0 mins.	0	0	0	0
+15 mins.	0	0	0	0
+30 mins.	0	0	0	0
+45 mins.	0	0	0	0
Total Volume	0	0	1	1
% App. Total	0	0	100	0

Accurate Counts

978-664-2565

N/S Street : First Street
 E/W Street : PED/BIKE Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

File Name : 7810PEDI
 Site Code : 78100001
 Start Date : 5/10/2018
 Page No : 1

Groups Printed- Peds SW

Start Time	From East			From West			Int. Total
	SB	WB	NB	NB	EB	SB	
07:00 AM	5	4	2	1	2	5	19
07:15 AM	1	1	2	0	1	6	11
07:30 AM	12	1	4	5	0	7	29
07:45 AM	20	1	6	6	0	14	47
Total	38	7	14	12	3	32	106
08:00 AM	22	0	8	6	0	8	44
08:15 AM	15	0	14	2	0	12	43
08:30 AM	17	1	8	9	0	8	43
08:45 AM	26	2	16	6	0	14	64
Total	80	3	46	23	0	42	194
09:00 AM	30	0	17	3	0	16	66
09:15 AM	13	3	8	4	0	17	45
09:30 AM	16	2	8	1	1	7	35
09:45 AM	17	0	7	2	2	6	34
Total	76	5	40	10	3	46	180
10:00 AM	12	0	5	6	2	9	34

Accurate Counts

978-664-2565

N/S Street : First Street
 E/W Street : PED/Bike Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

File Name : 7810PED1
 Site Code : 78100001
 Start Date : 5/10/2018
 Page No : 2

Groups Printed- Peds SW

Start Time	From East			From West			Int. Total
	SB	WB	NB	NB	EB	SB	
10:15 AM	9	0	8	6	1	7	31
10:30 AM	14	0	13	0	1	8	36
10:45 AM	9	5	11	1	6	2	34
Total	44	5	37	13	10	26	135
11:00 AM	10	1	14	9	0	9	43
11:15 AM	12	0	11	2	0	5	30
11:30 AM	8	0	10	7	0	8	33
11:45 AM	18	2	7	18	1	29	75
Total	48	3	42	36	1	51	181
12:00 PM	25	1	15	11	4	29	85
12:15 PM	16	3	30	29	1	16	95
12:30 PM	22	0	37	15	1	24	99
12:45 PM	37	0	34	7	1	30	109
Total	100	4	116	62	7	99	388
01:00 PM	23	1	32	24	3	7	90
01:15 PM	30	2	42	16	4	11	105
01:30 PM	31	0	21	9	1	9	71
01:45 PM	19	1	21	2	2	0	45
Total	103	4	116	51	10	27	311

Accurate Counts

978-664-2565

File Name : 7810PED1
Site Code : 78100001
Start Date : 5/10/2018
Page No : 3

N/S Street : First Street
EW Street : PED/BIKE Count ATR I
City/State : Cambridge, MA
Weather : Cloudy

Groups Printed- Peds SW

Start Time	From East			From West			Int. Total
	SB	WB	NB	NB	EB	SB	
02:00 PM	19	0	26	4	1	9	59
02:15 PM	14	0	10	2	0	6	32
02:30 PM	24	0	16	10	4	14	68
02:45 PM	15	0	17	6	0	2	40
Total	72	0	69	22	5	31	199
03:00 PM	18	0	17	15	0	5	55
03:15 PM	12	0	28	16	0	5	61
03:30 PM	21	0	13	7	0	8	49
03:45 PM	15	1	25	14	5	4	64
Total	66	1	83	52	5	22	229
04:00 PM	18	1	22	17	2	4	64
04:15 PM	15	2	27	15	0	10	69
04:30 PM	8	4	34	11	0	4	61
04:45 PM	15	2	27	17	3	6	70
Total	56	9	110	60	5	24	264
05:00 PM	15	0	43	20	1	10	89
05:15 PM	26	1	32	24	1	25	109
05:30 PM	13	0	35	25	1	11	85

Accurate Counts

978-664-2565

File Name : 7810PEDI
Site Code : 78100001
Start Date : 5/10/2018
Page No : 4

N/S Street : First Street
E/W Street : PED/BIKE Count ATR I
City/State : Cambridge, MA
Weather : Cloudy

Groups Printed- Peds SW

Start Time	From East			From West			Int. Total
	SB	WB	NB	NB	EB	SB	
05:45 PM	30	0	33	14	3	16	96
Total	84	1	143	83	6	62	379
06:00 PM	31	0	24	16	1	17	89
06:15 PM	19	1	30	9	2	10	71
06:30 PM	16	1	11	14	0	15	57
06:45 PM	23	2	21	6	0	14	66
Total	89	4	86	45	3	56	283
Grand Total	856	46	902	469	58	518	2849
Apprch %	47.5	2.5	50	44.9	5.6	49.6	
Total %	30	1.6	31.7	16.5	2	18.2	

Accurate Counts

978-664-2565

N/S Street : First Street
 EW Street : PED/BIKE Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

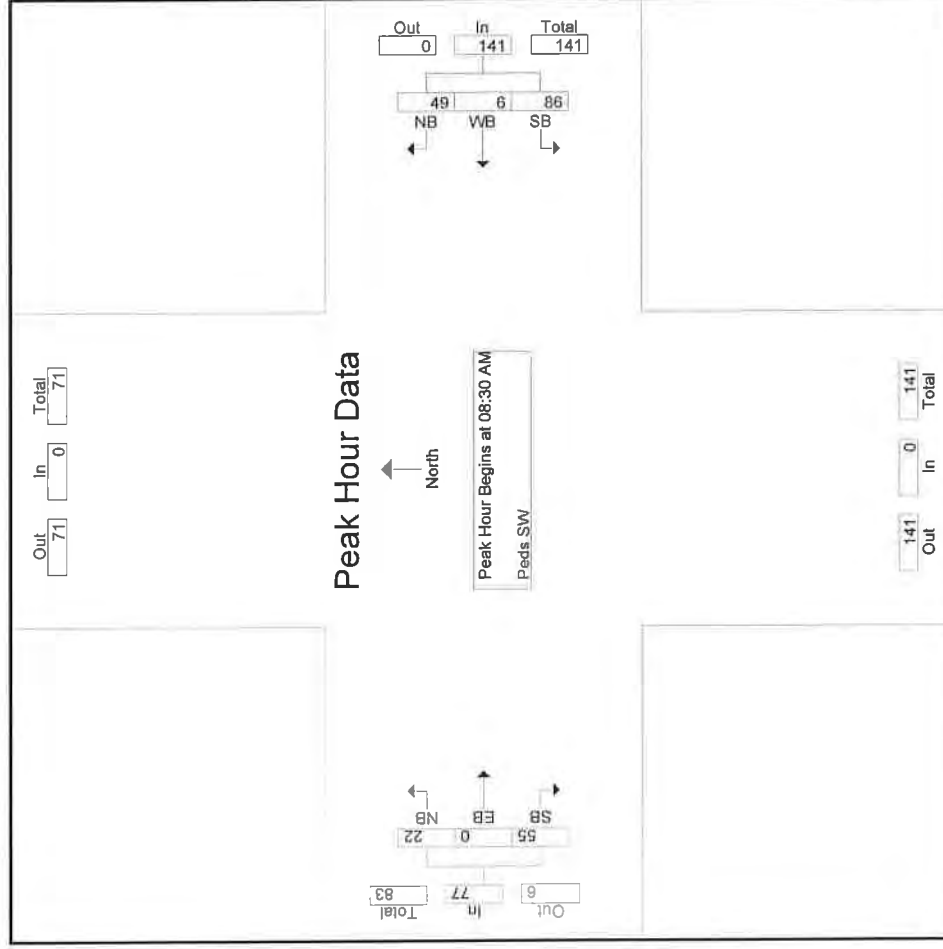
File Name : 7810PEDI
 Site Code : 78100001
 Start Date : 5/10/2018
 Page No : 5

Start Time	From North		From East				From South		From West			
	App. Total	SB	WB	NB	App. Total	App. Total	App. Total	NB	EB	SB	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1												
Peak Hour for Entire Intersection Begins at 08:30 AM												
08:30 AM	0	17	1	8	26		0	9	0	8	17	43
08:45 AM	0	26	2	16	44		0	6	0	14	20	64
09:00 AM	0	30	0	17	47		0	3	0	16	19	66
09:15 AM	0	13	3	8	24		0	4	0	17	21	45
Total Volume	0	86	6	49	141		0	22	0	55	77	218
% App. Total	.000	61	4.3	34.8				28.6	0	71.4		
PHF		.717	.500	.721	.750		.000	.611	.000	.809	.917	.826

Accurate Counts 978-664-2565

File Name : 7810PED1
Site Code : 78100001
Start Date : 5/10/2018
Page No : 6

N/S Street : First Street
EW Street : PED/BIKE Count ATR I
City/State : Cambridge, MA
Weather : Cloudy



Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM	08:15 AM	08:30 AM	07:00 AM	08:30 AM
+0 mins.	0	15	0	9	8
+15 mins.	0	17	0	6	14
+30 mins.	0	26	0	3	16
+45 mins.	0	30	0	4	17
Total Volume	0	88	0	22	55
% App. Total	60.3	2.1	37.7	28.6	71.4

Accurate Counts

978-664-2565

N/S Street : First Street
E/W Street : PED/BIKE Count ATR 1
City/State : Cambridge, MA
Weather : Cloudy

File Name : 7810PEDI
Site Code : 78100001
Start Date : 5/10/2018
Page No : 8

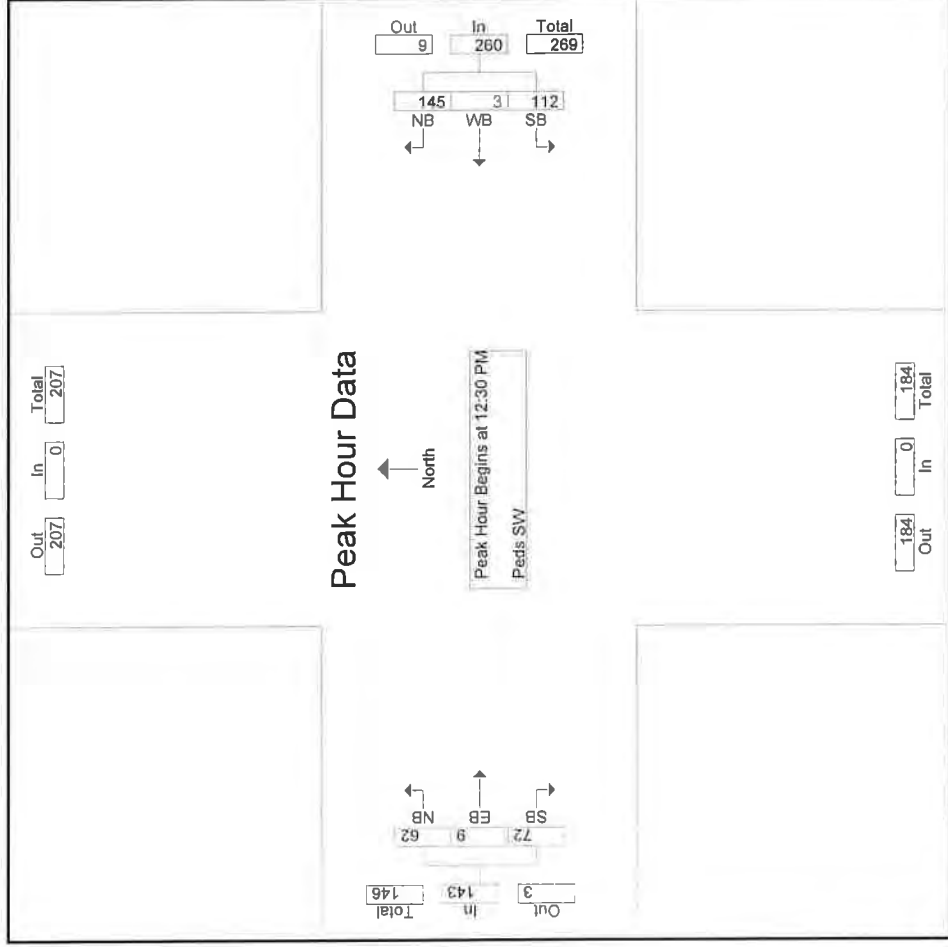
Start Time	From North		From East			From South		From West			Int. Total
	App. Total	SB	WB	NB	App. Total	App. Total	NB	EB	SB		
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 12:30 PM											
12:30 PM	0	22	0	37	59	0	15	1	24	40	99
12:45 PM	0	37	0	34	71	0	7	1	30	38	109
01:00 PM	0	23	1	32	56	0	24	3	7	34	90
01:15 PM	0	30	2	42	74	0	16	4	11	31	105
Total Volume	0	112	3	145	260	0	62	9	72	143	403
% App. Total		43.1	1.2	55.8			43.4	6.3	50.3		
PHF	.000	.757	.375	.863	.878	.000	.646	.563	.600	.894	.924

Accurate Counts

978-664-2565

N/S Street : First Street
 EW Street : PED/Bike Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

File Name : 7810PED1
 Site Code : 78100001
 Start Date : 5/10/2018
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Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	10:00 AM	12:30 PM		10:00 AM	11:45 AM					
+0 mins.	0	22	0	37	59	0	18	1	29	48
+15 mins.	0	37	0	34	71	0	11	4	29	44
+30 mins.	0	23	1	32	56	0	29	1	16	46
+45 mins.	0	30	2	42	74	0	15	1	24	40
Total Volume	0	112	3	145	260	0	73	7	98	178
% App. Total		43.1	1.2	55.8			41	3.9	55.1	

Accurate Counts

978-664-2565

N/S Street : First Street
 EW Street : PED/BIKE Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

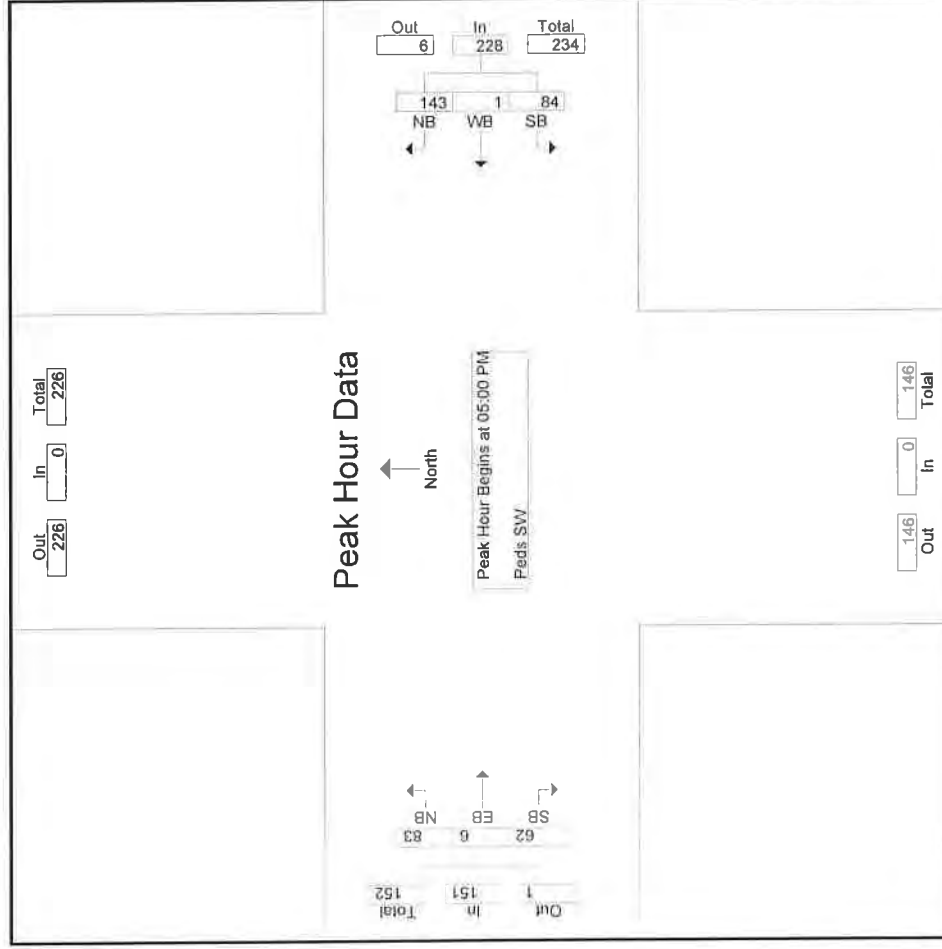
File Name : 7810PEDI
 Site Code : 78100001
 Start Date : 5/10/2018
 Page No : 11

Start Time	From North		From East				From South		From West				Int. Total
	App. Total	SB	WB	NB	App. Total	NB	App. Total	NB	EB	SB	App. Total		
Peak Hour Analysis From 02:00 PM to 06:45 PM – Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	15	0	43	58	0	0	20	1	10	31	89	
05:15 PM	0	26	1	32	59	0	0	24	1	25	50	109	
05:30 PM	0	13	0	35	48	0	0	25	1	11	37	85	
05:45 PM	0	30	0	33	63	0	0	14	3	16	33	96	
Total Volume	0	84	1	143	228	0	0	83	6	62	151	379	
% App. Total		36.8	0.4	62.7				55	4	41.1			
PHF	.000	.700	.250	.831	.905	.000		.830	.500	.620	.755	.869	

Accurate Counts 978-664-2565

File Name : 7810PEDI
Site Code : 78100001
Start Date : 5/10/2018
Page No : 12

N/S Street : First Street
EW Street : PED/BIKE Count ATR I
City/State : Cambridge, MA
Weather : Cloudy



Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM	05:00 PM	05:15 PM	02:00 PM	05:15 PM
+0 mins.	0	15	0	24	1
+15 mins.	0	26	0	25	11
+30 mins.	0	13	0	14	16
+45 mins.	0	30	0	16	17
Total Volume	0	84	0	79	69
% App. Total		36.8		51.3	44.8

978-664-2565

File Name	7810PEDI
Site Code	78100001
Start Date	5/10/2018
Page No	1

Groups Printed- Bikes Street					
Start Time	From North		From South		Int. Total
	SB	NB	From South	NB	
07:00 AM	2	0			2
07:15 AM	1	2			3
07:30 AM	2	0			2
07:45 AM	5	6			11
Total	10	8			18
08:00 AM	7	3			10
08:15 AM	10	7			17
08:30 AM	13	3			16
08:45 AM	4	5			9
Total	34	18			52
09:00 AM	10	3			13
09:15 AM	5	3			8
09:30 AM	6	5			11
09:45 AM	4	4			8
Total	25	15			40
10:00 AM	1	3			4

Accurate Counts

978-664-2565

N/S Street : First Street
 EW Street : PED/BIKE Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

File Name : 7810PEDI
 Site Code : 78100001
 Start Date : 5/10/2018
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Groups Printed- Bikes Street				
Start Time	From North	SB	From South	NB
10:15 AM		1		1
10:30 AM		1		2
10:45 AM		1		1
Total		4		7
11:00 AM		2		3
11:15 AM		0		1
11:30 AM		3		1
11:45 AM		1		1
Total		6		6
12:00 PM		1		1
12:15 PM		6		1
12:30 PM		1		1
12:45 PM		4		1
Total		12		4
01:00 PM		2		0
01:15 PM		0		3
01:30 PM		1		2
01:45 PM		1		2
Total		4		7
Int. Total				
				2
				3
				2
				11
				5
				1
				4
				2
				12
				2
				7
				2
				5
				16
				2
				3
				3
				3
				11

Accurate Counts

978-664-2565

N/S Street : First Street
 EW Street : PED/BIKE Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

File Name : 7810PEDI
 Site Code : 7810000I
 Start Date : 5/10/2018
 Page No : 3

Groups Printed- Bikes Street

Start Time	From North	SB	From South	NB	Int. Total
02:00 PM		2		1	3
02:15 PM		3		1	4
02:30 PM		0		2	2
02:45 PM		2		1	3
Total		7		5	12
03:00 PM		1		2	3
03:15 PM		2		1	3
03:30 PM		6		1	7
03:45 PM		2		1	3
Total		11		5	16
04:00 PM		3		4	7
04:15 PM		4		1	5
04:30 PM		4		2	6
04:45 PM		2		2	4
Total		13		9	22
05:00 PM		5		9	14
05:15 PM		7		4	11
05:30 PM		2		7	9

Accurate Counts

978-664-2565

N/S Street : First Street
 EW Street : PED/BIKE Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

File Name : 7810PEDI
 Site Code : 7810000I
 Start Date : 5/10/2018
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Groups Printed- Bikes Street				
Start Time	From North	SB	From South	NB
05:45 PM		4		6
Total		18		26
				44
06:00 PM		3		5
06:15 PM		5		3
06:30 PM		5		2
06:45 PM		4		1
Total		17		11
				28
Grand Total		161		121
Approch %		100		100
Total %		57.1		42.9
				282

Accurate Counts

978-664-2565

N/S Street : First Street
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 City/State : Cambridge, MA
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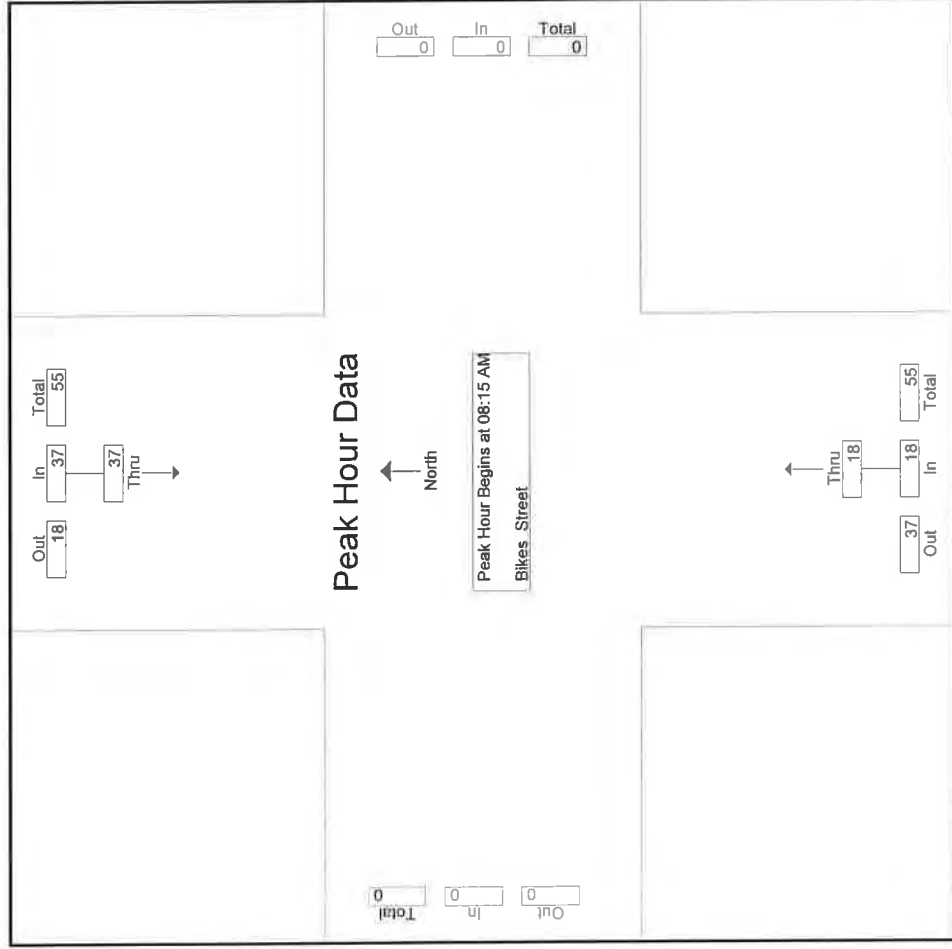
Start Time	From North		From East		From South		From West	
	SB	App. Total	App. Total		NB	App. Total	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 08:15 AM								
08:15 AM	10	10	0		7	7	0	17
08:30 AM	13	13	0		3	3	0	16
08:45 AM	4	4	0		5	5	0	9
09:00 AM	10	10	0		3	3	0	13
Total Volume	37	37	0		18	18	0	55
% App. Total	100				100			
PHF	.712	.712	.000		.643	.643	.000	.809

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 Page No : 6

N/S Street : First Street
 EW Street : PED/BIKE Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy



Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:15 AM	07:00 AM	07:45 AM	07:00 AM
+0 mins.	10	10	0	6
+15 mins.	13	13	0	3
+30 mins.	4	4	0	7
+45 mins.	10	10	0	3
Total Volume	37	37	0	19
% App. Total	100	100		0

Accurate Counts

978-664-2565

N/S Street : First Street
 EW Street : PED/BIKE Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

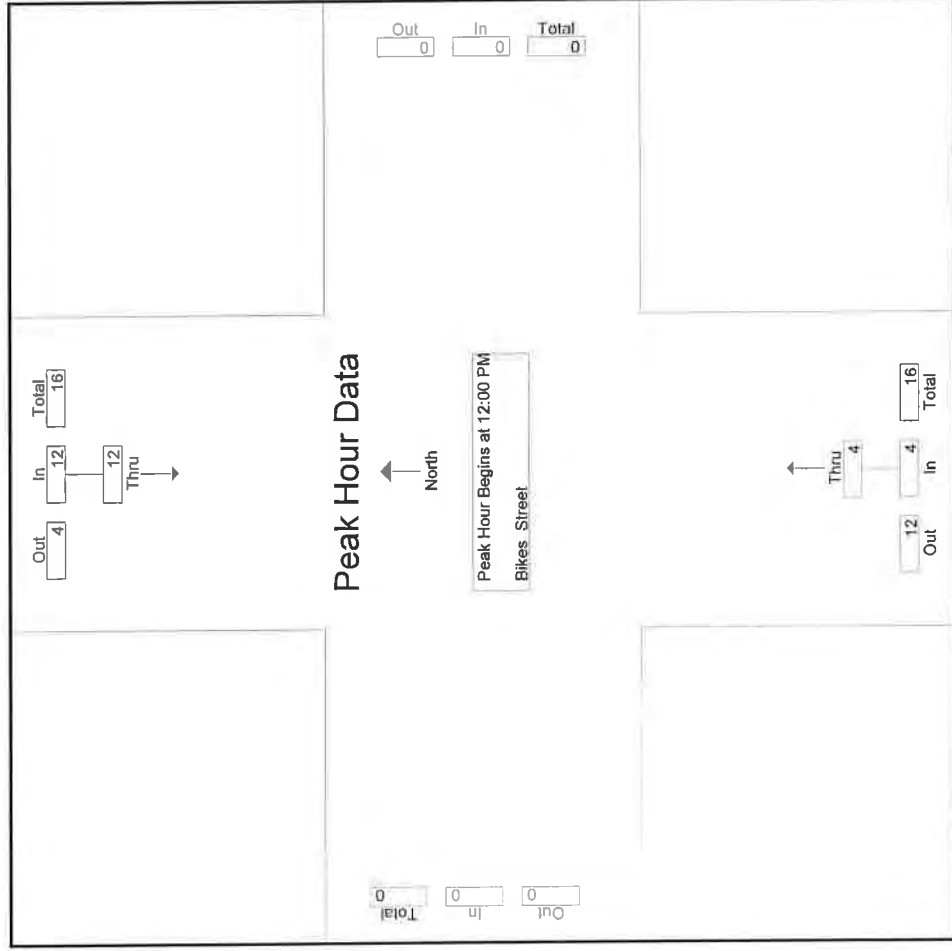
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	From North		From East		From South		From West	
Start Time	SB	App. Total	App. Total	NB	App. Total	App. Total	Int. Total	
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 12:00 PM								
12:00 PM	1	1	0	1	1	0	2	
12:15 PM	6	6	0	1	1	0	7	
12:30 PM	1	1	0	1	1	0	2	
12:45 PM	4	4	0	1	1	0	5	
Total Volume	12	12	0	4	4	0	16	
% App. Total	100			100				
PHF	.500	.500	.000	1.00	1.00	.000	.571	

Accurate Counts 978-664-2565

N/S Street : First Street
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 City/State : Cambridge, MA
 Weather : Cloudy

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Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	12:15 PM	10:00 AM	10:00 AM	10:00 AM	10:00 AM
+0 mins.	6	6	0	3	0
+15 mins.	1	1	0	1	0
+30 mins.	4	4	0	2	0
+45 mins.	2	2	0	1	0
Total Volume	13	13	0	7	0
% App. Total	100			100	

Accurate Counts

978-664-2565

N/S Street : First Street
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 City/State : Cambridge, MA
 Weather : Cloudy

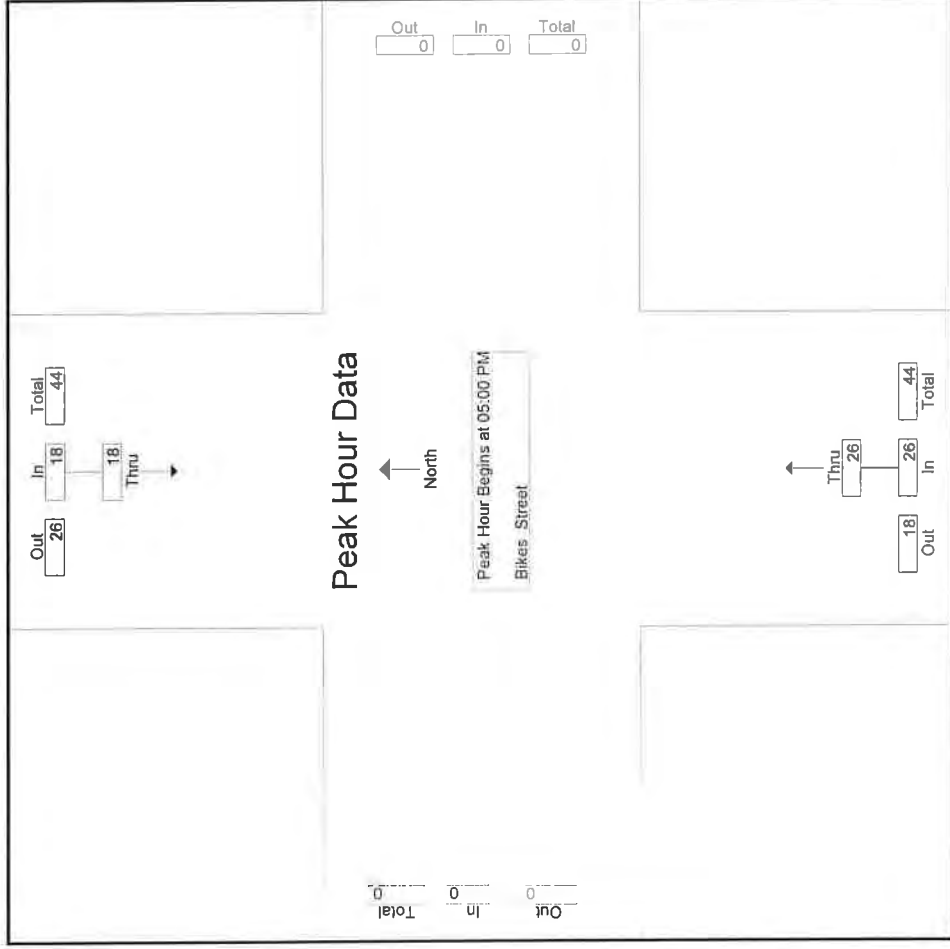
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 Site Code : 7810000I
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 Page No : 11

Start Time	From North		From East		From South		From West		Int. Total
	SB	App. Total	App. Total		NB	App. Total	App. Total		
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1									
Peak Hour for Entire Intersection Begins at 05:00 PM									
05:00 PM	5	5	0		9	9	0		14
05:15 PM	7	7	0		4	4	0		11
05:30 PM	2	2	0		7	7	0		9
05:45 PM	4	4	0		6	6	0		10
Total Volume	18	18	0		26	26	0		44
% App. Total	100				100				
PHF	.643	.643	.000		.722	.722	.000		.786

Accurate Counts 978-664-2565

File Name : 7810PEDI
Site Code : 78100001
Start Date : 5/10/2018
Page No : 12

N/S Street : First Street
EW Street : PED/BIKE Count ATR I
City/State : Cambridge, MA
Weather : Cloudy



Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM	02:00 PM	05:00 PM	02:00 PM	
+0 mins.	4	4	0	9	0
+15 mins.	2	2	0	4	0
+30 mins.	5	5	0	7	0
+45 mins.	7	7	0	6	0
Total Volume	18	18	0	26	0
% App. Total	100			100	

Accurate Counts 978-664-2565

N/S Street : First Street
E/W Street : PED/BIKE Count ATR I
City/State : Cambridge, MA
Weather : Cloudy

File Name : 7810PEDI
Site Code : 7810000I
Start Date : 5/10/2018
Page No : 1

Groups Printed- Bikes SW

Start Time	From East			From West			Int. Total
	SB	WB	NB	NB	EB	SB	
07:00 AM	0	1	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	1
08:00 AM	0	0	0	0	0	1	1
08:15 AM	0	0	0	0	0	0	0
08:30 AM	0	0	1	0	0	0	1
08:45 AM	0	0	0	0	0	0	0
Total	0	0	1	0	0	1	2
09:00 AM	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : First Street
 EW Street : PED/BIKE Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

File Name : 7810PEDI
 Site Code : 7810000I
 Start Date : 5/10/2018
 Page No : 2

Groups Printed- Bikes SW

Start Time	From East			From West			Int. Total
	SB	WB	NB	NB	EB	SB	
10:15 AM	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0
11:30 AM	0	0	1	0	0	0	1
11:45 AM	0	0	0	0	0	0	0
Total	0	0	1	0	0	0	1
12:00 PM	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0
12:30 PM	1	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0
Total	1	0	0	0	0	0	1
01:00 PM	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0
01:45 PM	1	0	0	0	0	0	1
Total	1	0	0	0	0	0	1

Accurate Counts

978-664-2565

N/S Street : First Street
 E/W Street : PED/BIKE Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

File Name : 7810PEDI
 Site Code : 7810000I
 Start Date : 5/10/2018
 Page No : 3

Groups Printed- Bikes SW

Start Time	From East		From West			Int. Total
	SB	WB	NB	NB	EB	
02:00 PM	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0
Total	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0
03:15 PM	0	0	1	0	0	1
03:30 PM	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0
Total	0	0	1	0	0	1
04:00 PM	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0
04:30 PM	1	0	0	0	0	1
04:45 PM	0	0	0	0	0	0
Total	1	0	0	0	0	1
05:00 PM	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0
05:30 PM	1	0	0	0	0	1

Accurate Counts

978-664-2565

File Name : 7810PEDI
Site Code : 78100001
Start Date : 5/10/2018
Page No : 4

N/S Street : First Street
EW Street : PED/BIKE Count ATR I
City/State : Cambridge, MA
Weather : Cloudy

Groups Printed- Bikes SW

Start Time	From East		From West		Int. Total
	SB	WB	NB	EB	
05:45 PM	0	0	0	0	0
Total	1	0	0	0	1
06:00 PM	0	0	0	0	0
06:15 PM	0	0	0	0	0
06:30 PM	0	0	0	0	0
06:45 PM	0	0	0	0	0
Total	0	0	0	0	0
Grand Total	4	1	3	0	9
Apprch %	50	12.5	37.5	0	100
Total %	44.4	11.1	33.3	0	11.1

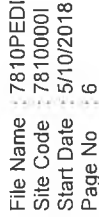
Accurate Counts

978-664-2565

N/S Street : First Street
 E/W Street : PED/BIKE Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

File Name : 7810PEDI
 Site Code : 78100001
 Start Date : 5/10/2018
 Page No : 5

Start Time	From North		From East				From South		From West			
	App. Total	SB	WB	NB	App. Total	NB	App. Total	NB	EB	SB	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 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	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	1	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	1	1	1	0	0	0	0	0	1
Total Volume	0	0	0	1	1	0	0	0	0	1	1	2
% App. Total	0	0	0	100	0	0	0	0	0	100	0	0
PHF	.000	.000	.000	.250	.250	.000	.000	.000	.000	.250	.250	.500



File Name : 7810PED1
Site Code : 78100001
Start Date : 5/10/2018
Page No : 6

File Name : 7810PED1
Site Code : 78100001
Start Date : 5/10/2018
Page No : 6

File Name : 7810PED1
Site Code : 78100001
Start Date : 5/10/2018
Page No : 6

978-664-2565

File Name	7810PED1
Site Code	78100001
Start Date	5/10/2018
Page No	8

Start Time	From North		From East				From South		From West			
	App. Total	SB	WB	NB	App. Total	App. Total	NB	EB	SB	App. Total	Int. Total	
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1												
Peak Hour for Entire Intersection Begins at 10:45 AM												
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	
11:30 AM	0	0	0	1	1	0	0	0	0	0	1	
Total Volume	0	0	0	1	1	0	0	0	0	0	1	
% App. Total		0	0	100			0	0	0			
PHF	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.250	

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	10:00 AM	10:45 AM	10:00 AM	10:00 AM
+0 mins.	0	0	0	0
+15 mins.	0	0	0	0
+30 mins.	0	0	0	0
+45 mins.	0	0	1	0
Total Volume	0	0	1	0
% App. Total		0	100	0

Accurate Counts

978-664-2565

N/S Street : First Street
 E/W Street : PED/BIKE Count ATR I
 City/State : Cambridge, MA
 Weather : Cloudy

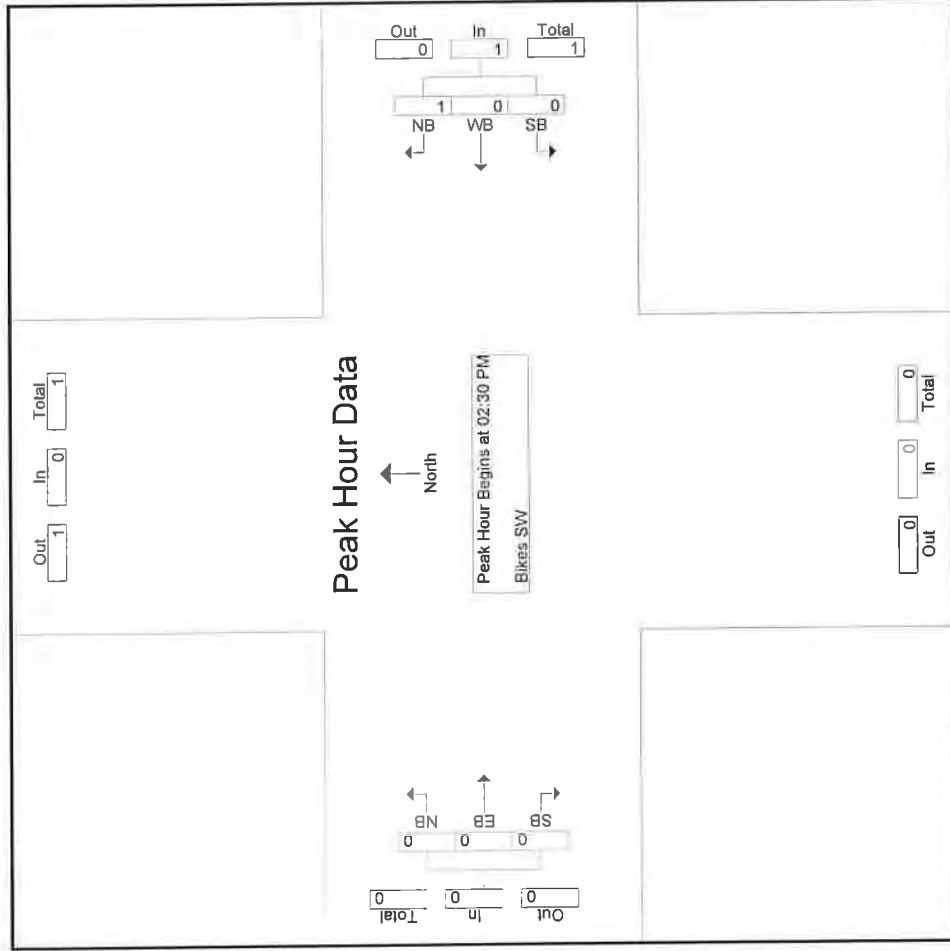
File Name : 7810PED1
 Site Code : 78100001
 Start Date : 5/10/2018
 Page No : 11

Start Time	From North		From East				From South		From West				Int. Total
	App. Total	SB	WB	NB	App. Total	App. Total	NB	EB	SB	App. Total			
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 02:30 PM													
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
03:15 PM	0	0	0	1	1	0	0	0	0	0	0	1	
Total Volume	0	0	0	1	1	0	0	0	0	0	0	1	
% App. Total		0	0	100			0	0	0				
PHF	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250	

Accurate Counts 978-664-2565

File Name : 7810PEDI
Site Code : 78100001
Start Date : 5/10/2018
Page No : 12

N/S Street : First Street
E/W Street : PED/BIKE Count ATR I
City/State : Cambridge, MA
Weather : Cloudy



Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM	02:30 PM	02:00 PM	02:00 PM
+0 mins.	0	0	0	0
+15 mins.	0	0	0	0
+30 mins.	0	0	0	0
+45 mins.	0	0	1	0
Total Volume	0	0	1	0
% App. Total	0	0	100	0

Vehicle Queue Count Data

Time	Land Boulevard				Land Boulevard				CambridgeSide Place			Hotel Driveway
	SB LT	SB TH	SB TH	SB TH/RT	NB TH/RT	NB TH	NB TH	NB LT	EB RT	EB LT/TH	EB LT	WB LT/TH/RT
7:30 AM	12	12	13	6	3	3	3	6	0	2	2	0
	8	10	10	3	2	2	3	2	0	0	2	0
	4	6	10	2	0	2	2	2	0	3	2	1
	6	12	8	0	2	3	2	0	0	1	3	0
	4	8	7	1	3	4	2	4	0	0	1	0
7:45 AM	8	6	9	0	1	2	1	2	0	2	3	2
	12	12	10	0	2	4	4	3	0	4	3	0
	8	12	8	0	3	4	4	2	0	3	2	0
	8	6	12	0	2	2	3	0	0	3	4	2
	6	11	14	0	0	3	4	4	0	2	3	3
	9	9	10	1	3	2	2	2	0	1	2	0
	8	13	10	1	2	3	1	1	0	2	1	0
	5	6	8	0	2	2	2	2	0	3	3	1
	11	9	7	3	1	4	3	0	0	0	2	0
	10	8	10	6	2	4	2	2	0	2	4	0
8:00 AM	10	9	10	4	1	2	2	1	0	2	4	2
	9	12	12	2	1	3	1	2	0	3	3	2
	12	12	12	2	0	4	4	1	0	4	5	0
	8	10	14	1	3	6	2	2	0	2	6	2
	11	14	12	2	2	4	1	2	0	3	4	0
	10	10	12	0	2	3	5	1	0	2	3	1
	12	11	10	2	3	4	3	3	0	4	4	0
	11	8	10	2	3	4	2	2	0	3	4	0
	10	10	10	1	6	4	2	2	0	3	3	2
	12	12	12	0	3	3	4	1	0	4	2	2
8:15 AM	12	9	14	0	2	2	3	2	0	3	2	3
	11	13	13	2	1	3	3	1	0	3	4	0
	8	14	12	3	0	2	4	2	0	4	2	0
	10	14	14	0	2	3	5	0	0	2	1	1
	9	12	12	2	3	3	4	3	0	1	2	0
8:30 AM	6	4	6	0	3	1	0	0	0	2	2	0
	12	10	10	0	4	4	4	2	0	1	3	1
	8	10	10	1	2	4	3	4	0	3	3	1
	4	7	6	1	3	3	4	2	0	3	3	1
	6	9	10	0	4	4	4	4	0	2	4	0
	10	12	12	0	5	3	4	2	0	2	2	0
	8	10	9	1	4	4	3	1	0	1	3	0
	12	14	11	0	2	3	3	3	0	3	2	1
	8	10	8	3	5	4	4	3	0	3	3	0
	11	13	10	2	2	4	2	2	0	4	2	1
8:45 AM	5	7	4	2	3	3	2	1	0	3	3	1
	4	8	6	1	2	1	1	2	0	4	4	0
	5	5	8	1	1	2	3	1	0	2	2	3
	8	6	7	2	1	4	1	1	0	2	3	0
	6	5	5	3	2	3	2	1	0	3	4	1
9:00 AM	7	11	8	3	3	4	3	2	0	2	4	0
	10	9	9	2	3	4	2	0	0	2	2	1
	16	8	8	1	0	2	5	1	0	3	3	0
	14	12	6	0	0	3	4	3	0	4	4	1
	13	10	7	2	0	4	3	0	0	3	2	0
	12	8	7	1	2	3	4	1	0	3	3	0
	10	9	5	0	1	4	3	0	0	2	1	0
	10	7	4	0	3	5	3	3	0	1	3	0
	9	6	6	1	3	3	3	1	0	2	3	2
	12	8	5	0	2	4	3	2	0	0	2	0
9:15 AM	8	9	8	2	0	3	2	2	0	3	3	1
	11	9	6	2	1	2	3	3	0	2	2	0
	10	7	7	0	4	3	3	0	0	0	0	0
	11	6	8	2	2	2	4	2	0	2	2	1

Time	Land Boulevard				Land Boulevard				CambridgeSide Place			Hotel Driveway
	SB LT	SB TH	SB TH	SB TH/RT	NB TH/RT	NB TH	NB TH	NB LT	EB RT	EB LT/TH	EB LT	WB LT/TH/RT
4:30 PM	4	10	10	3	2	10	13	3	0	11	11	0
	2	6	10	2	1	9	10	6	0	10	8	2
	0	6	5	1	5	10	10	6	0	12	11	2
	2	8	7	0	3	11	16	4	0	6	7	1
	3	8	10	2	2	11	12	5	0	5	6	1
	2	7	7	2	0	8	10	4	0	3	6	0
	3	8	10	2	3	10	12	3	0	8	8	0
	5	12	10	3	2	12	12	5	0	7	7	0
4:45 PM	6	10	10	2	4	11	8	10	0	10	10	4
	3	9	10	4	4	12	10	6	0	8	10	3
	3	12	10	4	3	10	12	8	0	10	8	2
	4	10	8	3	5	10	12	8	0	9	8	0
	4	11	10	2	2	12	10	8	0	8	6	0
	6	13	6	3	5	10	10	6	0	7	8	3
	4	10	12	2	3	11	12	7	0	6	6	2
	3	8	10	4	4	10	10	5	0	6	5	0
5:00 PM	8	7	10	3	4	12	10	8	0	8	8	0
	8	7	8	3	6	10	11	6	0	8	10	0
	6	8	10	4	4	12	13	8	0	6	10	0
	5	9	8	2	4	13	12	6	0	7	7	3
	4	4	10	3	2	11	12	7	0	8	7	3
	6	7	9	3	4	10	10	5	0	6	6	0
	8	4	8	2	1	9	10	5	0	5	7	2
	4	5	6	2	2	10	11	7	0	2	6	1
5:15 PM	4	6	6	2	1	12	10	6	0	7	10	4
	5	4	6	2	3	9	10	6	0	9	10	3
	2	5	6	2	0	7	8	6	0	8	8	2
	8	12	8	1	0	5	6	5	0	6	9	0
	6	12	6	2	2	7	8	7	0	6	8	0
	5	10	7	3	2	8	9	7	0	7	9	2
	4	11	6	2	1	7	7	8	0	6	8	1
	5	8	9	1	3	10	8	6	0	7	9	0
5:30 PM	3	4	5	1	2	8	12	8	0	10	10	0
	2	3	4	4	3	12	12	7	0	9	11	2
	3	8	5	4	3	9	12	8	0	8	11	0
	2	7	10	3	2	10	13	8	0	11	12	0
	3	8	10	2	4	10	10	9	0	11	12	0
	4	6	9	3	4	8	12	8	0	8	7	1
	2	7	8	3	4	10	14	10	0	7	8	1
	3	6	6	3	3	10	13	6	0	8	9	1
5:45 PM	6	7	9	5	4	16	16	15	0	12	12	4
	3	10	9	4	4	15	16	13	0	8	11	0
	3	8	12	3	4	16	18	14	0	8	12	3
	5	8	8	4	3	16	16	16	0	10	12	2
	5	8	9	3	4	16	14	14	0	9	10	2
	6	7	10	2	2	15	15	11	0	8	10	0
	5	7	10	2	4	16	14	12	0	8	11	1
	5	6	9	3	3	13	13	13	0	7	9	1
6:00 PM	5	7	7	4	6	14	16	16	0	7	11	2
	4	6	6	3	5	16	16	12	0	12	12	5
	3	5	7	4	4	18	17	10	0	11	11	3
	3	8	10	3	6	18	14	15	0	10	11	1
	4	6	9	4	5	17	15	15	0	9	10	0
	6	6	7	4	6	18	14	14	0	8	11	1
	5	5	8	3	4	16	11	13	0	7	10	3
	4	6	5	2	3	12	12	14	0	7	10	2
6:15 PM	4	6	6	3	2	10	11	10	0	8	7	1
	4	5	8	2	2	9	11	11	0	8	6	3
	4	4	6	4	3	8	8	8	0	6	6	2
	3	4	4	2	3	9	7	8	0	4	6	2
	2	4	8	3	3	7	8	7	0	3	5	3
	3	3	5	2	4	8	6	6	0	5	7	0
	4	5	6	3	2	6	5	5	0	4	9	0
	3	7	6	2	3	8	4	3	0	3	7	1

Time	Land Boulevard				Land Boulevard				CambridgeSide Place			Hotel Driveway
	SB LT	SB TH	SB TH	SB TH/RT	NB TH/RT	NB TH	NB TH	NB LT	EB RT	EB LT/TH	EB LT	WB LT/TH/RT
11:00 AM	2	3	4	6	1	4	3	5	2	3	0	0
	1	2	3	6	6	5	3	1	4	4	0	0
	1	4	2	5	5	4	4	1	0	3	0	0
	1	6	4	4	3	4	2	2	3	2	0	1
	0	4	5	3	2	2	1	0	2	1	0	2
	1	3	1	1	1	0	0	3	3	2	0	0
	2	3	2	2	1	2	2	4	0	1	0	0
	2	3	2	2	1	2	2	4	0	1	0	0
11:15 AM	2	4	5	5	2	2	3	4	3	2	1	0
	2	6	6	4	3	4	2	3	2	3	0	0
	3	5	8	3	2	2	2	3	4	1	0	1
	2	3	6	6	1	1	1	5	2	0	0	0
	1	2	4	3	3	2	5	3	1	1	0	0
	0	3	3	2	2	1	4	2	2	0	0	1
	1	3	1	5	3	0	2	2	3	3	0	0
	1	3	1	5	3	0	2	2	3	3	0	0
11:30 AM	1	2	3	7	2	6	2	0	3	3	0	0
	0	3	2	6	2	2	3	5	2	5	0	0
	1	5	4	2	1	2	2	0	0	3	0	0
	2	6	7	3	3	1	1	2	2	1	0	0
	1	6	4	5	2	2	2	0	4	1	0	0
	1	3	4	1	3	2	4	4	3	2	0	0
	0	0	2	3	0	0	0	3	1	1	0	1
	0	0	2	3	0	0	0	3	1	1	0	1
11:45 AM	2	5	5	6	1	3	2	5	2	0	1	0
	0	3	5	3	1	4	3	3	3	1	0	0
	2	4	6	8	3	2	3	3	3	1	0	0
	2	3	4	5	3	5	2	4	1	0	0	0
	0	3	1	1	1	1	0	0	8	2	0	1
	2	4	4	6	2	2	4	4	7	1	2	1
	1	4	5	5	4	3	1	1	3	0	0	0
	2	6	7	5	4	2	1	1	7	2	0	0
12:00 PM	3	8	10	7	3	4	5	4	5	0	2	1
	2	5	6	4	3	6	4	3	2	0	0	0
	1	2	5	6	3	5	4	1	9	0	0	2
	1	3	6	8	2	3	6	4	7	2	0	0
	1	4	6	7	3	2	7	2	3	4	0	0
	1	5	7	8	0	4	2	0	1	2	0	2
	2	1	7	5	0	4	2	2	0	5	0	0
	0	2	1	0	0	1	1	0	2	3	0	1
12:15 PM	0	4	6	3	0	5	3	1	3	4	0	3
	3	8	9	5	2	5	6	7	4	2	0	2
	0	0	2	1	0	2	2	1	2	3	0	0
	3	1	3	2	0	3	4	4	2	2	0	0
	2	7	8	7	1	5	6	6	6	5	0	0
	0	3	8	12	2	4	6	2	6	3	0	1
	2	3	6	8	2	3	2	2	3	4	0	1
	0	0	4	3	3	2	0	6	1	1	0	2
12:30 PM	2	2	3	2	1	0	1	2	3	4	0	2
	0	5	6	7	5	7	5	5	1	5	0	0
	3	7	6	8	2	3	5	1	0	4	0	1
	2	8	7	8	1	3	4	3	3	4	0	1
	6	3	7	6	5	6	4	4	4	4	0	0
	4	6	5	6	4	7	5	3	3	4	0	1
	2	5	6	8	5	6	5	5	4	5	0	0
	0	5	8	7	6	7	3	4	6	5	0	0
12:45 PM	2	7	6	6	3	6	6	3	4	4	0	1
	3	6	9	8	0	5	6	4	3	5	0	0
	0	8	7	5	4	7	8	5	4	7	0	0
	0	8	7	5	4	7	8	5	4	7	0	0

Time	First Street NB LT/TH/RT	First Street SB LT/TH/RT	Charles Street EB LT/TH/RT	CambridgeSide Place WB LT/TH/RT
7:30 AM	1	3	3	1
	2	4	4	1
	2	3	3	2
	1	2	2	1
	5	3	3	0
	3	4	2	4
	2	3	0	2
	6	3	1	2
	5	6	3	3
	3	3	2	2
7:45 AM	10	7	4	4
	7	3	3	6
	8	4	5	3
	6	0	3	2
	4	2	6	3
	2	3	3	4
	2	4	2	0
	3	3	0	0
	5	4	0	2
	6	6	2	3
8:00 AM	3	3	2	2
	2	3	1	4
	4	4	2	5
	5	2	3	0
	6	1	2	3
	9	0	4	4
	7	6	3	4
	6	3	2	3
	3	4	1	2
	2	3	0	0
8:15 AM	0	3	0	4
	0	3	2	3
	1	3	2	3
	2	0	3	2
	3	4	2	4
	2	3	3	4
	4	2	2	3
	3	5	4	0
	2	2	0	1
	3	1	2	1
8:30 AM	2	0	3	2
	1	3	2	1
	0	3	3	1
	2	4	4	0
	0	2	2	2
	0	1	0	1
	3	4	3	1
	4	3	3	1
	5	0	2	2
	6	2	2	3
8:45 AM	4	1	1	4
	3	1	4	1
	3	2	5	4
	4	6	5	5
	3	4	4	2
	2	5	3	0
	3	6	2	0
	5	4	1	2
	4	3	2	1
	6	3	3	2
9:00 AM	4	3	2	1
	3	4	2	1
	3	5	3	2
	4	4	2	3
	3	3	2	1
	5	4	2	1
	4	5	3	4
	7	6	3	0
	8	3	0	3
	6	3	1	2
9:15 AM	6	0	4	2
	5	4	5	1
	5	3	3	3
	4	4	1	3
	0	5	0	0
	4	4	5	0
	5	3	3	2
	6	3	2	1
	5	4	2	1
	4	5	3	3
	3	4	4	3
	4	3	5	2
	3	3	2	1
	4	4	3	2
	7	5	2	0
	7	4	0	5
	6	7	2	2
	5	6	2	5
	4	5	4	3
	6	4	3	2
	5	5	2	2
	2	4	2	2

Time	First Street NB LT/TH/RT	First Street SB LT/TH/RT	Charles Street EB LT/TH/RT	CambridgeSide Place WB LT/TH/RT
4:30 PM	6	1	3	5
	7	2	3	6
	4	1	2	3
	3	1	0	5
	0	1	1	7
	3	4	3	8
	4	3	2	6
	5	4	4	3
	7	2	3	4
	6	1	4	3
	7	0	2	4
4:45 PM	8	3	2	6
	6	5	1	4
	5	0	2	4
	6	2	2	5
	4	2	2	7
	2	1	3	9
	4	3	4	3
	5	4	0	5
	2	3	2	6
	5	2	1	4
	6	0	1	3
5:00 PM	5	0	1	2
	4	2	2	3
	3	1	1	0
	5	4	1	4
	7	3	1	5
	3	4	4	7
	2	7	3	6
	6	3	2	3
	5	4	6	8
	4	5	3	2
	5	4	4	3
	3	6	2	7
5:15 PM	4	7	0	6
	6	8	1	7
	7	6	2	8
	6	3	1	6
	3	0	1	5
	5	7	2	6
	6	8	0	3
	4	6	3	7
	3	0	2	2
	5	2	0	3
	6	6	1	7
	7	5	0	7
5:30 PM	5	4	3	10
	6	5	4	10
	6	5	3	11
	5	7	0	7
	7	4	2	8
	8	3	3	7
	3	3	5	6
	4	4	3	5
	3	6	2	4
5:45 PM	4	7	5	7
	7	6	6	8
	6	7	4	9
	8	7	3	6
	7	8	4	7
	2	6	3	8
	8	4	5	11
	2	5	4	6
	4	4	3	7
	5	5	3	8
	7	5	4	5
	6	5	5	5
6:00 PM	8	4	6	6
	9	5	5	8
	3	7	4	7
	5	8	3	6
	6	10	6	7
	7	7	7	7
	6	8	5	6
	6	9	4	4
	5	6	5	10
	6	5	4	9
	6	3	4	7
	6	4	3	8
6:15 PM	7	5	4	8
	8	7	3	7
	5	6	2	9
	7	8	5	8
	5	7	7	10
	4	6	6	9
	7	6	7	7
	7	7	7	8
	6	8	5	11
	7	6	4	7
	8	5	3	8
	3	4	5	7
	5	4	6	7

Time	First Street NB LT/TH/RT	First Street SB LT/TH/RT	Charles Street EB LT/TH/RT	CambridgeSide Place WB LT/TH/RT
11:00 AM	2	0	0	10
	3	0	0	9
	2	0	2	8
	4	3	1	7
	3	3	2	6
	2	2	0	7
	0	1	0	8
	0	2	2	6
	2	3	2	7
	1	3	1	10
11:15 AM	2	2	1	11
	3	3	3	10
	2	2	0	9
	1	0	2	8
	0	0	1	7
	3	1	0	6
	2	1	2	7
	1	1	2	5
	3	3	0	9
	3	2	1	11
11:30 AM	2	4	1	10
	1	3	1	8
	3	2	0	9
	0	0	1	6
	4	0	2	7
	3	3	0	8
	3	2	2	9
	2	3	1	10
	2	4	2	10
	1	3	0	10
11:45 AM	0	2	2	9
	0	1	1	7
	2	0	1	6
	3	2	3	5
	4	2	2	9
	3	3	4	8
	2	2	0	7
	0	4	1	9
	3	3	0	8
12:00 PM	2	2	2	7
	3	3	1	8
	3	2	2	7
	2	3	2	6
	4	2	0	7
	2	4	0	8
	1	1	0	9
	3	2	5	8
	2	0	3	9
	0	2	0	7
12:15 PM	1	1	2	10
	0	2	4	11
	3	3	3	9
	4	2	3	12
	3	4	4	8
	6	2	4	7
	0	0	3	6
	2	1	2	8
	1	0	4	7
	0	3	3	6
12:30 PM	2	2	2	7
	2	1	1	8
	3	4	1	10
	4	3	3	9
	3	2	2	10
	2	0	3	7
	2	1	2	8
	4	0	0	7
	0	2	2	8
	2	2	1	10
12:45 PM	3	3	0	9
	3	2	2	7
	4	3	2	8
	2	2	3	10
	1	0	4	9
	2	4	4	8
	4	2	5	7
	4	0	3	6
	4	3	2	7
	3	3	3	10

Parking Count Data

Lower garage 8-23-18 ENTRY			Upper garage 8-23-18 ENTRY	
Hour	Transients	Monthly	Transients	Monthly
Midnight-1am	1	1	0	1
1am-2am	0	0	0	0
2am-3am	0	0	0	0
3am-4am	0	0	0	0
4am-5am	0	0	0	0
5am-6am	2	1	0	0
6am-7am	9	26	2	1
7am-8am	23	56	7	5
8am-9am	25	121	10	18
9am-10am	47	191	9	17
10am-11am	63	176	20	23
11am-Noon	90	63	33	5
Noon-1pm	96	31	39	6
1pm-2pm	132	29	58	9
2pm-3pm	113	26	38	2
3pm-4pm	110	11	33	1
4pm-5pm	97	12	38	2
5pm-6pm	114	8	47	0
6pm-7pm	115	14	36	1
7pm-8pm	121	3	37	2
8pm-9pm	124	5	41	1
9pm-10pm	57	1	10	0
10pm-11pm	5	8	0	0
11pm-Midnight	7	5	0	0
TOTAL	1351	788	458	94

Lower garage 8-23-18 Exit			Upper garage 8-23-18 Exit	
Hour	Transients	Monthly	Transients	Monthly
Midnight-1am	4	12	1	1
1am-2am	1	5	0	0
2am-3am	1	8	0	0
3am-4am	0	0	0	0
4am-5am	0	0	0	0
5am-6am	0	0	0	0
6am-7am	0	0	0	0
7am-8am	0	5	0	0
8am-9am	1	7	2	0
9am-10am	8	3	1	0
10am-11am	7	6	2	1
11am-Noon	23	5	9	0
Noon-1pm	54	9	20	4
1pm-2pm	74	23	44	1
2pm-3pm	119	14	48	4
3pm-4pm	124	43	30	5
4pm-5pm	123	70	50	5
5pm-6pm	110	141	44	16
6pm-7pm	125	177	42	19
7pm-8pm	130	121	49	12
8pm-9pm	142	46	53	6
9pm-10pm	150	43	43	7
10pm-11pm	83	50	16	8
11pm-Midnight	30	25	3	3
TOTAL	1309	813	457	92

Lower garage 8-25-18 ENTRY			Upper garage 8-25-18 ENTRY	
Hour	Transients	Monthly	Transients	Monthly
Midnight-1am	1	2	0	1
1am-2am	0	0	0	0
2am-3am	0	0	0	0
3am-4am	0	0	0	0
4am-5am	0	0	0	0
5am-6am	2	7	0	0
6am-7am	3	9	0	2
7am-8am	1	18	1	3
8am-9am	13	19	2	7
9am-10am	42	25	6	11
10am-11am	114	26	46	1
11am-Noon	119	19	51	1
Noon-1pm	165	17	70	4
1pm-2pm	180	22	77	5
2pm-3pm	168	18	71	3
3pm-4pm	164	13	81	0
4pm-5pm	189	10	58	3
5pm-6pm	174	11	60	2
6pm-7pm	142	7	49	0
7pm-8pm	154	4	41	0
8pm-9pm	67	1	11	0
9pm-10pm	27	3	0	0
10pm-11pm	3	2	0	0
11pm-Midnight	4	1	0	0
TOTAL	1732	234	624	43

Lower garage 8-25-18 Exit			Upper garage 8-25-18 Exit	
Hour	Transients	Monthly	Transients	Monthly
Midnight-1am	7	7	0	2
1am-2am	0	4	0	0
2am-3am	2	1	0	0
3am-4am	0	1	0	0
4am-5am	0	0	0	0
5am-6am	0	1	0	0
6am-7am	1	1	0	0
7am-8am	1	4	0	0
8am-9am	5	5	0	2
9am-10am	7	7	0	0
10am-11am	36	10	5	0
11am-Noon	67	10	31	1
Noon-1pm	84	9	44	0
1pm-2pm	120	12	56	1
2pm-3pm	160	10	76	1
3pm-4pm	155	18	68	4
4pm-5pm	161	16	74	4
5pm-6pm	173	25	71	6
6pm-7pm	172	21	67	5
7pm-8pm	161	18	44	1
8pm-9pm	169	17	52	5
9pm-10pm	123	46	30	8
10pm-11pm	61	17	3	5
11pm-Midnight	13	17	0	0
TOTAL	1678	277	621	45

Saturday 8/25/18

Hour	Base on 1695 Spaces				Base on 1293 Spaces				Base on 795 Spaces				Base on 2490 Spaces			
	Lower Garage		Upper Garage		Lower Garage		Upper Garage		Lower Garage		Upper Garage		Lower Garage		Upper Garage	
	Inventory @ 12AM	Vacancy	Percent Vacant		Inventory @ 12AM	Vacancy			Inventory @ 12AM	Vacancy			Inventory @ 12AM	Vacancy		
Midnight-1am	40	58	1637	97%	40	58	1235	96%	4	3	792	1.00	44	61	2429	0.98
1am-2am	0	47	1648	97%	0	47	1246	96%	0	3	792	1.00	0	50	2440	0.98
2am-3am	0	43	1652	97%	0	43	1250	97%	0	3	792	1.00	0	46	2444	0.98
3am-4am	0	39	1656	98%	0	39	1254	97%	0	3	792	1.00	0	42	2448	0.98
4am-5am	0	39	1656	98%	0	39	1254	97%	0	3	792	1.00	0	42	2448	0.98
5am-6am	0	47	1648	97%	0	47	1246	96%	0	3	792	1.00	0	50	2440	0.98
6am-7am	0	57	1638	97%	0	57	1236	96%	0	5	790	0.99	0	62	2428	0.98
7am-8am	0	71	1624	96%	0	71	1222	95%	0	9	786	0.99	0	80	2410	0.97
8am-9am	0	93	1602	95%	0	93	1200	93%	0	16	779	0.98	0	109	2381	0.96
9am-10am	0	146	1549	91%	0	146	1147	89%	0	33	762	0.96	0	179	2311	0.93
10am-11am	0	240	1455	86%	0	240	1053	81%	0	75	720	0.91	0	315	2175	0.87
11am-Noon	0	301	1394	82%	0	301	992	77%	0	95	700	0.88	0	396	2094	0.84
Noon-1pm	0	390	1305	77%	0	390	903	70%	0	125	670	0.84	0	515	1975	0.79
1pm-2pm	0	460	1235	73%	0	460	833	64%	0	150	645	0.81	0	610	1880	0.76
2pm-3pm	0	476	1219	72%	0	476	817	65%	0	147	648	0.82	0	623	1867	0.75
3pm-4pm	0	480	1215	72%	0	480	813	65%	0	156	639	0.80	0	636	1854	0.74
4pm-5pm	0	502	1193	70%	0	502	791	61%	0	139	656	0.83	0	641	1849	0.74
5pm-6pm	0	489	1206	71%	0	489	804	62%	0	124	671	0.84	0	613	1877	0.75
6pm-7pm	0	445	1250	74%	0	445	848	66%	0	101	694	0.87	0	546	1944	0.78
7pm-8pm	0	424	1271	75%	0	424	869	67%	0	97	698	0.88	0	521	1969	0.79
8pm-9pm	0	306	1389	82%	0	306	987	76%	0	51	744	0.94	0	357	2133	0.86
9pm-10pm	0	167	1528	90%	0	167	1126	87%	0	13	782	0.98	0	180	2310	0.93
10pm-11pm	0	94	1601	94%	0	94	1199	93%	0	5	790	0.99	0	99	2391	0.96
11pm-Midnight	0	69	1626	96%	0	69	1224	95%	0	5	790	0.99	0	74	2416	0.97

Total spaces	2490
Lower Garage Spaces	1695
Upper Garage Spaces	795
Lower Garage with committed spaces	1293

Thursday 8/23/18

Hour	Base on 1695 Spaces					Base on 1293 Spaces					Base on 795 Spaces					Base on 2490 Spaces				
	Lower Garage					Lower Garage					Upper Garage					Garage Total				
	Inventory @ 12AM	Occupancy	Vacancy	Percent Vacant		Inventory @ 12AM	Occupancy	Vacancy	Spaces		Inventory @ 12AM	Occupancy	Vacancy	Spaces		Inventory @ 12AM	Occupancy	Vacancy	Spaces	
Midnight-1am	48	34	1661	98%		48	34	1259	97%		5	4	791	0.99		53	38	2452	0.98	
1am-2am	0	28	1667	98%		0	28	1265	98%		0	4	791	0.99		0	32	2458	0.99	
2am-3am	0	19	1676	99%		0	19	1274	99%		0	4	791	0.99		0	23	2467	0.99	
3am-4am	0	19	1676	99%		0	19	1274	99%		0	4	791	0.99		0	23	2467	0.99	
4am-5am	0	19	1676	99%		0	19	1274	99%		0	4	791	0.99		0	23	2467	0.99	
5am-6am	0	22	1673	99%		0	22	1271	98%		0	4	791	0.99		0	26	2464	0.99	
6am-7am	0	57	1638	97%		0	57	1236	96%		0	7	788	0.99		0	64	2426	0.97	
7am-8am	0	131	1564	92%		0	131	1162	90%		0	19	776	0.98		0	150	2340	0.94	
8am-9am	0	269	1426	84%		0	269	1024	79%		0	45	750	0.94		0	314	2176	0.87	
9am-10am	0	496	1199	71%		0	496	797	62%		0	70	725	0.91		0	566	1924	0.77	
10am-11am	0	722	973	57%		0	722	571	44%		0	110	685	0.86		0	832	1658	0.67	
11am-Noon	0	847	848	50%		0	847	446	34%		0	139	656	0.83		0	986	1504	0.60	
Noon-1pm	0	911	784	46%		0	911	382	30%		0	160	635	0.80		0	1071	1419	0.57	
1pm-2pm	0	975	720	42%		0	975	318	25%		0	182	613	0.77		0	1157	1333	0.54	
2pm-3pm	0	981	714	42%		0	981	312	24%		0	170	625	0.79		0	1151	1339	0.54	
3pm-4pm	0	935	760	45%		0	935	358	28%		0	169	626	0.79		0	1104	1386	0.56	
4pm-5pm	0	851	844	50%		0	851	442	34%		0	154	641	0.81		0	1005	1485	0.60	
5pm-6pm	0	722	973	57%		0	722	571	44%		0	141	654	0.82		0	863	1627	0.65	
6pm-7pm	0	549	1146	68%		0	549	744	58%		0	117	678	0.85		0	666	1824	0.73	
7pm-8pm	0	422	1273	75%		0	422	871	67%		0	95	700	0.88		0	517	1973	0.79	
8pm-9pm	0	363	1332	79%		0	363	930	72%		0	78	717	0.90		0	441	2049	0.82	
9pm-10pm	0	228	1467	87%		0	228	1065	82%		0	38	757	0.95		0	266	2224	0.89	
10pm-11pm	0	108	1587	94%		0	108	1185	92%		0	14	781	0.98		0	122	2368	0.95	
11pm-Midnight	0	51	1644	97%		0	51	1242	96%		0	8	787	0.99		0	59	2431	0.98	

Total spaces	2490
Lower Garage Spaces	1695
Upper Garage Spaces	795
Lower Garage with committed spaces	1293

Entries only

December 2017 Weekday Only Entry - TRANSIENT											
	w1	w2	w3	w4	w5	total					
Midnight-1am	0	1	2	4	1	8					
1am-2am	0	1	3	2	1	7					
2am-3am	0	1	0	2	0	3					
3am-4am	0	0	0	1	0	1					
4am-5am	2	12	11	12	11	48					
5am-6am	20	166	145	110	72	513					
6am-7am	36	200	209	211	99	755					
7am-8am	69	454	444	381	162	1510					
8am-9am	172	880	845	742	373	3012					
9am-10am	154	885	933	808	400	3180					
10am-11am	111	688	792	827	549	2967					
11am-Noon	148	697	833	1072	1193	3943					
Noon-1pm	156	750	895	1316	1093	4210					
1pm-2pm	100	551	768	1126	936	3481					
2pm-3pm	104	512	699	1080	954	3349					
3pm-4pm	135	494	705	1160	902	3396					
4pm-5pm	141	555	812	1147	911	3566					
5pm-6pm	158	667	857	1256	949	3887					
6pm-7pm	140	705	979	1302	814	3940					
7pm-8pm	137	583	744	1207	639	3310					
8pm-9pm	62	267	372	639	257	1597					
9pm-10pm	13	65	90	251	47	466					
10pm-11pm	6	18	24	76	10	134					
11pm-Midnight	2	9	9	6	10	36					
	1866	9161	11171	14738	10383	47319					

December 2017 Weekends Only Entry - TRANSIENT											
	w1	w2	w3	w4	w5	total					
Midnight-1am	2	3	1	4	3	13					
1am-2am	1	0	3	0	1	5					
2am-3am	1	0	1	1	0	3					
3am-4am	0	0	0	1	0	1					
4am-5am	0	0	0	1	0	1					
5am-6am	2	5	6	0	5	18					
6am-7am	11	9	11	13	11	55					
7am-8am	99	16	18	44	6	183					
8am-9am	51	53	64	95	27	290					
9am-10am	118	136	149	245	69	717					
10am-11am	208	254	303	420	244	1429					
11am-Noon	289	333	454	650	423	2149					
Noon-1pm	415	461	612	755	567	2810					
1pm-2pm	427	540	718	690	747	3122					
2pm-3pm	483	483	630	712	659	2967					
3pm-4pm	470	484	669	670	634	2927					
4pm-5pm	464	432	604	664	594	2758					
5pm-6pm	395	344	531	566	460	2296					
6pm-7pm	329	238	350	377	318	1612					
7pm-8pm	169	194	231	314	202	1110					
8pm-9pm	78	69	122	170	115	554					
9pm-10pm	18	24	48	103	20	213					
10pm-11pm	3	12	11	27	11	64					
11pm-Midnight	1	7	10	8	3	29					
	4034	4097	5546	6530	5119	25326					

W1 w2 w3 w4 w5 total						
December 2017 Weekday Only Entry - Monthly & Paygo						
Midnight-1am	2	6	3	5	5	21
1am-2am	0	1	1	2	2	6
2am-3am	0	1	0	0	0	1
3am-4am	0	0	0	1	1	2
4am-5am	1	6	9	7	7	30
5am-6am	13	80	59	48	43	243
6am-7am	33	191	180	146	98	648
7am-8am	47	347	312	246	123	1075
8am-9am	89	515	490	425	208	1727
9am-10am	70	409	366	214	118	1177
10am-11am	43	193	180	96	74	586
11am-Noon	26	113	101	51	54	345
Noon-1pm	29	114	85	50	55	333
1pm-2pm	16	92	110	49	53	320
2pm-3pm	21	89	82	67	45	304
3pm-4pm	18	74	56	44	47	239
4pm-5pm	11	49	36	28	41	165
5pm-6pm	8	29	34	19	17	107
6pm-7pm	7	24	27	15	14	87
7pm-8pm	3	25	23	10	3	64
8pm-9pm	1	17	15	4	13	50
9pm-10pm	1	13	10	11	8	43
10pm-11pm	4	21	9	6	18	58
11pm-Midnight	1	12	8	3	4	28
	444	2421	2196	1547	1051	7659

w1 w2 w3 w4 w5 total						
December 2017 Weekend Only Entry - Monthly & Paygo						
Midnight-1am	1	3	1	0	0	5
1am-2am	0	0	1	1	2	4
2am-3am	0	2	0	1	0	3
3am-4am	0	1	1	1	0	3
4am-5am	2	1	0	1	0	4
5am-6am	6	11	8	7	6	38
6am-7am	25	26	4	15	16	86
7am-8am	33	38	13	12	22	118
8am-9am	33	45	8	16	27	129
9am-10am	63	49	11	14	41	178
10am-11am	40	50	14	18	25	147
11am-Noon	29	37	13	14	29	122
Noon-1pm	31	39	7	13	22	112
1pm-2pm	34	41	8	16	25	124
2pm-3pm	29	39	24	15	32	139
3pm-4pm	20	24	14	13	21	92
4pm-5pm	14	16	7	8	22	67
5pm-6pm	7	10	4	6	16	43
6pm-7pm	7	11	2	6	12	38
7pm-8pm	5	2	4	2	9	22
8pm-9pm	5	4	7	2	4	22
9pm-10pm	4	6	6	2	1	19
10pm-11pm	9	10	3	3	4	29
11pm-Midnight	1	1	1	3	0	6
	398	466	161	189	336	1550

2017 Lower garage 2017 ENTRY

Hour	Transients	Monthly
Midnight-1am	359	386
1am-2am	138	199
2am-3am	72	129
3am-4am	50	64
4am-5am	767	444
5am-6am	7040	4709
6am-7am	11438	11205
7am-8am	21603	18111
8am-9am	44136	27847
9am-10am	50219	21710
10am-11am	32562	11307
11am-Noon	35552	7487
Noon-1pm	42206	7654
1pm-2pm	39321	6315
2pm-3pm	38089	6168
3pm-4pm	37563	4406
4pm-5pm	37338	3488
5pm-6pm	43839	2334
6pm-7pm	42154	2034
7pm-8pm	33338	1672
8pm-9pm	15868	2025
9pm-10pm	3843	1591
10pm-11pm	1558	1328
11pm-Midnight	657	853
TOTAL	539710	143466

2017 Lower garage 2017 EXIT

Hour	Transients	Monthly
Midnight-1am	2715	2778
1am-2am	536	1935
2am-3am	90	935
3am-4am	37	400
4am-5am	33	451
5am-6am	166	691
6am-7am	198	1214
7am-8am	664	2549
8am-9am	1437	2756
9am-10am	3222	3464
10am-11am	8888	4348
11am-Noon	17360	4690
Noon-1pm	28234	5400
1pm-2pm	40080	6516
2pm-3pm	47240	9165
3pm-4pm	52727	14188
4pm-5pm	63941	22893
5pm-6pm	77481	32521
6pm-7pm	66760	27904
7pm-8pm	56591	17380
8pm-9pm	50656	9886
9pm-10pm	40572	13749
10pm-11pm	18063	8652
11pm-Midnight	7333	4262
TOTAL	585024	198727

PUBLIC TRANSPORTATION DATA

PRICE PER TRIP	Local Bus		Bus + Bus		Rapid Transit		Bus + Rapid Transit	
	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit				
CharlieCard	\$1.70	\$1.70	\$2.25	\$2.25				
CharlieTicket	\$2.00	\$2.00	\$2.75	\$4.75***				
Cash-on-Board	\$2.00	\$4.00	\$2.75	\$4.75***				
Student/Youth*	\$0.85	\$0.85	\$1.10	\$1.10				
Senior/TAP**	\$0.85	\$0.85	\$1.10	\$1.10				
UNLIMITED TRIP PASSES								
1-Day	\$12.00	\$12.00	\$12.00	\$12.00				
7-Day	\$21.25	\$21.25	\$21.25	\$21.25				
Monthly	\$55.00	\$55.00	\$84.50	\$84.50				
Senior/TAP Monthly \$30.00/month for unlimited travel on Local Bus and Rapid Transit								

VALID PASSES: LinkPass (\$84.50/mo.); Student /Youth LinkPass® (\$30/mo.); Senior/TAP LinkPass® (\$30/mo.); and express bus, commuter rail, and boat passes.

FREE FARES: Children 11 and under ride free when accompanied by an adult.

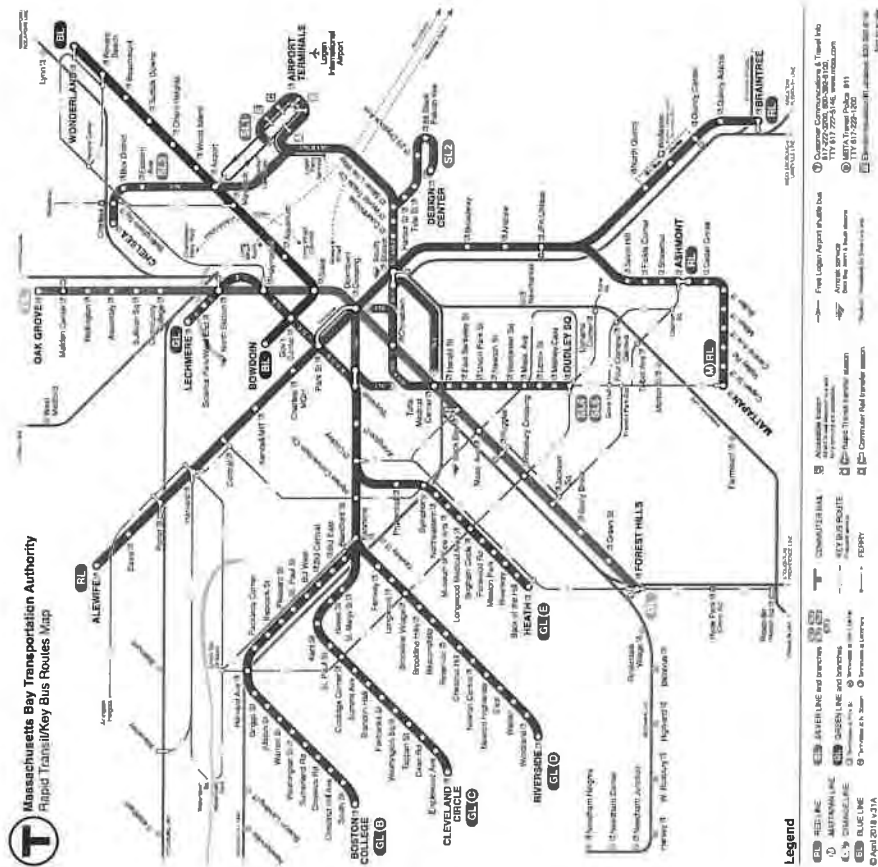
* Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards are available to students through participating middle schools and high schools. Youth CharlieCards are available through community partners in the Boston metro area. Visit www.mbita.com/youthpass for details.

** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities

*** For Silver Line SL4 or SL5 pay \$2.75. Also see "transfers."

If paying with a CharlieTicket or CharlieCard, discounted transfers that are available are automatic — just use the same ticket or card throughout your trip. If paying with cash onboard a vehicle, free transfers are only allowed between rapid transit lines and inside paid platform areas at gated stations.

Schedules are available at the following stations: Park Street, Airport, Malden, Harvard, Haymarket (Green Line Level), Back Bay, Downtown Crossing (Orange Line Level), and Quincy Center, or ask a Customer Service Agent. Schedules are also available at the State Transportation Building (10 Park Plaza), 45 High St, and online at mbta.com



Effective September 2, 2018



Blue Line



Green Line



Orange Line



Red Line



Silver Line

T Massachusetts Bay
Transportation Authority

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

(TTY) 617-222-5146 • www.mbtta.com

Rapid Transit Line	Weekday					Saturday					Sunday							
	First Trip	AM Peak	Midday	PM Peak	Late Evening	Last Trip	First Trip	AM Peak	PM Peak	Evening	Late Night	Last Trip	First Trip	AM Peak	PM Peak	Evening	Late Night	Last Trip
Red Line	5:24AM	9 min	14 min	9 min	12 min	12:15AM	5:24AM	14 min	14 min	14 min	14 min	12:15AM	6:08AM	15 min	15 min	15 min	16 min	12:15AM
	5:13AM	9 min	14 min	9 min	12 min	12:17AM	5:15AM	14 min	14 min	14 min	14 min	12:17AM	6:00AM	15 min	15 min	15 min	16 min	12:17AM
	5:16AM	9 min	14 min	9 min	12 min	12:22AM	5:16AM	14 min	14 min	14 min	14 min	12:22AM	6:00AM	15 min	15 min	15 min	16 min	12:22AM
	5:16AM	9 min	14 min	9 min	12 min	12:30AM	5:16AM	14 min	14 min	14 min	14 min	12:30AM	6:00AM	15 min	15 min	15 min	16 min	12:30AM
	5:17AM	5 min	8 min	5 min	12 min	1:05AM	5:15AM	26 min	12 min	12 min	26 min	1:05AM	6:03AM	26 min	12 min	12 min	26 min	1:05AM
"M" Ashmont Mattapan	5:05AM	5 min	8 min	5 min	12 min	12:53AM	5:05AM	26 min	12 min	12 min	26 min	12:53AM	5:57AM	26 min	12 min	12 min	26 min	12:53AM
Blue Line																		
	5:13AM	5 min	9 min	5 min	9 min	12:28AM	5:25AM	9 min	9 min	9 min	13 min	12:28AM	5:58AM	13 min	9 min	9 min	13 min	12:28AM
	5:13AM	5 min	9 min	5 min	9 min	12:33AM	5:13AM	9 min	9 min	9 min	13 min	12:33AM	6:03AM	13 min	9 min	9 min	13 min	12:33AM
	5:29AM	5 min	9 min	5 min	9 min	1:00AM	5:29AM	9 min	9 min	9 min	13 min	1:00AM	6:21AM	13 min	9 min	9 min	13 min	1:00AM
Orange Line	5:16AM	6 min	9 min	6 min	10 min	12:30AM	5:16AM	10 min	9 min	11 min	11 min	12:30AM	6:00AM	13 min	11 min	11 min	11 min	12:30AM
Oak Grove Forest Hills	5:16AM	6 min	9 min	6 min	10 min	12:28AM	5:16AM	10 min	9 min	11 min	11 min	12:28AM	6:00AM	13 min	11 min	11 min	11 min	12:28AM
Green Line																		
	5:01AM	6 min	8 min	6 min	8 min	12:10AM	4:45AM ²	11 min	7 min	7 min	11 min	12:09AM	5:20AM ²	12 min	9 min	7 min	10 min	12:10AM
	5:42AM	6 min	8 min	6 min	8 min	12:52AM	5:40AM	11 min	7 min	7 min	11 min	12:52AM	6:12AM	12 min	9 min	7 min	10 min	12:52AM
	5:01AM ¹	6 min	9 min	7 min	7 min	12:10AM	4:50AM ²	10 min	9 min	8 min	10 min	12:10AM	5:30AM ²	12 min	11 min	9 min	12 min	12:10AM
	5:55AM	6 min	9 min	7 min	7 min	12:46AM	5:30AM	10 min	9 min	8 min	10 min	12:46AM	6:06AM	12 min	11 min	9 min	12 min	12:46AM
	4:55AM	6 min	8 min	6 min	8 min	12:05AM	4:55AM	13 min	9 min	8 min	10 min	12:05AM	5:25AM	13 min	11 min	11 min	11 min	12:05AM
	5:41AM	6 min	8 min	6 min	8 min	12:49AM	5:38AM	13 min	9 min	8 min	10 min	12:49AM	6:10AM	13 min	11 min	11 min	11 min	12:49AM
	5:01AM	6 min	8 min	6 min	9 min	12:30AM	5:01AM	11 min	9 min	11 min	11 min	12:30AM	5:35AM	12 min	12 min	12 min	12 min	12:30AM
	5:38AM	6 min	8 min	6 min	9 min	12:47AM ³	5:39AM	11 min	9 min	11 min	11 min	12:47AM ³	6:15AM	12 min	12 min	12 min	12 min	12:47AM ³
Silver Line	5:38AM	8 min	9 min	10 min	9 min	1:00AM	5:33AM	12 min	12 min	12 min	12 min	1:00AM	6:12AM	12 min	8 min	8 min	8 min	1:00AM
	5:40AM	8 min	9 min	10 min	9 min	12:50AM	5:35AM	12 min	12 min	12 min	12 min	12:50AM	6:10AM	12 min	8 min	8 min	8 min	12:50AM
	6:03AM	5 min	10 min	5 min	9 min	12:30AM	6:10AM	15 min	15 min	15 min	15 min	12:35AM	6:50AM	15 min	15 min	15 min	15 min	12:34AM
SL2 Design Center South Station	5:45AM	5 min	10 min	5 min	9 min	12:50AM	5:50AM	15 min	15 min	15 min	15 min	12:49AM	6:35AM	15 min	15 min	15 min	15 min	12:48AM
SL3 Chelsea Station South Station	5:00AM	12 min	15 min	12 min	12 min	1:22AM	5:30AM	12 min	12 min	15 min	15 min	1:25AM	6:30AM	15 min	15 min	15 min	15 min	1:25AM
	4:31AM	12 min	15 min	12 min	12 min	1:55AM	4:53AM	12 min	12 min	15 min	15 min	1:55AM	5:53AM	15 min	15 min	15 min	15 min	1:55AM
SL4 Dudley Station South Station	5:20AM	12 min	16 min	14 min	12 min	12:20AM	5:23AM	15 min	15 min	15 min	20 min	12:20AM	6:02AM	15 min	15 min	15 min	20 min	12:20AM
SL5 Dudley Station Downtown Xing	5:35AM	12 min	16 min	14 min	12 min	12:54AM	5:40AM	15 min	15 min	15 min	20 min	12:54AM	6:20AM	15 min	15 min	15 min	20 min	12:54AM
	5:15AM	8 min	10 min	8 min	7 min	12:53AM	5:19AM	10 min	10 min	11 min	11 min	12:46AM	6:00AM	10 min	8 min	9 min	9 min	12:46AM
	5:32AM	8 min	10 min	8 min	7 min	1:07AM	5:34AM	10 min	10 min	11 min	11 min	1:00AM	6:15AM	10 min	8 min	9 min	9 min	1:00AM
Schedule Periods (approximate): AM Rush Hour: 6:30 AM - 9:00 AM Midday: 9:00 AM - 3:30 PM PM Rush Hour: 3:30 PM - 6:30 PM Evening: 6:30 PM - 8:00 PM Late Night: 8:00 PM - CLOSE Red Line Note: *Braintree Line: Due to construction on Wollaston Station the station will be closed. During construction shuttle buses will operate between Wollaston, North Quincy, and Quincy Center Stations. Please visit mbta.com/valeris for updated service information. Mattapan Note: Saturday and Sunday before 10:00 AM and after 8:00 PM trips depart every 26 minutes and the rest of the day every 12 minutes. Also, see Mattapan Line Schedule Card. Green Line Notes: 1 - The first two C Line AM inbound trips run through to Lechmere Station on weekdays. 2 - The first B Line and second C Line AM inbound trips run through to Lechmere Station on weekends. 3 - The 12:32AM trip from Heath St is the last connecting train to other lines downtown. The 12:47AM trip from Heath St runs in service to Lechmere with no guaranteed connections. f - After exiting Ted Williams Tunnel bus will only service World Trade Center and South Station stops. w - Last trips wait at some stations, primarily in the Downtown area, for connecting service. Departure times are approximate. x - Trip departs from Summer St. @ Dorchester Ave. and omits Essex Street stop. Fall 2018 & Winter 2019 Holidays 9/3/18: see Sunday 10/8/18: see Sunday 11/22/18, 12/25/18, 1/1/19: see Saturday 1/27/19 & 2/18/19: see Saturday Silver Line see Weekday																		

Schedule Periods (approximate):
 AM Rush Hour: 6:30 AM - 9:00 AM
 Midday: 9:00 AM - 3:30 PM
 PM Rush Hour: 3:30 PM - 6:30 PM
 Evening: 6:30 PM - 8:00 PM
 Late Night: 8:00 PM - CLOSE

Red Line Note:

*Braintree Line:
 Due to construction on Wollaston Station the station will be closed. During construction shuttle buses will operate between Wollaston, North Quincy, and Quincy Center Stations. Please visit mbta.com/alerts for updated service information.

Mattapan Note:

Saturday and Sunday before 10:00 AM and after 8:00 PM trips depart every 26 minutes and the rest of the day every 12 minutes. Also, see Mattapan Line Schedule Card.

Green Line Notes:

1 - The first two C Line AM inbound trips run through to Lechmere Station on weekdays.

2 - The first B Line and second C Line AM inbound trips run through to Lechmere Station on weekends.

3 - The 12:32AM trip from Heath St. is the last connecting train to other lines downtown. The 12:47AM trip from Heath St. runs in service to Lechmere with no guaranteed connections.

f - After exiting Ted Williams Tunnel bus will only service World Trade Center and South Station stops.

w - Last trips wait at some stations, primarily in the Downtown area, for connecting service. Departure times are approximate.

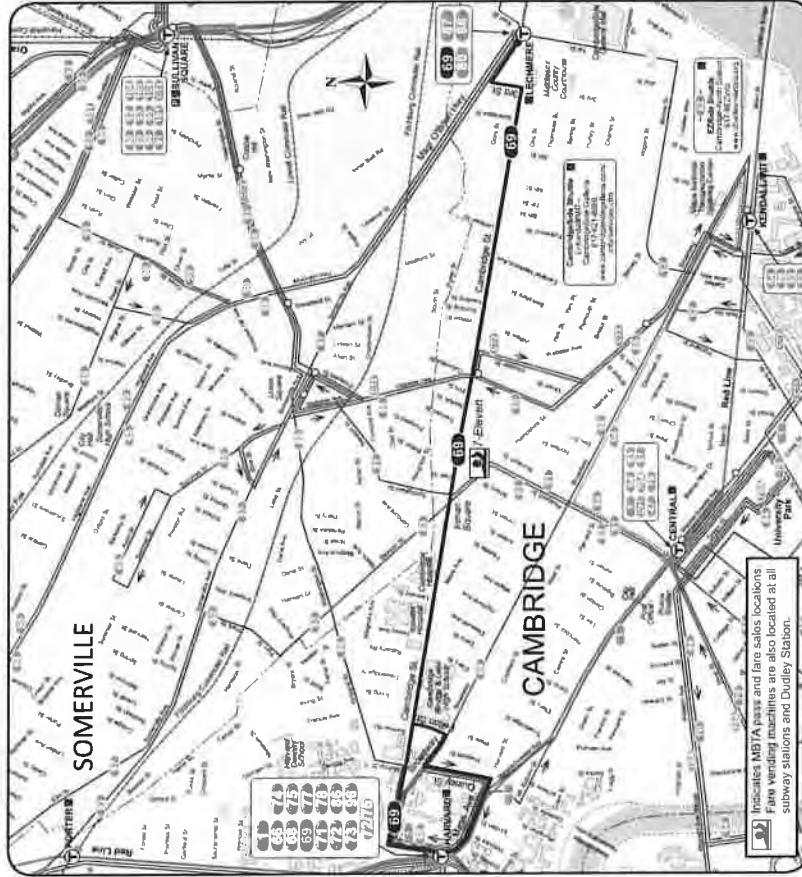
x - Trip departs from Summer St. @ Dorchester Ave. and omits Essex Street stop.

Fall 2018 & Winter 2019 Holidays
 See www.mbta.com for details.
 11/22/18, 12/25/18, 1/1/19 - see Holiday
 1/21/19 & 2/18/19 - see Saturday
 Silver Line see Weekday

Green Line - Lechmere Station				
Time	Ons	Offs	Total	Flow
3 AM Avg	0			
4 AM Avg	11			
5 AM Avg	70	33.66963	104	114
6 AM Avg	170	121.9245	292	194
7 AM Avg	386	249.5719	635	360
8 AM Avg	647	403.1768	1,050	618
9 AM Avg	312	283.3782	596	320
10 AM Avg	189	180.0089	369	208
11 AM Avg	192	165.2833	358	205
12 PM Avg	214	179.5661	393	234
1 PM Avg	230	209.8484	440	262
2 PM Avg	280	268.7512	548	303
3 PM Avg	379	308.3561	687	424
4 PM Avg	548	382.2134	931	550
5 PM Avg	677	488.1725	1,165	705
6 PM Avg	464	330.8467	795	511
7 PM Avg	273	193.3435	467	307
8 PM Avg	194	116.1462	310	212
9 PM Avg	204	116.8125	321	212
10 PM Avg	109	88.95118	198	131
11 PM Avg	52	53.68652	106	70
12 AM Avg	16			
1 AM Avg	0			
2 AM Avg	0			
Totals	5,619	4173.708	9,766	5,941

Red Line - Kendall Station						
Time	Ons	Offs	Total	NB Flow	SB Flow	Total Flow
3 AM Avg	0					
4 AM Avg	1					
5 AM Avg	28	262.6568	291	410.1651	420.2211	830.38614
6 AM Avg	109	1103.871	1,213	1453.372	2008.58	3461.9525
7 AM Avg	332	2520.13	2,852	2406.743	5496.508	7903.2506
8 AM Avg	563	3940.372	4,504	3002.737	8188.896	11191.633
9 AM Avg	375	2441.601	2,817	1768.383	3990.875	5759.2581
10 AM Avg	292	1058.559	1,350	1400.441	1985.401	3385.8425
11 AM Avg	388	673.9066	1,062	1408.44	1712.976	3121.4163
12 PM Avg	485	619.1543	1,104	1639.58	1841.372	3480.9524
1 PM Avg	592	561.8774	1,154	1785.796	1901.932	3687.7282
2 PM Avg	860	541.0804	1,401	2193.017	2386.47	4579.4873
3 PM Avg	1,434	553.2306	1,987	3141.1	3312.968	6454.0675
4 PM Avg	2,720	605.7963	3,326	5205.214	4660.466	9865.6792
5 PM Avg	3,435	838.248	4,273	8318.067	5588.069	13906.136
6 PM Avg	1,985	649.4353	2,635	5814.975	3503.208	9318.1837
7 PM Avg	1,003	400.1538	1,403	3234.971	2004.209	5239.1798
8 PM Avg	607	296.3177	903	2093.17	1374.409	3467.579
9 PM Avg	448	244.479	692	1644.479	1292.417	2936.8959
10 PM Avg	301	182.9798	484	1238.714	1200.306	2439.02
11 PM Avg	177	94.57178	271	695.9398	722.0558	1417.9956
12 AM Avg	68	47.80477	116	233.6033	247.8524	481.45567
1 AM Avg	5	22.86495	28	48.87656	3.814647	52.691202
2 AM Avg	0					
Total	16,208	17659.09	33,867	49137.78	53843.01	102980.79

Route 69 Harvard Square - Lechmere Station



69

Effective September 2, 2018

Harvard Square-
Lechmere Station

Serving

- Harvard University
- Harvard Vanguard Medical Associates
- Inman Square
- Cambridge Hospital
- Spaulding Hospital, Cambridge
- Red Line
- Green Line



Massachusetts Bay
Transportation Authority *massDOT*

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69				Weekday				Saturday				Sunday			
Leave	Harvard/ Holyoke Street	Arrive Inman Square	Outbound	Leave	Harvard/ Holyoke Street	Arrive Inman Square	Inbound	Leave	Harvard/ Holyoke Street	Arrive Inman Square	Outbound	Leave	Harvard/ Holyoke Street	Arrive Inman Square	Outbound
5:25A	5:29A	5:37A	5:40A	5:46A	5:52A	5:58A	5:17A	5:25A	5:30A	5:34A	5:40A	6:20A	6:23A	6:31A	6:05A
5:55	5:59	6:07	6:10	6:16	6:22	6:28	5:45	5:47	5:55	6:00	6:04	7:15	7:18	7:26	7:10
6:20	6:24	6:33	6:40	6:46	6:52	6:58	6:15	6:17	6:25	6:30	6:34	8:15	8:19	8:27	8:00
6:45	6:51	7:01	7:10	7:15	7:17	7:23	6:45	6:47	6:55	7:00	7:04	9:15	9:22	9:30	9:00
7:05	7:11	7:21	7:25	7:35	7:44	7:53	7:17	7:19	7:27	7:30	7:34	9:53	9:57	10:05	9:41
7:20	7:26	7:37	7:45	7:55	8:04	8:13	7:47	7:49	7:57	8:00	8:07	10:30	10:34	10:42	10:17
7:35	7:41	7:52	7:55	8:05	8:14	8:23	8:17	8:20	8:30	8:35	8:42	11:10	11:15	11:24	10:50
7:50	7:56	8:09	8:15	8:25	8:34	8:43	8:52	8:55	9:05	9:10	9:17	11:50	11:56	12:05	11:30
8:00	8:07	8:20	8:25	8:35	8:44	8:53	10:02	10:05	10:18	10:22	10:30	12:30P	12:36P	12:45P	12:10P
8:10	8:17	8:30	8:35	8:45	8:54	9:03	10:12	10:15	10:28	10:32	10:40	1:10	1:16	1:25	12:50
8:20	8:27	8:40	8:45	8:55	9:04	9:13	10:42	10:45	10:58	11:02	11:10	1:50	1:56	2:05	1:30
8:30	8:37	8:50	8:55	9:05	9:12	9:21	11:09	11:13	11:26	11:30	11:38	2:30	2:36	2:45	2:10
8:40	8:47	9:00	9:05	9:15	9:22	9:31	11:31	11:35	11:48	11:53	12:02P	3:10	3:16	3:25	2:50
8:50	8:57	9:10	9:15	9:25	9:32	9:41	11:53	11:57	12:10P	12:15P	12:24P	3:50	3:56	4:05	3:30
9:00	9:07	9:20	9:25	9:35	9:42	9:51	12:15P	12:19P	12:32P	12:37P	12:46P	4:30	4:36	4:44	4:10
9:30	9:37	9:50	9:55	10:05	10:12	10:21	Every 22 Mins.	Every 22 Mins.	Every 22 Mins.	Every 22 Mins.	Every 22 Mins.	5:10	5:16	5:24	4:50
Every	11:42	11:52	12:00N	12:05N	12:10N	12:15N	12:33	12:37	12:43	12:48	12:53	5:50	5:56	6:04	5:30
11:35	11:42	11:52	12:00N	12:05N	12:10N	12:15N	12:33	12:37	12:43	12:48	12:53	6:30	6:36	6:44	6:10
12:00N	12:07P	12:17P	12:25P	12:35	12:43	12:53	12:18P	12:24P	12:32P	12:37P	12:46P	7:08	7:14	7:22	6:50
12:25P	12:32	12:42	12:50	1:00	1:08	1:15	12:43	12:49	12:57	13:05	13:13	7:50	7:57	8:05	7:35
12:50	12:57	1:07	1:15	1:25	1:33	1:40	1:15	1:22	1:32	1:40	1:48	8:15	8:20	8:27	8:00
1:15	1:22	1:32	1:40	1:50	1:58	2:08	1:40	1:47	1:57	2:08	2:18	8:50	8:55	9:02	8:35
1:40	1:47	1:57	2:00	2:10	2:20	2:30	2:10	2:17	2:27	2:37	2:47	9:25	9:30	9:37	9:10
2:01	2:08	2:18	2:20	2:30	2:40	2:50	2:30	2:37	2:47	2:57	3:07	10:05	10:12	10:20	9:45
2:17	2:24	2:34	2:40	2:50	3:00	3:10	2:50	2:57	3:07	3:17	3:27	10:35	10:42	10:50	10:25
2:34	2:41	2:51	3:00	3:10	3:20	3:30	3:10	3:17	3:27	3:37	3:47	11:10	11:15	11:22	10:55
fs 2:51	2:58	3:08	3:15	3:25	3:35	3:45	3:30	3:37	3:47	3:57	4:07	11:45	11:50	11:58	11:30
fs 3:08	3:15	3:25	3:35	3:45	3:55	4:05	3:45	3:52	4:02	4:12	4:22	12:15A	12:19A	12:26A	12:00M
Every	20 Mins.	Until	Until	Until	Until	Until	3:55	4:02	4:12	4:22	4:32	12:45	12:49	12:56	12:30A
6:08	6:16	6:31	6:48	6:50	7:00	7:10	4:25	4:32	4:42	4:52	5:02	1:00	1:04	1:09	1:09
6:28	6:36	6:51	7:08	7:10	7:20	7:30	4:52	4:59	5:09	5:19	5:29	1:15	1:20	1:25	
6:48	6:54	7:04	7:10	7:20	7:30	7:40	5:02	5:09	5:19	5:29	5:39				
7:00	7:06	7:16	7:20	7:30	7:40	7:50	5:19	5:26	5:36	5:46	5:56				
7:20	7:26	7:36	7:40	7:50	8:00	8:10	5:36	5:43	5:53	6:03	6:13				
7:40	7:46	7:56	8:00	8:10	8:20	8:30	5:53	6:00	6:10	6:20	6:30				
8:00	8:06	8:16	8:20	8:30	8:40	8:50	6:10	6:17	6:27	6:37	6:47				
8:20	8:26	8:36	8:40	8:50	9:00	9:10	6:27	6:34	6:44	6:54	7:04				
8:40	8:46	8:53	9:00	9:10	9:20	9:30	6:44	6:51	7:01	7:11	7:21				
9:00	9:06	9:13	9:20	9:30	9:40	9:50	6:51	6:58	7:08	7:18	7:28				
10:00	10:05	10:13	10:20	10:30	10:40	10:50	7:08	7:15	7:25	7:35	7:45				
10:20	10:25	10:33	10:40	10:50	11:00	11:10	7:25	7:32	7:42	7:52	8:02				
10:40	10:45	10:53	11:00	11:10	11:20	11:30	7:42	7:49	7:59	8:09	8:19				
11:00	11:05	11:13	11:20	11:30	11:40	11:50	8:09	8:16	8:26	8:36	8:46				
11:20	11:25	11:33	11:40	11:50	12:00	12:10	8:26	8:33	8:43	8:53	9:03				
12:00M	12:05A	12:15A	12:20A	12:25A	12:30A	12:35A	8:43	8:50	9:00	9:10	9:20				
12:48A	12:52	12:59	1:02	1:07	1:11	1:15	8:50	8:57	9:07	9:17	9:27				

All buses are accessible to persons with disabilities

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

VALID PASSES: Unibus (\$4.50/mo.), Local Bus (\$55/mo.), Student/Youth Unibus (\$30/mo.), Senior/TAP Unibus (\$30/mo.) and express bus, commuter rail, and FREE FARES: Children 11 and under ride free when accompanied by an adult; Blind Access: CharlieCard holders ride free and if using a guide, the guide rides free. *Senior/Youth and Senior/TAP fares are available to students through participating middle schools and high schools. Youth CharlieCards are available through community partners in the Boston metro area. Visit www.mbta.com for more information. ** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

f - Leaves from Cambridge Street at Fallon Street
s - Does NOT run during school vacation
w - Waits for last trolley to arrive at Lechmere Station.

Fall 2018 & Winter 2019 Holidays
9/24/18: see Sunday 10/1/18: see Weekday
11/22/18, 12/24/18, 1/1/19: see Sunday 12/1/19 & 2/18/19: see Saturday

Bus Route 69 - Weekday					
Inbound			Outbound		
05:25 (69.0)(B018) [57] {FA17}	On	0	05:40 (69.0)(B018) [58] {FA17}	On	5.4
	Off	3.6		Off	0
	Load	0.1		Load	5.4
05:55 (69.0)(B018) [59] {FA17}	On	0	06:10 (69.0)(B018) [59] {FA17}	On	6.1
	Off	9.9		Off	0
	Load	0		Load	6.1
06:20 (69.0)(B020) [1] {FA17}	On	0	06:40 (69.0)(B020) [1] {FA17}	On	6
	Off	6		Off	0
	Load	0		Load	6
06:45 (69.0)(B148) [14] {FA17}	On	0	07:00 (69.0)(B084) [19] {FA17}	On	2
	Off	10.1		Off	0
	Load	0		Load	2
07:05 (69.0)(B020) [2] {FA17}	On	0	07:15 (69.0)(B022) [3] {FA17}	On	10
	Off	18.5		Off	0
	Load	0		Load	10
07:20 (69.0)(B084) [24] {FA17}	On	0	07:25 (69.0)(B020) [2] {FA17}	On	11
	Off	14.8		Off	0
	Load	0		Load	11
07:35 (69.0)(B022) [5] {FA17}	On	0	07:35 (69.0)(B152) [21] {FA17}	On	8.6
	Off	17.4		Off	0
	Load	0		Load	8.6
07:50 (69.0)(B020) [2] {FA17}	On	0	07:45 (69.0)(B084) [24] {FA17}	On	10.4
	Off	22.5		Off	0
	Load	0		Load	10.4
08:00 (69.0)(B021) [10] {FA17}	On	0	07:55 (69.0)(B022) [6] {FA17}	On	6.7
	Off	21.3		Off	0
	Load	0		Load	6.7
08:10 (69.0)(B152) [30] {FA17}	On	0	08:10 (69.0)(B020) [2] {FA17}	On	8
	Off	14.9		Off	0
	Load	0		Load	8
08:20 (69.0)(B022) [6] {FA17}	On	0	08:25 (69.0)(B021) [10] {FA17}	On	9.4
	Off	20.2		Off	0
	Load	0.2		Load	9.4
08:30 (69.0)(B020) [2] {FA17}	On	0	08:40 (69.0)(B152) [30] {FA17}	On	5.6
	Off	14		Off	0
	Load	0		Load	5.6
08:40 (69.0)(B079) [45] {FA17}	On	0	08:55 (69.0)(B020) [2] {FA17}	On	8.5
	Off	12.4		Off	0
	Load	0		Load	8.5
08:50 (69.0)(B021) [10] {FA17}	On	0	09:12 (69.0)(B021) [10] {FA17}	On	7.4
	Off	14.5		Off	0
	Load	0		Load	7.4
09:10 (69.0)(B152) [30] {FA17}	On	0	09:30 (69.0)(B146) [18] {FA17}	On	5.6
	Off	13.5		Off	0
	Load	0		Load	5.7
	On	0		On	10

Bus Route 69 - Weekday					
Inbound			Outbound		
09:30 (69.0)(B066) [18] {FA17}	Off	10.9	09:55 (69.0)(B066) [19] {FA17}	Off	0
	Load	0		Load	10
09:55 (69.0)(B023) [2] {FA17}	On	0	10:20 (69.0)(B023) [27] {FA17}	On	7.7
	Off	10.5		Off	0
10:20 (69.0)(B066) [18] {FA17}	Load	3.5	10:45 (69.0)(B066) [18] {FA17}	Load	7.7
	On	0		On	9.7
10:45 (69.0)(B023) [28] {FA17}	Off	13.3	11:10 (69.0)(B023) [28] {FA17}	Off	0
	Load	0		Load	9.7
11:10 (69.0)(B025) [36] {FA17}	On	0	11:35 (69.0)(B025) [37] {FA17}	On	8
	Off	10.6		Off	0
11:35 (69.0)(B023) [28] {FA17}	Load	0	12:00 (69.0)(B023) [28] {FA17}	Load	8
	On	0		On	8.7
12:00 (69.0)(B025) [39] {FA17}	Off	13	12:25 (69.0)(B025) [39] {FA17}	Off	0
	Load	0.1		Load	8.7
12:25 (69.0)(B023) [28] {FA17}	On	0	12:50 (69.0)(B023) [28] {FA17}	On	8.8
	Off	12		Off	0
12:50 (69.0)(B025) [39] {FA17}	Load	0	13:15 (69.0)(B025) [39] {FA17}	Load	8.8
	On	0		On	9.6
13:15 (69.0)(B025) [7] {SP17}	Off	12.8	13:40 (69.0)(B039) [1] {FA17}	Off	0
	Load	0		Load	9.6
13:40 (69.0)(B025) [39] {FA17}	On	0	14:10 (69.0)(B025) [37] {FA17}	On	7.7
	Off	12.9		Off	0
14:01 (69.0)(B039) [1] {FA17}	Load	0.1	14:20 (69.0)(B095) [3] {FA17}	Load	7.7
	On	0		On	13
14:17 (69.0)(B024) [14] {FA17}	Off	11.8	14:30 (69.0)(B039) [1] {FA17}	Off	0
	Load	0		Load	13
14:34 (69.0)(B025) [38] {FA17}	On	0	14:40 (69.0)(B024) [18] {FA17}	On	8.7
	Off	12.7		Off	0
14:47 (69.1)(B159) [16] {FA17}	Load	0	15:00 (69.0)(B025) [37] {FA17}	Load	9
	On	0		On	11.2
14:58 (69.1)(B026) [8] {FA17}	Off	17		Off	0
	Load	0			

Bus Route 69 - Weekday				
Inbound			Outbound	
	Load	0		Load 11.2
14:51 (69.0)(B095) [8] {FA17}	On	0	15:20 (69.0)(B026) [49] {FA17}	On 13.4
	Off	6.8		Off 0
	Load	0		Load 13.4
15:08 (69.0)(B024) [19] {FA17}	On	0	15:40 (69.0)(B024) [18] {FA17}	On 10.2
	Off	16.6		Off 0
	Load	0.2		Load 10.3
15:28 (69.0)(B025) [36] {FA17}	On	0	16:00 (69.0)(B025) [36] {FA17}	On 13.1
	Off	17.3		Off 0
	Load	0.1		Load 13.2
15:48 (69.0)(B026) [51] {FA17}	On	0	16:20 (69.0)(B026) [49] {FA17}	On 15.3
	Off	15.7		Off 0
	Load	0		Load 15.6
16:08 (69.0)(B024) [17] {FA17}	On	0	16:40 (69.0)(B024) [17] {FA17}	On 18.3
	Off	17.6		Off 0
	Load	0		Load 18.3
16:28 (69.0)(B025) [36] {FA17}	On	0	17:00 (69.0)(B025) [34] {FA17}	On 17.3
	Off	15.3		Off 0
	Load	0		Load 17.3
16:48 (69.0)(B026) [48] {FA17}	On	0	17:20 (69.0)(B026) [50] {FA17}	On 22.4
	Off	13.5		Off 0
	Load	0		Load 22.4
17:08 (69.0)(B024) [18] {FA17}	On	0	17:40 (69.0)(B024) [17] {FA17}	On 21.2
	Off	19.2		Off 0
	Load	0.1		Load 21.3
17:28 (69.0)(B025) [37] {FA17}	On	0	18:00 (69.0)(B025) [37] {FA17}	On 18.2
	Off	13.2		Off 0
	Load	0.1		Load 18.3
17:48 (69.0)(B026) [50] {FA17}	On	0	18:20 (69.0)(B026) [51] {FA17}	On 17.6
	Off	12.2		Off 0
	Load	0		Load 17.6
18:08 (69.0)(B024) [17] {FA17}	On	0	18:40 (69.0)(B024) [16] {FA17}	On 16.1
	Off	10.7		Off 0
	Load	0		Load 16.1
18:28 (69.0)(B025) [38] {FA17}	On	0	19:00 (69.0)(B025) [36] {FA17}	On 15.2
	Off	9.6		Off 0
	Load	0		Load 15.2
18:48 (69.0)(B026) [51] {FA17}	On	0	19:40 (69.0)(B025) [36] {FA17}	On 12.4
	Off	7.7		Off 0
	Load	0		Load 12.4
19:20 (69.0)(B025) [35] {FA17}	On	0	20:20 (69.0)(B059) [4] {FA17}	On 11.3
	Off	8.6		Off 0
	Load	0		Load 11.3
20:00 (69.0)(B025) [35] {FA17}	On	0	21:00 (69.0)(B059) [4] {FA17}	On 14.3
	Off	6.3		Off 0
	Load	0		Load 14.3

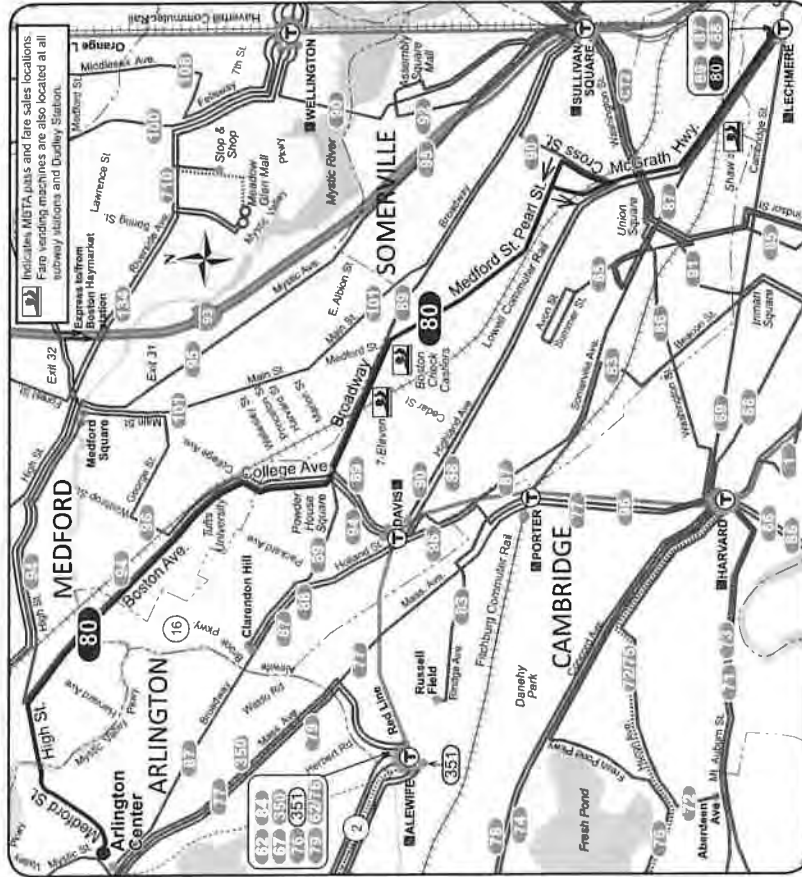
Bus Route 69 - Weekday					
Inbound			Outbound		
20:40 (69.0)(B059) [4] {FA17}	On	0	21:40 (69.0)(B059) [4] {FA17}	On	8.3
	Off	6		Off	0
	Load	0		Load	8.3
21:20 (69.0)(B059) [4] {FA17}	On	0	22:20 (69.0)(B059) [4] {FA17}	On	8.5
	Off	6		Off	0
	Load	0		Load	8.5
22:00 (69.0)(B059) [4] {FA17}	On	0	23:00 (69.0)(B027) [14] {FA17}	On	3.7
	Off	5.5		Off	0
	Load	0		Load	3.8
22:40 (69.0)(B059) [4] {FA17}	On	0	23:40 (69.0)(B027) [38] {FA17}	On	3.4
	Off	4.8		Off	0
	Load	0		Load	3.5
23:20 (69.0)(B027) [33] {FA17}	On	0	24:20 (69.0)(B027) [40] {FA17}	On	2.9
	Off	4.9		Off	0
	Load	0		Load	2.9
24:00 (69.0)(B027) [39] {FA17}	On	0	25:02 (69.0)(B027) [27] {FA17}	On	2.3
	Off	3.8		Off	0
	Load	0		Load	2.3
24:49 (69.0)(B027) [40] {FA17}	On	0	Total	On	24.3
	Off	2.1		Off	0
	Load	0		Load	0
Total	On	0			
	Off	24.3			
	Load	0			

Bus Route 69 - Saturday					
Inbound			Outbound		
05:15 (69.0)(B003) [13] {FA17}	On	0	05:30 (69.0)(B003) [14] {FA17}	On	1.8
	Off	3.8		Off	0
	Load	0		Load	1.8
05:45 (69.0)(B003) [14] {FA17}	On	0	06:00 (69.0)(B003) [15] {FA17}	On	2.5
	Off	1.9		Off	0
	Load	0		Load	2.5
06:15 (69.0)(B003) [14] {FA17}	On	0	06:30 (69.0)(B003) [15] {FA17}	On	4.8
	Off	1.4		Off	0
	Load	0.1		Load	5
06:45 (69.0)(B003) [14] {FA17}	On	0	07:00 (69.0)(B003) [14] {FA17}	On	3.3
	Off	2.6		Off	0
	Load	0		Load	3.3
07:17 (69.0)(B003) [14] {FA17}	On	0	07:30 (69.0)(B003) [14] {FA17}	On	5
	Off	2.6		Off	0
	Load	0		Load	5
07:47 (69.0)(B003) [14] {FA17}	On	0	08:00 (69.0)(B003) [14] {FA17}	On	4.8
	Off	4.9		Off	0
	Load	0		Load	4.8
08:17 (69.0)(B003) [14] {FA17}	On	0	08:35 (69.0)(B019) [1] {FA17}	On	4
	Off	6.9		Off	0
	Load	0		Load	4
08:52 (69.0)(B019) [1] {FA17}	On	0	09:10 (69.0)(B019) [1] {FA17}	On	6
	Off	4		Off	0
	Load	0		Load	6
09:27 (69.0)(B019) [1] {FA17}	On	0	09:45 (69.0)(B104) [1] {SP17}	On	6
	Off	8		Off	0
	Load	0		Load	6
10:02 (69.0)(B008) [2] {FA17}	On	0	10:22 (69.0)(B008) [2] {FA17}	On	4
	Off	14.5		Off	0
	Load	0		Load	4
10:42 (69.0)(B008) [2] {FA17}	On	0	10:47 (69.0)(B009) [1] {FA17}	On	0
	Off	10.5		Off	0
	Load	0		Load	0
11:09 (69.0)(B009) [1] {FA17}	On	0	11:09 (69.0)(B008) [2] {FA17}	On	10
	Off	18		Off	0
	Load	0		Load	10
11:31 (69.0)(B008) [2] {FA17}	On	0	11:31 (69.0)(B009) [1] {FA17}	On	5
	Off	17		Off	0
	Load	0		Load	5
11:53 (69.0)(B009) [1] {FA17}	On	0	11:53 (69.0)(B008) [2] {FA17}	On	8.5
	Off	13		Off	0
	Load	0		Load	8.5
12:15 (69.0)(B008) [2] {FA17}	On	0	12:15 (69.0)(B009) [1] {FA17}	On	9
	Off	15		Off	0
	Load	0		Load	9
	On	0		On	8.5

Bus Route 69 - Saturday					
Inbound			Outbound		
12:37 (69.0)(B009) [1] {FA17}	Off	14	12:37 (69.0)(B008) [2] {FA17}	Off	0
	Load	0		Load	8.5
12:59 (69.0)(B008) [2] {FA17}	On	0	12:59 (69.0)(B009) [1] {FA17}	On	10
	Off	21.5		Off	0
13:21 (69.0)(B004) [3] {FA17}	Load	0	13:21 (69.0)(B011) [7] {FA17}	Load	10
	On	0		On	8.3
13:43 (69.0)(B011) [8] {FA17}	Off	15.7	13:43 (69.0)(B004) [5] {FA17}	Off	0
	Load	0		Load	8.3
14:05 (69.0)(B004) [4] {FA17}	On	0	14:05 (69.0)(B011) [8] {FA17}	On	9
	Off	15.3		Off	0
14:27 (69.0)(B011) [8] {FA17}	Load	0	14:27 (69.0)(B004) [4] {FA17}	Load	9
	On	0		On	12.6
14:49 (69.0)(B004) [5] {FA17}	Off	12	14:49 (69.0)(B005) [1] {SP17}	Off	0
	Load	0		Load	13
15:11 (69.0)(B005) [9] {FA17}	On	0	15:11 (69.0)(B004) [5] {FA17}	On	13
	Off	14.4		Off	0
15:33 (69.0)(B004) [5] {FA17}	Load	0	15:33 (69.0)(B005) [10] {FA17}	Load	15.4
	On	0		On	13
15:55 (69.0)(B005) [10] {FA17}	Off	16.2	15:55 (69.0)(B004) [5] {FA17}	Off	0
	Load	0		Load	13
16:17 (69.0)(B004) [5] {FA17}	On	0	16:17 (69.0)(B005) [10] {FA17}	On	12.6
	Off	12.3		Off	0
16:39 (69.0)(B005) [10] {FA17}	Load	0	16:39 (69.0)(B004) [5] {FA17}	Load	16.2
	On	0		On	12.8
17:01 (69.0)(B004) [5] {FA17}	Off	9.6	17:01 (69.0)(B005) [10] {FA17}	Off	0
	Load	0		Load	13.1
17:23 (69.0)(B005) [11] {FA17}	On	12.4	17:23 (69.0)(B004) [5] {FA17}	On	20.4
	Off	0		Off	0
17:45 (69.0)(B004) [5] {FA17}	Load	0	17:45 (69.0)(B005) [11] {FA17}	Load	20.4
	On	0		On	16.4
18:07 (69.0)(B005) [11] {FA17}	Off	6	18:07 (69.0)(B004) [5] {FA17}	Off	0
	Load	0		On	14
	On	0		Off	0
	Off	9.6			

Bus Route 69 - Saturday					
Inbound				Outbound	
	Load	0		Load	14
18:29 (69.0)(B004) [5] {FA17}	On	0	18:29 (69.0)(B011) [3] {FA17}	On	7.3
	Off	7.8		Off	0
	Load	0		Load	7.3
18:51 (69.0)(B011) [4] {FA17}	On	0	18:51 (69.0)(B046) [2] {FA17}	On	14
	Off	7.3		Off	0
	Load	0		Load	14
19:26 (69.0)(B011) [4] {FA17}	On	0	19:09 (69.0)(B011) [4] {FA17}	On	8.8
	Off	7.3		Off	0
	Load	0		Load	8.8
20:01 (69.0)(B006) [5] {FA17}	On	0	19:44 (69.0)(B006) [5] {FA17}	On	9.2
	Off	4		Off	0
	Load	0		Load	9.2
20:36 (69.0)(B006) [5] {FA17}	On	0	20:19 (69.0)(B006) [5] {FA17}	On	11
	Off	6		Off	0
	Load	0		Load	11
21:11 (69.0)(B006) [5] {FA17}	On	0	20:54 (69.0)(B006) [5] {FA17}	On	10.8
	Off	6		Off	0
	Load	0		Load	10.8
21:46 (69.0)(B006) [5] {FA17}	On	0	21:29 (69.0)(B006) [5] {FA17}	On	8.4
	Off	3.2		Off	0
	Load	0		Load	8.4
22:21 (69.0)(B007) [11] {FA17}	On	0	22:04 (69.0)(B007) [10] {FA17}	On	6
	Off	4.2		Off	0
	Load	0		Load	6
22:59 (69.0)(B007) [11] {FA17}	On	0	22:45 (69.0)(B007) [11] {FA17}	On	7
	Off	4.2		Off	0
	Load	0		Load	7
23:29 (69.0)(B007) [12] {FA17}	On	0	23:15 (69.0)(B007) [12] {FA17}	On	5.6
	Off	3.5		Off	0
	Load	0.2		Load	5.6
23:59 (69.0)(B007) [12] {FA17}	On	0	23:45 (69.0)(B007) [12] {FA17}	On	5.1
	Off	2.7		Off	0
	Load	0		Load	5.1
24:29 (69.0)(B007) [10] {FA17}	On	0	24:15 (69.0)(B007) [10] {FA17}	On	3.3
	Off	0.9		Off	0
	Load	0.2		Load	3.3
24:59 (69.0)(B007) [7] {FA17}	On	0	24:45 (69.0)(B007) [7] {FA17}	On	1.9
	Off	2.7		Off	0
	Load	0		Load	1.9
Total	On	0	25:15 (69.0)(B007) [1] {FA17}	On	9
	Off	1.8		Off	0
	Load	0		Load	9
			Total	On	0
				Off	0
				Load	0

Route 80 Arlington Center - Lechmere Station



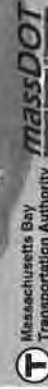
80

Effective September 2, 2018

Arlington Center-
Lechmere Station

Serving

- Medford Hillside
- Powder House Square
- Magoun Square
- Gilman Square
- Green Line



Massachusetts Bay
Transportation Authority
Information 617-222-3200 • 1-800-392-6100
(TTY) 617-222-5146 • www.mbta.com

Weekday				Saturday				Sunday			
80				80				80			
Inbound		Outbound		Inbound		Outbound		Inbound		Outbound	
Leave Arlington Center	Arrive Powder House Sq	Leave Lechmere Station	Arrive Arlington Center	Leave Arlington Center	Arrive Powder House Sq	Leave Lechmere Station	Arrive Arlington Center	Leave Arlington Center	Arrive Powder House Sq	Leave Lechmere Station	Arrive Arlington Center
5:00A	5:07A	5:24A	5:52A	5:05A	5:11A	5:25A	5:51A	6:30A	6:37A	6:51A	7:11A
5:25	5:49	5:55	6:19	6:00	6:06	6:20	6:40	7:30	7:37	7:51	8:11
5:57	6:04	6:25	6:49	6:30	6:36	6:50	7:10	8:30	8:38	8:54	9:14
6:20	6:27	6:44	7:08	7:00	7:06	7:20	7:40	9:30	9:39	9:56	10:14
6:35	6:42	6:59	7:24	7:30	7:37	7:53	8:10	10:35	10:44	11:01	11:24
6:55	7:04	7:29	7:57	8:00	8:07	8:23	8:40	11:45	11:55	12:12P	12:46P
7:15	7:25	7:56	8:15	8:30	8:37	8:53	9:12				
7:35	7:48	8:19	8:44	9:00	9:08	9:25	9:42	12:55P	1:06P	1:23P	1:30
7:55	8:08	8:39	9:09	9:30	9:38	9:55	10:14	2:05	2:14	2:30	2:40
8:25	8:38	9:06	9:34	10:00	10:11	10:29	10:49	3:15	3:24	3:40	3:50
8:50	9:02	9:25	10:08	10:35	10:46	11:04	11:24	4:25	4:34	4:50	5:00
9:15	9:26	9:45	10:28	11:10	11:21	11:39	11:59	5:35	5:44	6:00	6:10
9:35	9:44	10:03	10:53	11:45	11:56	12:14P	12:34P	6:45	6:54	7:10	7:20
10:00	10:09	10:28	11:18				12:49P	7:55	8:03	8:19	8:30
10:30	10:39	10:58	11:38	12:20P	12:31P	12:49P	1:09	9:05	9:13	9:29	9:40
10:50	10:59	11:18	11:55	12:55	1:06	1:24	1:44	10:15	10:23	10:36	10:50
11:15	11:24	11:43	12:08P	1:30	1:41	1:59	2:19	11:25	11:32	11:44	12:00M
11:40	11:49	12:08P	12:33P	2:05	2:16	2:34	2:54				
			12:48P	2:40	2:51	3:09	3:29				
			1:13	3:15	3:26	3:44	4:03				
			1:38	3:50	4:01	4:19	4:38				
			2:03	4:25	4:35	4:52	5:13				
			2:28	5:00	5:09	5:26	5:48				
			3:03	5:35	5:44	6:01	6:18				
			3:33	6:05	6:14	6:31	7:00				
			3:53	6:30	6:38	6:54	8:00				
			4:28	7:30	7:38	7:54	9:12				
			4:53	8:30	8:36	8:52	10:00				
			5:08	9:30	9:36	9:52	11:00				
			5:41	10:30	10:36	10:52	12:11A				
			6:21	11:30	11:36	11:52	12:22A				
			6:39	12:30A	12:36A	12:50A	1:22				
			7:01								
			7:14								
			7:27								
			7:45								
			8:12								
			8:29								
			8:42								
			9:17								
			9:44								
			9:57								
			10:41								
			11:22								
			12:22A								
			1:10								
			1:22								
			1:49								
			12:36A								
			12:49A								

All buses are accessible to persons with disabilities



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

VALID PASSENGER: Local Bus (\$34.50/mo.), Local Bus (\$55/mo.), *Student/Youth LinkPass (\$30.00/mo.), **Senior/TAP LinkPass (\$30/mo.), and express bus, commuter rail, and boat passes.

FREE FARES: Children 11 and under ride free when accompanied by an adult. Blind persons, persons with physical disabilities, and persons with mental disabilities are available through participating middle schools and high schools. Youth CharlieCards are available through community partners in the Boston metro area. Visit www.mbta.com/youth-charliecard for more information.

** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

Fall 2018 & Winter 2019 Holidays
 9/3/18: see Sunday 10/8/18: see Weekday
 11/22/18, 12/25/18, 1/1/19: see Sunday 1/21/19 & 2/18/19: see Saturday

w- Waits for last trolley to arrive at Lechmere Station.

NOTE: Buses at Arlington Center board on Medford Street at Massachusetts Avenue.

Route 80
Arlington Center - Lechmere Station

Bus Route 80 - Weekday						
Inbound				Outbound		
05:00 (80.0)(B091) [4] {FA17}	On	0		05:28 (80.0)(B091) [5] {FA17}	On	1.2
	Off	11			Off	0
	Load	0.8			Load	1.8
05:25 (80.0)(B096) [2] {FA17}	On	0		05:55 (80.0)(B096) [2] {FA17}	On	1.5
	Off	11			Off	0
	Load	0			Load	1.5
05:57 (80.0)(B091) [5] {FA17}	On	0		06:25 (80.0)(B091) [5] {FA17}	On	4.4
	Off	16.8			Off	0
	Load	0.4			Load	4.8
06:20 (80.0)(B068) [45] {FA17}	On	0		06:55 (80.0)(B096) [2] {FA17}	On	2
	Off	16.9			Off	0
	Load	1			Load	2
06:35 (80.0)(B098) [18] {FA17}	On	0		07:10 (80.0)(B098) [19] {FA17}	On	3.6
	Off	25.8			Off	0
	Load	0.1			Load	3.7
06:55 (80.0)(B091) [5] {FA17}	On	0		07:40 (80.0)(B091) [5] {FA17}	On	5.4
	Off	53.8			Off	0
	Load	0.6			Load	6
07:15 (80.0)(B092) [6] {FA17}	On	0		08:05 (80.0)(B092) [7] {FA17}	On	3.7
	Off	38			Off	0
	Load	0			Load	3.7
07:35 (80.0)(B096) [2] {FA17}	On	0		08:30 (80.0)(B096) [2] {FA17}	On	4
	Off	31.5			Off	0
	Load	0			Load	4
07:55 (80.0)(B149) [17] {FA17}	On	0		08:55 (80.0)(B149) [23] {FA17}	On	6
	Off	46.7			Off	0
	Load	0.4			Load	6.3
08:25 (80.0)(B091) [6] {FA17}	On	0		09:20 (80.0)(B091) [6] {FA17}	On	2.8
	Off	35.3			Off	0
	Load	0			Load	2.8
08:50 (80.0)(B092) [7] {FA17}	On	0		09:55 (80.0)(B097) [44] {FA17}	On	3.9
	Off	25.9			Off	0
	Load	0			Load	4
09:15 (80.0)(B097) [44] {FA17}	On	0		10:15 (80.0)(B149) [24] {FA17}	On	4.2
	Off	20.7			Off	0
	Load	0.2			Load	4.2
09:35 (80.0)(B149) [24] {FA17}	On	0		10:40 (80.0)(B093) [20] {FA17}	On	4.3
	Off	15.9			Off	0
	Load	0			Load	4.3
10:00 (80.0)(B093) [18] {FA17}	On	0		11:05 (80.0)(B097) [40] {FA17}	On	7.2
	Off	14.3			Off	0
	Load	0.2			Load	7.3
10:30 (80.0)(B097) [45] {FA17}	On	0		11:30 (80.0)(B149) [24] {FA17}	On	5.3
	Off	15.1			Off	0
	Load	0			Load	5.3

Bus Route 80 - Weekday					
Inbound			Outbound		
10:50 (80.0)(B149) [23] {FA17}	On	0	11:55 (80.0)(B093) [20] {FA17}	On	6.5
	Off	9		Off	0
	Load	0		Load	6.5
11:15 (80.0)(B093) [20] {FA17}	On	0	12:20 (80.0)(B097) [40] {FA17}	On	9.7
	Off	13.6		Off	0
	Load	0.1		Load	9.8
11:40 (80.0)(B097) [40] {FA17}	On	0	12:45 (80.0)(B100) [60] {FA17}	On	10.4
	Off	14.4		Off	0
	Load	0.1		Load	10.5
12:05 (80.0)(B149) [24] {FA17}	On	0	13:10 (80.0)(B093) [18] {FA17}	On	8.5
	Off	14.5		Off	0
	Load	0.4		Load	8.8
12:35 (80.0)(B093) [20] {FA17}	On	0	13:35 (80.0)(B097) [39] {FA17}	On	9.5
	Off	11.4		Off	0
	Load	0.3		Load	9.5
13:00 (80.0)(B097) [40] {FA17}	On	0	14:00 (80.0)(B100) [36] {FA17}	On	12
	Off	9.1		Off	0
	Load	0		Load	12.1
13:25 (80.0)(B100) [60] {FA17}	On	0	14:30 (80.0)(B093) [21] {FA17}	On	13.2
	Off	13.3		Off	0
	Load	0.2		Load	13.3
13:50 (80.0)(B093) [20] {FA17}	On	0	15:00 (80.0)(B177) [17] {FA17}	On	11
	Off	9.9		Off	0
	Load	0.1		Load	12.1
14:15 (80.0)(B097) [38] {FA17}	On	0	15:20 (80.0)(B095) [9] {FA17}	On	16
	Off	10.2		Off	0
	Load	0		Load	16
14:40 (80.0)(B100) [42] {FA17}	On	0	15:35 (80.0)(B090) [6] {FA17}	On	12.7
	Off	13.4		Off	0
	Load	0		Load	13
15:00 (80.0)(B090) [3] {FA17}	On	0	15:55 (80.0)(B093) [21] {FA17}	On	14.8
	Off	10.3		Off	0
	Load	0		Load	14.8
15:15 (80.0)(B093) [21] {FA17}	On	0	16:20 (80.0)(B094) [10] {FA17}	On	20.6
	Off	7.7		Off	0
	Load	0		Load	20.7
15:45 (80.0)(B094) [5] {FA17}	On	0	16:35 (80.0)(B095) [6] {FA17}	On	22.8
	Off	14		Off	0
	Load	1.2		Load	22.8
16:00 (80.0)(B095) [8] {FA17}	On	0	17:00 (80.0)(B090) [5] {FA17}	On	29.8
	Off	7.3		Off	0
	Load	0		Load	29.8
16:20 (80.0)(B090) [6] {FA17}	On	0	17:20 (80.0)(B093) [24] {FA17}	On	35.2
	Off	8.5		Off	0
	Load	0		Load	35.2

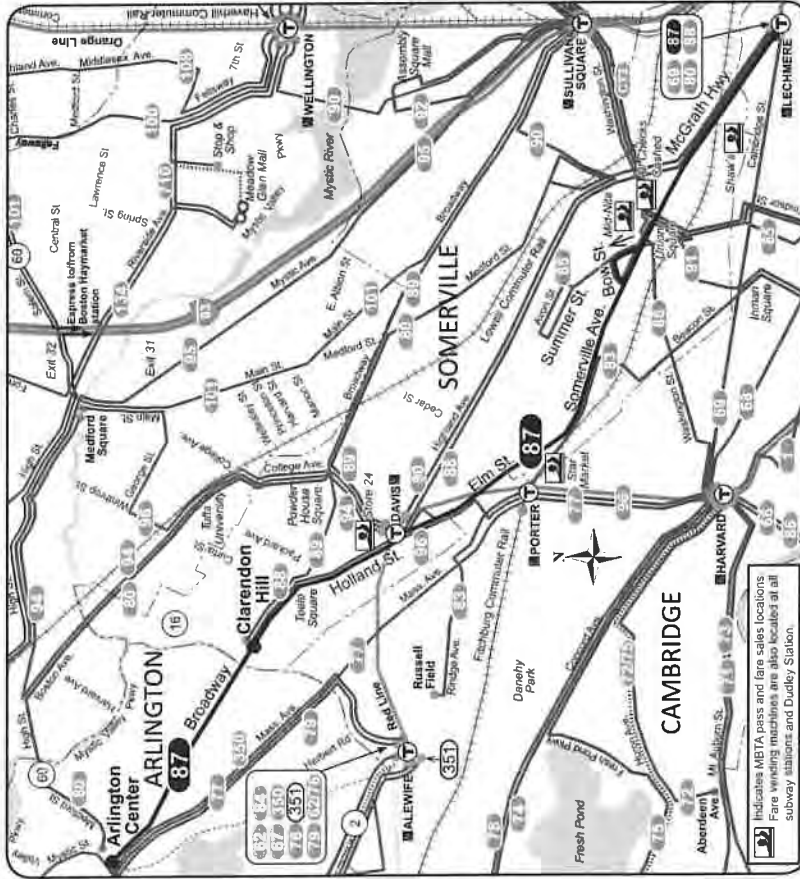
Bus Route 80 - Weekday					
Inbound			Outbound		
16:35 (80.0)(B093) [23] {FA17}	On	0	17:40 (80.0)(B094) [10] {FA17}	On	37.1
	Off	7.8		Off	0
	Load	0		Load	37.1
17:00 (80.0)(B094) [10] {FA17}	On	0	18:00 (80.0)(B095) [6] {FA17}	On	32.5
	Off	11.7		Off	0
	Load	0		Load	32.5
17:15 (80.0)(B095) [6] {FA17}	On	0	18:30 (80.0)(B090) [5] {FA17}	On	38
	Off	11		Off	0
	Load	0		Load	38.8
17:50 (80.0)(B090) [5] {FA17}	On	0	19:00 (80.0)(B159) [18] {FA17}	On	22.6
	Off	8.8		Off	0
	Load	0.8		Load	23.1
18:30 (80.0)(B059) [3] {FA17}	On	0	19:45 (80.0)(B161) [14] {FA17}	On	20.7
	Off	9.3		Off	0
	Load	0		Load	20.7
19:10 (80.0)(B090) [5] {FA17}	On	0	20:15 (80.0)(B030) [7] {FA17}	On	12.4
	Off	3		Off	0
	Load	0		Load	12.4
19:30 (80.0)(B151) [40] {FA17}	On	0	20:50 (80.0)(B161) [15] {FA17}	On	12.3
	Off	3.2		Off	0
	Load	0		Load	12.4
20:20 (80.0)(B161) [15] {FA17}	On	0	21:30 (80.0)(B030) [14] {FA17}	On	20.4
	Off	2.7		Off	0
	Load	0.2		Load	20.4
21:00 (80.0)(B030) [14] {FA17}	On	0	22:15 (80.0)(B161) [14] {FA17}	On	13.6
	Off	3.9		Off	0
	Load	0		Load	13.6
21:45 (80.0)(B161) [15] {FA17}	On	0	23:00 (80.0)(B099) [19] {FA17}	On	13
	Off	4.5		Off	0
	Load	0.3		Load	13
22:30 (80.0)(B030) [14] {FA17}	On	0	24:00 (80.0)(B099) [24] {FA17}	On	8.9
	Off	3.1		Off	0
	Load	0		Load	8.9
23:30 (80.0)(B099) [23] {FA17}	On	0	25:00 (80.0)(B099) [16] {FA17}	On	4.9
	Off	1.5		Off	0
	Load	0.1		Load	4.9
24:30 (80.0)(B099) [23] {FA17}	On	0	Total	On	1.2
	Off	2.2		Off	0
	Load	0		Load	0
Total	On	0			
	Off	1.2			
	Load	0			

Bus Route 80 - Saturday					
Inbound			Outbound		
05:05 (80.0)(B041) [12] {FA17}	On	0	05:30 (80.0)(B041) [12] {FA17}	On	0.9
	Off	6.1		Off	0
	Load	0		Load	0.9
06:00 (80.0)(B041) [13] {FA17}	On	0	06:30 (80.0)(B041) [13] {FA17}	On	3.2
	Off	8.6		Off	0
	Load	0		Load	3.2
06:30 (80.0)(B042) [6] {FA17}	On	0	07:00 (80.0)(B042) [7] {FA17}	On	3.9
	Off	11.7		Off	0
	Load	0		Load	3.9
07:00 (80.0)(B041) [12] {FA17}	On	0	07:30 (80.0)(B041) [12] {FA17}	On	4.3
	Off	8.5		Off	0
	Load	0		Load	4.3
07:30 (80.0)(B042) [7] {FA17}	On	0	08:00 (80.0)(B042) [7] {FA17}	On	2.3
	Off	12.1		Off	0
	Load	0		Load	2.3
08:00 (80.0)(B041) [13] {FA17}	On	0	08:30 (80.0)(B041) [13] {FA17}	On	5.4
	Off	11.2		Off	0
	Load	0		Load	5.5
08:30 (80.0)(B042) [7] {FA17}	On	0	09:00 (80.0)(B042) [7] {FA17}	On	3.4
	Off	14.3		Off	0
	Load	0.3		Load	3.7
09:00 (80.0)(B041) [13] {FA17}	On	0	09:30 (80.0)(B041) [13] {FA17}	On	1.6
	Off	13.6		Off	0
	Load	0.2		Load	1.8
09:30 (80.0)(B042) [7] {FA17}	On	0	10:00 (80.0)(B042) [7] {FA17}	On	3.4
	Off	18		Off	0
	Load	1.9		Load	5.3
10:00 (80.0)(B041) [13] {FA17}	On	0	10:35 (80.0)(B048) [2] {FA17}	On	6
	Off	10.4		Off	0
	Load	0		Load	6
10:35 (80.0)(B042) [7] {FA17}	On	0	11:10 (80.0)(B080) [5] {FA17}	On	6.6
	Off	15		Off	0
	Load	0		Load	6.6
11:10 (80.0)(B048) [2] {FA17}	On	0	11:45 (80.0)(B048) [2] {FA17}	On	7
	Off	18		Off	0
	Load	0		Load	7
11:45 (80.0)(B080) [5] {FA17}	On	0	12:20 (80.0)(B077) [13] {FA17}	On	7.2
	Off	22		Off	0
	Load	0		Load	7.5
12:20 (80.0)(B048) [2] {FA17}	On	0	12:55 (80.0)(B053) [3] {SP17}	On	5
	Off	25.5		Off	0
	Load	0		Load	5

Bus Route 80 - Saturday					
Inbound			Outbound		
12:55 (80.0)(B077) [13] {FA17}	On	0	13:30 (80.0)(B051) [1] {SP17}	On	6
	Off	18.4		Off	0
	Load	0.1		Load	6
13:30 (80.0)(B053) [3] {SP17}	On	0	14:05 (80.0)(B053) [2] {SP17}	On	6.5
	Off	18.3		Off	0
	Load	5		Load	10.5
14:05 (80.0)(B051) [4] {SP17}	On	0	14:40 (80.0)(B051) [4] {SP17}	On	12
	Off	11.8		Off	0
	Load	0		Load	12
14:40 (80.0)(B053) [2] {SP17}	On	0	15:15 (80.0)(B060) [1] {FA16}	On	9
	Off	15		Off	0
	Load	0		Load	9
15:15 (80.0)(B051) [3] {SP17}	On	0	15:50 (80.0)(B051) [2] {SP17}	On	16.5
	Off	9		Off	0
	Load	1		Load	16.5
15:50 (80.0)(B070) [1] {FA17}	On	0	16:25 (80.0)(B043) [1] {FA17}	On	22
	Off	17		Off	0
	Load	0		Load	22
16:25 (80.0)(B051) [2] {SP17}	On	0	17:00 (80.0)(B051) [1] {SP17}	On	12
	Off	2.5		Off	0
	Load	0.5		Load	12
17:00 (80.0)(B043) [3] {FA17}	On	0	17:35 (80.0)(B043) [3] {FA17}	On	23.7
	Off	10		Off	0
	Load	0		Load	23.7
17:35 (80.0)(B051) [1] {SP17}	On	0	18:02 (80.0)(B073) [2] {SP17}	On	1
	Off	7		Off	0
	Load	0		Load	1
18:05 (80.0)(B072) [16] {FA17}	On	0	19:00 (80.0)(B045) [4] {FA17}	On	17.8
	Off	9.3		Off	0
	Load	0.1		Load	18
18:32 (80.0)(B045) [4] {FA17}	On	0	20:00 (80.0)(B046) [5] {FA17}	On	14.6
	Off	5		Off	0
	Load	0.3		Load	14.8
19:30 (80.0)(B046) [4] {FA17}	On	0	21:00 (80.0)(B046) [5] {FA17}	On	16.6
	Off	4.5		Off	0
	Load	0.3		Load	16.6
20:30 (80.0)(B046) [5] {FA17}	On	0	22:00 (80.0)(B046) [6] {FA17}	On	15
	Off	5		Off	0
	Load	0		Load	15
21:30 (80.0)(B046) [7] {FA17}	On	0	23:00 (80.0)(B047) [9] {FA17}	On	10.1
	Off	4.1		Off	0
	Load	0.3		Load	10.1

Bus Route 80 - Saturday						
Inbound				Outbound		
22:30 (80.0)(B046) [6] {FA17}	On	0		24:00 (80.0)(B047) [10] {FA17}	On	9.8
	Off	2.2			Off	0
	Load	0			Load	9.8
23:30 (80.0)(B047) [10] {FA17}	On	0		25:00 (80.0)(B047) [1] {FA17}	On	4
	Off	1.9			Off	0
	Load	0			Load	4
24:30 (80.0)(B047) [9] {FA17}	On	0		Total	On	256.8
	Off	1.7			Off	0
	Load	0			Load	264
Total	On	0				
	Off	0.9				
	Load	0				

Route 87 Arlington Center or Clarendon Hill - Lechmere Station



87

Effective September 2, 2018

Arlington Center or
Clarendon Hill-
Lechmere Station

Serving

- Teele Square
- Davis Station
- Union Square, Somerville
- Red Line
- Green Line

WELCOME



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Weekday

Saturday

Sunday

87

87

87

Inbound				Outbound				Inbound				Outbound			
Leave	Lv/Arrive	Arrive	Station	Leave	Lv/Arrive	Arrive	Station	Leave	Lv/Arrive	Arrive	Station	Leave	Lv/Arrive	Arrive	Station
Center	Arlington	Clarendon	Lechmere	Center	Arlington	Clarendon	Lechmere	Hill	Center	Arlington	Clarendon	Lechmere	Hill	Center	Arlington
5:10A	5:14A	5:25A	5:46A	5:30A	5:42A	5:48A	5:58A	6:10A	6:14A	6:17A	6:31A	6:38A	6:49A	6:57A	7:03A
5:32	5:36	5:47	6:00	6:12	6:15	6:18A	6:28A	6:40A	6:44	6:47	7:01	7:08	7:19	7:22	7:27
6:16	6:20	6:31	6:50	7:05	7:09	7:12	7:28	7:40	7:44	7:47	7:51	8:08	8:21	8:26	8:30
6:26A	6:32	6:37	6:52	7:06	7:21	7:25	7:41	7:50	7:54	8:01	8:07	8:24	8:36	8:40	8:45
6:52	6:58	7:05	7:22	7:35	7:54	8:01	8:15	8:10	8:14	8:19	8:36	8:48	8:52	8:57	9:01
7:16	7:26	7:33	7:50	8:05	8:24	8:30	8:45	8:40	8:44	8:49	8:56	9:08	9:22	9:27	9:32
7:36	7:46	7:53	8:15	8:30	8:49	8:53	8:58	8:40	8:44	8:49	8:56	9:08	9:22	9:27	9:32
7:58	8:05	8:12	8:37	8:47	9:06	9:10	9:15	9:10	9:15	9:20	9:39	9:38	9:55	10:00	10:06
8:20	8:27	8:34	8:59	9:11	9:30	9:34	9:39	9:40	9:45	9:50	10:11	10:07	10:24	10:29	10:35
8:47	8:54	9:01	9:19	9:40	9:59	10:03	10:08	10:10	10:20	10:26	10:48	10:30	10:47	10:52	10:58
9:07	9:12	9:18	9:36	10:10	10:29	10:33	10:38	10:15	10:20	10:26	10:48	10:30	10:47	10:52	10:58
9:27	9:32	9:38	9:56	10:40	10:59	11:03	11:08	10:45	10:50	10:56	11:18	10:55	11:11	11:19	11:23
9:47	9:52	9:58	10:14	11:10	11:29	11:33	11:38	11:10	11:15	11:21	11:43	11:25	11:43	11:51	11:55
10:15	10:20	10:26	10:46	11:35	11:40	11:46	12:08P	11:35	11:40	11:46	12:08P	11:55	12:14P	12:21P	12:26P
11:15	11:20	11:26	11:44	12:10P	12:30P	12:36P	12:41P	12:05P	12:10P	12:16P	12:38P	12:25P	12:42P	12:49P	12:54P
11:45	11:50	11:56	12:14P	12:40	1:00	1:06	1:11	12:35P	12:40	12:46P	1:08	12:55	1:12P	1:19	1:24
12:15P	12:26P	12:44P		1:10	1:30	1:36	1:41	1:05	1:10	1:16	1:38	1:25	1:42	1:49	1:54
12:50	12:55	1:01	1:19	1:20	1:30	1:36	1:41	1:35	1:39	1:45	2:06	1:55	2:12	2:19	2:24
1:50	1:55	2:01	2:19	2:19	2:30	2:36	2:41	2:05	2:09	2:15	2:36	2:25	2:42	2:49	2:54
2:15	2:20	2:26	2:45	2:30	2:40	2:46	2:51	2:35	2:39	2:45	3:06	2:55	3:12	3:19	3:24
2:40	2:45	2:51	3:11	3:40	4:00	4:06	4:11	3:35	3:39	3:45	3:36	3:25	3:42	3:49	3:54
3:00	3:05	3:11	3:31	4:00	4:20	4:26	4:31	3:35	3:39	3:44	4:14	3:55	4:12	4:19	4:24
3:20	3:25	3:31	3:51	4:20	4:42	4:51	4:56	4:05	4:09	4:14	4:35	4:25	4:42	4:49	4:54
3:40	3:45	3:51	4:11	4:40	5:02	5:11	5:16	4:35	4:39	4:44	5:05	4:55	5:12	5:19	5:24
4:00	4:05	4:11	4:31	5:00	5:22	5:31	5:36	5:05	5:09	5:14	5:35	5:25	5:42	5:49	5:54
4:20	4:25	4:31	4:51	5:20	5:42	5:51	5:56	5:35	5:39	5:44	6:05	5:50	6:07	6:14	6:19
4:40	4:45	4:51	5:11	5:40	6:02	6:11	6:16	6:15	6:19	6:24	6:44	6:15	6:32	6:37	6:41
5:00	5:05	5:11	5:31	6:05	6:27	6:36	6:41	6:55	6:59	7:03	7:23	6:50	7:08	7:13	7:17
5:25	5:30	5:36	5:56	6:25	6:47	6:56	7:01	7:30	7:34	7:38	7:58	7:30	7:48	7:53	7:57
5:45	5:50	5:56	6:16	6:45	7:06	7:11	7:16	8:00	8:03	8:06	8:24	8:10	8:26	8:31	8:35
6:05	6:10	6:16	6:36	7:05	7:24	7:29	7:34	8:00	8:03	8:06	8:24	8:10	8:26	8:31	8:35
6:27	6:32	6:38	6:58	7:25	7:44	7:49	7:54	8:00	8:03	8:06	8:24	8:10	8:26	8:31	8:35
6:46	6:51	6:57	7:17	7:50	8:09	8:14	8:19	8:00	8:03	8:06	8:24	8:10	8:26	8:31	8:35
7:11	7:16	7:22	7:42	8:20	8:39	8:44	8:49	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
7:44	7:48	7:52	8:12	8:55	9:14	9:19	9:24	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
8:01	8:05	8:09	8:27	9:30	9:45	9:50	9:55	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
8:25	8:30	8:35	8:55	10:05	10:20	10:25	10:30	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
8:50	8:55	8:59	9:16	10:45	11:00	11:05	11:10	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
9:15	9:20	9:25	9:45	11:20	11:35	11:40	11:45	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
9:40	9:45	9:50	10:10	11:50	12:05	12:10	12:15	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
10:05	10:10	10:15	10:35	12:25	12:40	12:45	12:50	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
10:30	10:35	10:40	10:51	12:50	13:05	13:10	13:15	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
10:55	11:00	11:05	11:16	1:00	1:15	1:20	1:25	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
11:10	11:15	11:20	11:31	1:05	1:20	1:25	1:30	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
11:35	11:40	11:45	11:56	1:10	1:25	1:30	1:35	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
12:00	12:05	12:10	12:21	1:15	1:30	1:35	1:40	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
12:25	12:30	12:35	12:46	1:20	1:35	1:40	1:45	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
12:50	12:55	13:00	13:11	1:25	1:40	1:45	1:50	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
13:05	13:10	13:15	13:26	1:30	1:45	1:50	1:55	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
13:30	13:35	13:40	13:51	1:35	1:50	1:55	2:00	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
13:55	14:00	14:05	14:16	1:40	1:55	2:00	2:05	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
14:10	14:15	14:20	14:31	1:45	2:00	2:05	2:10	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
14:35	14:40	14:45	14:56	1:50	2:10	2:15	2:20	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
14:50	14:55	15:00	15:11	1:55	2:15	2:20	2:25	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
15:05	15:10	15:15	15:26	2:00	2:20	2:25	2:30	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
15:20	15:25	15:30	15:41	2:05	2:25	2:30	2:35	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
15:45	15:50	15:55	16:06	2:10	2:30	2:35	2:40	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
16:00	16:05	16:10	16:21	2:15	2:35	2:40	2:45	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
16:15	16:20	16:25	16:36	2:20	2:40	2:45	2:50	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
16:30	16:35	16:40	16:51	2:25	2:45	2:50	2:55	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
16:45	16:50	16:55	17:06	2:30	2:50	2:55	3:00	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
17:00	17:05	17:10	17:21	2:35	2:55	3:00	3:05	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
17:15	17:20	17:25	17:36	2:40	3:00	3:05	3:10	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
17:30	17:35	17:40	17:51	2:45	3:05	3:10	3:15	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
17:45	17:50	17:55	18:06	2:50	3:10	3:15	3:20	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
18:00	18:05	18:10	18:21	2:55	3:15	3:20	3:25	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
18:15	18:20	18:25	18:36	3:00	3:20	3:25	3:30	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
18:30	18:35	18:40	18:51	3:05	3:25	3:30	3:35	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
18:45	18:50	18:55	19:06	3:10	3:30	3:35	3:40	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
19:00	19:05	19:10	19:21	3:15	3:35	3:40	3:45	8:00	10:00	10:03	10:18	10:10	10:24	10:29	10:33
19:15	19:20	19:25	19:36	3:20	3:40	3:45	3:50	8:00	10:00	10:03	10:18	10:10	10:24	10:29	

Bus Route 87 - Weekday						
Inbound				Outbound		
05:10 (87.0)(B120) [36] {FA17}	On	0		05:30 (87.0)(B120) [36] {FA17}	On	0.6
	Off	9.4			Off	0
	Load	0			Load	0.6
05:32 (87.0)(B068) [38] {FA17}	On	0		06:00 (87.2)(B068) [42] {FA17}	On	2.9
	Off	3.7			Off	0
	Load	0			Load	2.9
05:54 (87.0)(B120) [36] {FA17}	On	0		06:23 (87.2)(B144) [55] {FA17}	On	5.2
	Off	6.8			Off	0
	Load	0			Load	5.2
06:16 (87.0)(B145) [16] {FA17}	On	0		06:50 (87.2)(B068) [45] {FA17}	On	5.1
	Off	7.1			Off	0
	Load	0			Load	5.4
06:26 (87.2)(B096) [2] {FA17}	On	0		07:06 (87.2)(B148) [14] {FA17}	On	4.6
	Off	12			Off	0
	Load	0			Load	4.6
06:52 (87.2)(B144) [55] {FA17}	On	0		07:35 (87.2)(B144) [55] {FA17}	On	7.9
	Off	28.8			Off	0
	Load	0.1			Load	8
07:16 (87.2)(B146) [16] {FA17}	On	0		08:05 (87.2)(B146) [18] {FA17}	On	7.3
	Off	43.6			Off	0
	Load	0.2			Load	7.4
07:36 (87.2)(B148) [13] {FA17}	On	0		08:30 (87.2)(B148) [13] {FA17}	On	7.6
	Off	42.8			Off	0
	Load	0			Load	7.6
07:58 (87.2)(B098) [18] {FA17}	On	0		08:47 (87.2)(B145) [20] {FA17}	On	6.7
	Off	39.7			Off	0
	Load	0			Load	7
08:20 (87.2)(B144) [55] {FA17}	On	0		09:11 (87.2)(B144) [55] {FA17}	On	5.4
	Off	36.7			Off	0
	Load	0.1			Load	5.5
08:47 (87.2)(B146) [18] {FA17}	On	0		09:40 (87.2)(B156) [35] {FA17}	On	4.9
	Off	28			Off	0
	Load	0.1			Load	5.1
09:07 (87.2)(B148) [13] {FA17}	On	0		10:10 (87.2)(B145) [20] {FA17}	On	6.6
	Off	18.2			Off	0
	Load	0.1			Load	6.6
09:27 (87.2)(B145) [20] {FA17}	On	0		10:40 (87.2)(B044) [21] {FA17}	On	7
	Off	17.8			Off	0
	Load	0.1			Load	7
09:47 (87.2)(B044) [21] {FA17}	On	0		11:10 (87.2)(B156) [34] {FA17}	On	7
	Off	13.1			Off	0
	Load	0			Load	7
10:15 (87.2)(B156) [35] {FA17}	On	0		11:40 (87.2)(B150) [15] {FA17}	On	7.3
	Off	12.8			Off	0
	Load	0			Load	7.3

Bus Route 87 - Weekday					
Inbound			Outbound		
10:45 (87.2)(B072) [16] {FA17}	On	0	12:10 (87.2)(B152) [29] {FA17}	On	11
	Off	13.1		Off	0
	Load	0		Load	11
11:15 (87.2)(B044) [22] {FA17}	On	0	12:40 (87.2)(B149) [26] {FA17}	On	12.5
	Off	13.8		Off	0
	Load	0		Load	12.5
11:45 (87.2)(B135) [6] {FA17}	On	0	13:10 (87.2)(B151) [15] {FA17}	On	7.7
	Off	15.5		Off	0
	Load	0		Load	7.7
12:15 (87.2)(B150) [17] {FA17}	On	0	13:40 (87.2)(B152) [31] {FA17}	On	11.7
	Off	12.9		Off	0
	Load	0.4		Load	11.7
12:50 (87.2)(B152) [32] {FA17}	On	0	14:10 (87.2)(B149) [30] {FA17}	On	15
	Off	13		Off	0
	Load	0.1		Load	15
13:20 (87.2)(B149) [29] {FA17}	On	0	14:35 (87.2)(B151) [39] {FA17}	On	12.1
	Off	13.9		Off	0
	Load	0		Load	12.2
13:50 (87.2)(B151) [40] {FA17}	On	0	15:00 (87.2)(B152) [31] {FA17}	On	12.2
	Off	10.4		Off	0
	Load	0.1		Load	12.2
14:15 (87.2)(B152) [31] {FA17}	On	0	15:20 (87.2)(B147) [7] {FA17}	On	12.1
	Off	11.1		Off	0
	Load	0.1		Load	12.4
14:40 (87.2)(B147) [6] {FA17}	On	0	15:40 (87.2)(B149) [41] {FA17}	On	14.4
	Off	11.5		Off	0
	Load	0.3		Load	14.4
15:00 (87.2)(B149) [42] {FA17}	On	0	16:00 (87.2)(B151) [40] {FA17}	On	16
	Off	14		Off	0
	Load	0		Load	16.1
15:20 (87.2)(B151) [40] {FA17}	On	0	16:20 (87.2)(B152) [30] {FA17}	On	24.3
	Off	10.7		Off	0
	Load	0.1		Load	24.3
15:40 (87.2)(B152) [31] {FA17}	On	0	16:40 (87.2)(B147) [9] {FA17}	On	28.1
	Off	12.2		Off	0
	Load	0		Load	28.1
16:00 (87.2)(B147) [7] {FA17}	On	0	17:00 (87.2)(B149) [37] {FA17}	On	28.4
	Off	13.3		Off	0
	Load	0		Load	28.4
16:20 (87.2)(B149) [41] {FA17}	On	0	17:20 (87.2)(B151) [39] {FA17}	On	32.9
	Off	14.8		Off	0
	Load	0		Load	33.1
16:40 (87.2)(B151) [39] {FA17}	On	0	17:40 (87.2)(B059) [2] {FA17}	On	50.5
	Off	16.2		Off	0
	Load	0.2		Load	50.5

Bus Route 87 - Weekday					
Inbound			Outbound		
17:00 (87.2)(B059) [3] {FA17}	On	0	18:05 (87.2)(B147) [8] {FA17}	On	42.6
	Off	15.3		Off	0
	Load	0		Load	43.1
17:25 (87.2)(B147) [9] {FA17}	On	0	18:25 (87.2)(B149) [39] {FA17}	On	28.1
	Off	16.8		Off	0
	Load	0.4		Load	28.3
17:45 (87.2)(B149) [39] {FA17}	On	0	18:45 (87.2)(B151) [41] {FA17}	On	20.1
	Off	9.2		Off	0
	Load	0.2		Load	21
18:05 (87.2)(B151) [41] {FA17}	On	0	19:05 (87.2)(B059) [4] {FA17}	On	17.5
	Off	6.9		Off	0
	Load	0.4		Load	17.5
18:27 (87.2)(B094) [11] {FA17}	On	0	19:25 (87.2)(B095) [10] {FA17}	On	17
	Off	5.6		Off	0
	Load	0		Load	17.2
18:46 (87.2)(B095) [9] {FA17}	On	0	19:50 (87.0)(B149) [39] {FA17}	On	16.3
	Off	6.3		Off	0
	Load	0.2		Load	16.3
19:11 (87.2)(B149) [39] {FA17}	On	0	20:20 (87.0)(B026) [44] {FA17}	On	15.1
	Off	5.3		Off	0
	Load	0.1		Load	15.3
19:44 (87.2)(B059) [4] {FA17}	On	0	20:55 (87.0)(B149) [40] {FA17}	On	11.6
	Off	4.5		Off	0
	Load	0		Load	11.6
20:01 (87.2)(B095) [12] {FA17}	On	0	21:30 (87.0)(B026) [44] {FA17}	On	13.7
	Off	4.4		Off	0
	Load	0.1		Load	13.7
20:25 (87.0)(B149) [40] {FA17}	On	0	22:05 (87.0)(B153) [37] {FA17}	On	6.6
	Off	3.5		Off	0
	Load	0.7		Load	6.6
20:55 (87.0)(B026) [45] {FA17}	On	0	22:45 (87.0)(B154) [11] {FA17}	On	7
	Off	5.9		Off	0
	Load	0.3		Load	7
21:25 (87.0)(B149) [39] {FA17}	On	0	23:20 (87.0)(B153) [42] {FA17}	On	7.2
	Off	4.7		Off	0
	Load	0.3		Load	7.2
21:55 (87.0)(B026) [44] {FA17}	On	0	23:50 (87.0)(B154) [14] {FA17}	On	7.5
	Off	4.7		Off	0
	Load	0		Load	7.6
22:35 (87.0)(B153) [42] {FA17}	On	0	24:25 (87.0)(B153) [42] {FA17}	On	5.8
	Off	5.2		Off	0
	Load	0		Load	5.8
23:10 (87.0)(B154) [12] {FA17}	On	0	25:05 (87.0)(B153) [34] {FA17}	On	2.9
	Off	4		Off	0
	Load	0		Load	2.9

Bus Route 87 - Weekday					
Inbound				Outbound	
23:45 (87.0)(B153) [42] {FA17}	On	0	Total	On	594
	Off	2.4		Off	0
	Load	0.1		Load	597.9
24:15 (87.0)(B154) [14] {FA17}	On	0			
	Off	0.6			
	Load	0			
24:45 (87.0)(B153) [42] {FA17}	On	0			
	Off	2			
	Load	0			
Total	On	0			
	Off	0.6			
	Load	0			

Bus Route 87 - Saturday					
Inbound			Outbound		
05:15 (87.0)(B068) [2] {FA17}	On	0	05:38 (87.2)(B068) [2] {FA17}	On	2.5
	Off	6		Off	0
	Load	0		Load	2.5
05:45 (87.0)(B033) [16] {FA17}	On	0	06:08 (87.2)(B033) [16] {FA17}	On	3.7
	Off	3		Off	0
	Load	0		Load	3.7
06:10 (87.2)(B068) [2] {FA17}	On	0	06:38 (87.2)(B068) [2] {FA17}	On	2.5
	Off	2.5		Off	0
	Load	0		Load	2.5
06:40 (87.2)(B033) [16] {FA17}	On	0	07:08 (87.2)(B033) [16] {FA17}	On	3.6
	Off	3.9		Off	0
	Load	0.3		Load	3.9
07:10 (87.2)(B068) [2] {FA17}	On	0	07:38 (87.2)(B068) [2] {FA17}	On	10.5
	Off	7		Off	0
	Load	0		Load	10.5
07:40 (87.2)(B033) [16] {FA17}	On	0	08:08 (87.2)(B033) [16] {FA17}	On	3.7
	Off	7.5		Off	0
	Load	0.6		Load	4.3
08:10 (87.2)(B068) [2] {FA17}	On	0	08:38 (87.2)(B099) [1] {FA17}	On	1
	Off	12.5		Off	0
	Load	0		Load	1
08:40 (87.2)(B072) [1] {SP17}	On	0	09:08 (87.2)(B072) [1] {SP17}	On	0
	Off	3		Off	0
	Load	1		Load	5
09:10 (87.2)(B099) [1] {FA17}	On	0	09:38 (87.2)(B077) [6] {FA17}	On	2
	Off	9		Off	0
	Load	0		Load	2
09:40 (87.2)(B084) [1] {SP16}	On	0	10:07 (87.2)(B079) [1] {SP17}	On	0
	Off	21		Off	0
	Load	0		Load	16
10:15 (87.2)(B077) [13] {FA17}	On	0	10:30 (87.2)(B079) [2] {FA17}	On	5
	Off	8.8		Off	0
	Load	0.2		Load	5
10:45 (87.2)(B078) [1] {FA17}	On	0	10:55 (87.2)(B077) [13] {FA17}	On	4.6
	Off	22		Off	0
	Load	0		Load	4.8
11:10 (87.2)(B079) [5] {FA17}	On	0	11:25 (87.2)(B078) [1] {FA17}	On	8
	Off	13.4		Off	0
	Load	0		Load	8
11:35 (87.2)(B077) [13] {FA17}	On	0	11:55 (87.2)(B079) [5] {FA17}	On	9.2
	Off	23.2		Off	0
	Load	0.3		Load	9.2
12:05 (87.2)(B078) [1] {FA17}	On	0	12:25 (87.2)(B080) [6] {FA17}	On	9.2
	Off	18		Off	0
	Load	0		Load	9.2
	On	0		On	6.7

Bus Route 87 - Saturday					
Inbound			Outbound		
12:35 (87.2)(B079) [5] {FA17}	Off	28.4	12:55 (87.2)(B081) [3] {FA17}	Off	0
	Load	0		Load	6.7
13:05 (87.2)(B080) [7] {FA17}	On	0	13:25 (87.2)(B082) [1] {FA17}	On	0
	Off	21		Off	0
13:35 (87.2)(B081) [6] {FA17}	Load	0.1	13:55 (87.2)(B080) [7] {FA17}	Load	0
	On	0		On	13.6
14:05 (87.2)(B082) [2] {FA17}	Off	18	14:25 (87.2)(B081) [6] {FA17}	Off	0
	Load	0		Load	13.7
14:35 (87.2)(B080) [6] {FA17}	On	0	14:55 (87.2)(B082) [2] {FA17}	On	17.7
	Off	22.5		Off	0
15:05 (87.2)(B081) [6] {FA17}	Load	0	15:25 (87.2)(B080) [6] {FA17}	Load	17.7
	On	0		On	11
15:35 (87.2)(B082) [2] {FA17}	Off	21	15:55 (87.2)(B084) [1] {SP17}	Off	0
	Load	0		Load	31
16:05 (87.2)(B080) [7] {FA17}	On	0	16:25 (87.2)(B070) [1] {FA17}	On	13
	Off	15.3		Off	0
16:35 (87.2)(B084) [1] {SP17}	Load	0	16:55 (87.2)(B071) [2] {FA17}	Load	13
	On	0		On	6.5
17:05 (87.2)(B070) [1] {FA17}	Off	9	17:25 (87.2)(B072) [8] {FA17}	Off	0
	Load	0		Load	7.9
17:35 (87.2)(B071) [6] {FA17}	On	0	17:50 (87.2)(B005) [1] {SP17}	On	0
	Off	9.3		Off	1
18:15 (87.2)(B043) [3] {FA17}	Load	0	18:15 (87.2)(B071) [6] {FA17}	Load	13
	On	0		On	12.5
18:55 (87.2)(B071) [6] {FA17}	Off	6	18:50 (87.2)(B072) [16] {FA17}	Off	0
	Load	0		Load	12.5
19:30 (87.2)(B072) [16] {FA17}	On	0	19:30 (87.2)(B071) [5] {FA17}	On	14.6
	Off	6.5		Off	0
20:00 (87.2)(B071) [6] {FA17}	Load	0	20:10 (87.0)(B074) [1] {FA17}	Load	14.7
	On	0		On	18
20:40 (87.0)(B074) [2] {FA17}	Off	8.8	20:50 (87.0)(B073) [1] {FA17}	Off	0
	Load	0		On	5
	On	0		Off	0
	Off	4.5		Load	5
	Load	0.3		On	10
	On	0		Off	0
	Off	1.5			

Bus Route 87 - Saturday				
Inbound			Outbound	
	Load	0		Load 12
21:20 (87.0)(B073) [1] {FA17}	On	0	21:30 (87.0)(B089) [4] {SP17}	On 0.3
	Off	8		Off 0.8
	Load	0		Load 14.8
22:00 (87.0)(B075) [1] {FA17}	On	0	22:10 (87.0)(B089) [1] {FA16}	On 10
	Off	4		Off 0
	Load	0		Load 10
22:40 (87.0)(B076) [2] {FA17}	On	0	22:50 (87.0)(B087) [6] {FA17}	On 11
	Off	6.5		Off 0
	Load	0		Load 11
23:20 (87.0)(B087) [6] {FA17}	On	0	23:30 (87.0)(B075) [1] {FA17}	On 9
	Off	8.2		Off 0
	Load	0		Load 9
24:00 (87.0)(B075) [1] {FA17}	On	0	24:10 (87.0)(B076) [2] {FA17}	On 8.5
	Off	3		Off 0
	Load	0		Load 8.5
24:40 (87.0)(B076) [2] {FA17}	On	0	25:00 (87.0)(B076) [1] {FA17}	On 3
	Off	5		Off 0
	Load	0		Load 3
Total	On	0	Total	On 2.5
	Off	2.5		Off 0
	Load	0		Load 0

schedule change

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Effective September 2, 2018

**Clarendon Hill-
Lechmere Station**

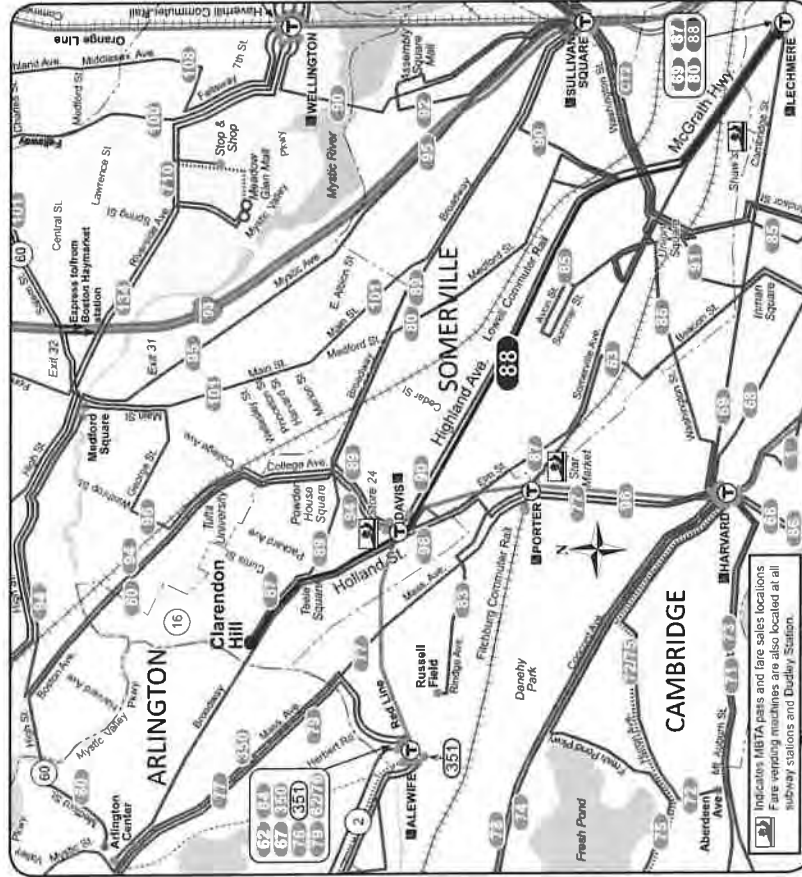
Serving

- Teele Square
- Davis Station
- Somerville City Hospital
- Somerville High School
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- Green Line
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Route 88 Clarendon Hill - Lechmere Station



Bus Route 88 - Weekday					
Inbound			Outbound		
05:16 (88.0)(B144) [52] {FA17}	On	0	05:35 (88.0)(B144) [53] {FA17}	On	1.1
	Off	9.7		Off	0
	Load	0		Load	1.1
05:41 (88.0)(B155) [45] {FA17}	On	0	06:05 (88.0)(B155) [46] {FA17}	On	1.5
	Off	7.5		Off	0
	Load	0		Load	1.5
06:02 (88.0)(B144) [55] {FA17}	On	0	06:35 (88.0)(B145) [19] {FA17}	On	2.4
	Off	11.4		Off	0
	Load	0		Load	2.4
06:28 (88.0)(B155) [46] {FA17}	On	0	06:57 (88.0)(B155) [46] {FA17}	On	6.1
	Off	18.7		Off	0
	Load	0.1		Load	6.2
06:50 (88.0)(B156) [32] {FA17}	On	0	07:19 (88.0)(B156) [35] {FA17}	On	6.8
	Off	23.9		Off	0
	Load	0.4		Load	7.1
07:06 (88.0)(B145) [20] {FA17}	On	0	07:40 (88.0)(B145) [21] {FA17}	On	4.3
	Off	33.8		Off	0
	Load	0.5		Load	5
07:17 (88.3)(B158) [2] {FA17}	On	.	07:58 (88.0)(B155) [42] {FA17}	On	6.2
	Off	.		Off	0
	Load	.		Load	6.7
07:22 (88.0)(B155) [44] {FA17}	On	0	08:14 (88.0)(B118) [21] {FA17}	On	5.9
	Off	43.7		Off	0
	Load	0.8		Load	6.8
07:38 (88.0)(B118) [14] {FA17}	On	0	08:30 (88.0)(B156) [34] {FA17}	On	5.8
	Off	42.6		Off	0
	Load	1.1		Load	6.3
07:40 (88.3)(B158) [2] {FA17}	On	.	08:46 (88.0)(B022) [6] {FA17}	On	6.7
	Off	.		Off	0
	Load	.		Load	6.7
07:54 (88.0)(B156) [36] {FA17}	On	0	09:10 (88.0)(B079) [44] {FA17}	On	5.1
	Off	48.4		Off	0
	Load	0.4		Load	5.1
08:00 (88.3)(B158) [1] {FA17}	On	.	09:35 (88.0)(B152) [30] {FA17}	On	6
	Off	.		Off	0
	Load	.		Load	6
08:10 (88.0)(B145) [20] {FA17}	On	0	10:00 (88.0)(B157) [16] {FA17}	On	4.3
	Off	45.2		Off	0
	Load	0.4		Load	4.3
08:20 (88.3)(B158) [2] {FA17}	On	.	10:25 (88.0)(B079) [45] {FA17}	On	5.6
	Off	.		Off	0
	Load	.		Load	5.6
08:28 (88.0)(B155) [43] {FA17}	On	0	10:50 (88.0)(B152) [30] {FA17}	On	6.1
	Off	35.6		Off	0
	Load	0		Load	6.1

Bus Route 88 - Weekday					
Inbound			Outbound		
08:40 (88.3)(B158) [2] {FA17}	On		11:15 (88.0)(B157) [16] {FA17}	On	6.8
	Off			Off	0
	Load			Load	6.9
08:46 (88.0)(B118) [20] {FA17}	On	0	11:35 (88.0)(B072) [16] {FA17}	On	7.4
	Off	25.4		Off	0
	Load	0		Load	7.4
09:03 (88.0)(B156) [34] {FA17}	On	0	12:00 (88.0)(B044) [22] {FA17}	On	10.2
	Off	17.8		Off	0
	Load	0.2		Load	10.2
09:25 (88.0)(B157) [15] {FA17}	On	0	12:25 (88.0)(B157) [22] {FA17}	On	10.5
	Off	20.4		Off	0
	Load	0.1		Load	10.5
09:50 (88.0)(B079) [44] {FA17}	On	0	12:50 (88.0)(B150) [17] {FA17}	On	10.7
	Off	17.9		Off	0
	Load	0		Load	11.1
10:15 (88.0)(B152) [30] {FA17}	On	0	13:10 (88.0)(B044) [22] {FA17}	On	7
	Off	13.6		Off	0
	Load	0		Load	7
10:40 (88.0)(B157) [16] {FA17}	On	0	13:30 (88.0)(B157) [22] {FA17}	On	15
	Off	12.8		Off	0
	Load	0.1		Load	15
11:05 (88.0)(B150) [3] {FA17}	On	0	13:50 (88.0)(B086) [39] {FA17}	On	10.1
	Off	10.7		Off	0
	Load	0		Load	10.1
11:30 (88.0)(B152) [30] {FA17}	On	0	14:10 (88.0)(B166) [22] {FA17}	On	10
	Off	10		Off	0
	Load	0		Load	10.7
11:50 (88.0)(B157) [22] {FA17}	On	0	14:30 (88.0)(B071) [12] {FA17}	On	10.1
	Off	8.8		Off	0
	Load	0		Load	10.4
12:10 (88.0)(B100) [60] {FA17}	On	0	14:35 (88.1)(B143) [8] {FA17}	On	
	Off	12.2		Off	
	Load	0.1		Load	
12:30 (88.0)(B044) [22] {FA17}	On	0	14:40 (88.1)(B161) [3] {FA17}	On	
	Off	9.3		Off	
	Load	0		Load	
12:55 (88.0)(B157) [22] {FA17}	On	0	14:50 (88.0)(B097) [37] {FA17}	On	14.6
	Off	10.7		Off	0
	Load	0		Load	14.6
13:10 (88.0)(B086) [5] {FA17}	On	0	14:50 (88.1)(B061) [5] {FA17}	On	
	Off	6.4		Off	
	Load	0		Load	
13:30 (88.0)(B166) [8] {FA17}	On	0	15:10 (88.0)(B159) [19] {FA17}	On	10.9
	Off	4.8		Off	0
	Load	1.3		Load	11

Bus Route 88 - Weekday					
Inbound			Outbound		
13:50 (88.0)(B071) [5] {FA17}	On	0	15:30 (88.0)(B163) [26] {FA17}	On	15.1
	Off	10		Off	0
	Load	0.6		Load	15.2
14:10 (88.0)(B029) [10] {FA17}	On	0	15:50 (88.0)(B161) [14] {FA17}	On	13.2
	Off	7.4		Off	0
	Load	0		Load	13.2
14:30 (88.0)(B177) [17] {FA17}	On	0	16:10 (88.0)(B097) [36] {FA17}	On	23.2
	Off	10.6		Off	0
	Load	1.1		Load	23.3
14:50 (88.0)(B163) [7] {FA17}	On	0	16:30 (88.0)(B159) [20] {FA17}	On	30.3
	Off	9.6		Off	0
	Load	0		Load	30.4
15:10 (88.0)(B161) [12] {FA17}	On	0	16:55 (88.0)(B163) [26] {FA17}	On	32.9
	Off	8.7		Off	0
	Load	0		Load	32.9
15:30 (88.0)(B097) [37] {FA17}	On	0	17:15 (88.0)(B161) [11] {FA17}	On	42.8
	Off	10.9		Off	0
	Load	0.1		Load	42.8
15:50 (88.0)(B159) [21] {FA17}	On	0	17:30 (88.0)(B162) [24] {FA17}	On	34.4
	Off	8.1		Off	0
	Load	0.1		Load	34.5
16:10 (88.0)(B163) [26] {FA17}	On	0	17:50 (88.0)(B159) [19] {FA17}	On	53.3
	Off	10.1		Off	0
	Load	0		Load	53.3
16:30 (88.0)(B161) [14] {FA17}	On	0	18:10 (88.0)(B160) [5] {FA17}	On	49.8
	Off	7.3		Off	0
	Load	0		Load	49.8
16:50 (88.0)(B162) [17] {FA17}	On	0	18:35 (88.0)(B161) [14] {FA17}	On	30.8
	Off	10.6		Off	0
	Load	0		Load	30.8
17:15 (88.0)(B159) [21] {FA17}	On	0	18:55 (88.0)(B162) [23] {FA17}	On	30.7
	Off	9		Off	0
	Load	0		Load	30.7
17:35 (88.0)(B160) [5] {FA17}	On	0	19:15 (88.0)(B026) [46] {FA17}	On	24
	Off	6		Off	0
	Load	0		Load	24
17:55 (88.0)(B161) [14] {FA17}	On	0	19:35 (88.0)(B160) [6] {FA17}	On	18.2
	Off	7.4		Off	0
	Load	0		Load	18.2
18:10 (88.0)(B162) [24] {FA17}	On	0	20:00 (88.0)(B162) [23] {FA17}	On	19.4
	Off	7.5		Off	0
	Load	0		Load	19.6
18:25 (88.0)(B159) [20] {FA17}	On	0	20:35 (88.0)(B095) [11] {FA17}	On	19.5
	Off	5.3		Off	0
	Load	0.5		Load	19.5

Bus Route 88 - Weekday					
Inbound			Outbound		
18:50 (88.0)(B160) [6] {FA17}	On	0	21:05 (88.0)(B162) [23] {FA17}	On	14.7
	Off	7.3		Off	0
	Load	0		Load	14.8
19:10 (88.0)(B161) [14] {FA17}	On	0	21:35 (88.0)(B095) [13] {FA17}	On	7.8
	Off	4.4		Off	0
	Load	0		Load	7.8
19:30 (88.0)(B162) [25] {FA17}	On	0	22:00 (88.0)(B176) [9] {FA17}	On	18.3
	Off	3.4		Off	0
	Load	0.2		Load	18.3
19:50 (88.0)(B026) [44] {FA17}	On	0	22:30 (88.0)(B164) [3] {FA17}	On	15
	Off	3.8		Off	0
	Load	0.2		Load	15
20:10 (88.0)(B160) [5] {FA17}	On	0	23:00 (88.0)(B165) [11] {FA17}	On	5.3
	Off	2		Off	0
	Load	0		Load	5.4
20:35 (88.0)(B162) [24] {FA17}	On	0	23:30 (88.0)(B164) [25] {FA17}	On	13.7
	Off	2.3		Off	0
	Load	0		Load	13.7
21:05 (88.0)(B095) [13] {FA17}	On	0	24:00 (88.0)(B165) [20] {FA17}	On	6.7
	Off	3.8		Off	0
	Load	0		Load	6.7
21:35 (88.0)(B176) [8] {FA17}	On	0	24:30 (88.0)(B164) [17] {FA17}	On	5.6
	Off	2.5		Off	0
	Load	0		Load	5.8
22:05 (88.0)(B095) [12] {FA17}	On	0	25:00 (88.0)(B165) [14] {FA17}	On	3.9
	Off	3.3		Off	0
	Load	0		Load	3.9
22:35 (88.0)(B176) [9] {FA17}	On	0	Total	On	725.8
	Off	2.2		Off	0
	Load	0		Load	731.4
23:05 (88.0)(B164) [23] {FA17}	On	0			
	Off	2			
	Load	0			
23:35 (88.0)(B165) [18] {FA17}	On	0			
	Off	1.8			
	Load	0			
24:05 (88.0)(B164) [25] {FA17}	On	0			
	Off	0.9			
	Load	0.2			
24:35 (88.0)(B165) [19] {FA17}	On	0			
	Off	3.4			
	Load	0			
Total	On	0			
	Off	1.1			
	Load	0			

Bus Route 88 - Saturday					
Inbound			Outbound		
05:30 (88.0)(B042) [6] {FA17}	On	0	06:00 (88.0)(B042) [6] {FA17}	On	2.3
	Off	4.8		Off	0
	Load	0		Load	2.3
06:00 (88.0)(B097) [2] {SP17}	On	0	06:30 (88.0)(B097) [2] {SP17}	On	3
	Off	5		Off	0
	Load	0		Load	3
06:30 (88.0)(B083) [13] {FA17}	On	0	07:00 (88.0)(B083) [14] {FA17}	On	2.5
	Off	8.1		Off	0
	Load	0		Load	2.5
07:00 (88.0)(B019) [1] {FA17}	On	0	07:30 (88.0)(B019) [1] {FA17}	On	6
	Off	6		Off	0
	Load	0		Load	6
07:30 (88.0)(B083) [14] {FA17}	On	0	08:00 (88.0)(B083) [14] {FA17}	On	5.2
	Off	8.7		Off	0
	Load	0		Load	5.2
08:00 (88.0)(B019) [1] {FA17}	On	0	08:30 (88.0)(B025) [3] {FA17}	On	5.7
	Off	14		Off	0
	Load	0		Load	5.7
08:30 (88.0)(B083) [14] {FA17}	On	0	09:00 (88.0)(B083) [14] {FA17}	On	6.1
	Off	10.5		Off	0
	Load	0		Load	6.1
09:00 (88.0)(B025) [3] {FA17}	On	0	09:30 (88.0)(B025) [3] {FA17}	On	6
	Off	11.7		Off	0
	Load	0		Load	6
09:30 (88.0)(B029) [8] {FA17}	On	0	10:00 (88.0)(B029) [8] {FA17}	On	4.9
	Off	17.3		Off	0
	Load	0.8		Load	5.6
10:00 (88.0)(B084) [8] {FA17}	On	0	10:30 (88.0)(B084) [8] {FA17}	On	5.9
	Off	20.5		Off	0
	Load	0.1		Load	6
10:30 (88.0)(B029) [8] {FA17}	On	0	11:00 (88.0)(B029) [8] {FA17}	On	5.8
	Off	21.3		Off	0
	Load	0.5		Load	6.3
11:00 (88.0)(B084) [8] {FA17}	On	0	11:30 (88.0)(B084) [6] {FA17}	On	7.2
	Off	20.4		Off	0
	Load	0		Load	7.2
11:20 (88.0)(B093) [1] {SP17}	On	0	11:50 (88.0)(B088) [1] {FA17}	On	6
	Off	16		Off	0
	Load	0		Load	6
11:40 (88.0)(B102) [9] {FA16}	On	0	12:10 (88.0)(B102) [9] {FA16}	On	5.2
	Off	10.7		Off	0
	Load	0.8		Load	
12:00 (88.0)(B090) [1] {FA17}	On	0	12:30 (88.0)(B090) [5] {FA17}	On	7.6
	Off	10		Off	0
	Load	1		Load	8.4
	On	0		On	6

Bus Route 88 - Saturday					
Inbound			Outbound		
12:20 (88.0)(B088) [1] {FA17}	Off	8	12:50 (88.0)(B093) [1] {SP17}	Off	0
	Load	0		Load	8
12:40 (88.0)(B102) [11] {FA16}	On	0	13:10 (88.0)(B102) [11] {FA16}	On	10.2
	Off	12.7		Off	0
	Load	0.6		Load	10.8
13:00 (88.0)(B090) [6] {FA17}	On	0	13:30 (88.0)(B096) [2] {SP17}	On	4
	Off	9.5		Off	0
	Load	0		Load	4
13:20 (88.0)(B091) [8] {FA17}	On	0	13:50 (88.0)(B091) [8] {FA17}	On	13
	Off	13.8		Off	0
	Load	0		Load	13
13:40 (88.0)(B095) [1] {SP17}	On	0	14:10 (88.0)(B095) [1] {SP17}	On	4
	Off	6		Off	0
	Load	1		Load	5
14:00 (88.0)(B092) [3] {FA17}	On	0	14:30 (88.0)(B092) [4] {FA17}	On	5.8
	Off	17.7		Off	0
	Load	0		Load	5.8
14:20 (88.0)(B091) [8] {FA17}	On	0	14:50 (88.0)(B091) [8] {FA17}	On	16.5
	Off	12.1		Off	0
	Load	0.3		Load	16.8
14:40 (88.0)(B095) [1] {SP17}	On	0	15:10 (88.0)(B095) [1] {SP17}	On	5
	Off	7		Off	0
	Load	3		Load	8
15:00 (88.0)(B092) [4] {FA17}	On	0	15:30 (88.0)(B092) [4] {FA17}	On	9.8
	Off	14		Off	0
	Load	1		Load	10.8
15:20 (88.0)(B091) [8] {FA17}	On	0	15:50 (88.0)(B086) [1] {FA17}	On	17
	Off	17.4		Off	0
	Load	0		Load	17
15:40 (88.0)(B095) [1] {SP17}	On	0	16:10 (88.0)(B095) [1] {SP17}	On	10
	Off	4		Off	0
	Load	0		Load	10
16:00 (88.0)(B092) [4] {FA17}	On	0	16:30 (88.0)(B085) [2] {FA17}	On	12
	Off	10.8		Off	0
	Load	0		Load	12
16:20 (88.0)(B086) [8] {FA17}	On	0	16:50 (88.0)(B086) [8] {FA17}	On	18.6
	Off	10.8		Off	0
	Load	1		Load	19.6
16:40 (88.0)(B095) [1] {SP17}	On	0	17:10 (88.0)(B057) [7] {FA17}	On	21.4
	Off	4		Off	0
	Load	0		Load	21.4
17:00 (88.0)(B085) [6] {FA17}	On	0	17:30 (88.0)(B085) [6] {FA17}	On	17.7
	Off	11.5		Off	0
	Load	0.3		Load	18
17:20 (88.0)(B086) [8] {FA17}	On	0	17:50 (88.0)(B086) [8] {FA17}	On	11.3
	Off	9.6		Off	0

Bus Route 88 - Saturday				
Inbound			Outbound	
	Load	0		Load 11.3
17:40 (88.0)(B057) [7] {FA17}	On	0	18:10 (88.0)(B057) [6] {FA17}	On 17.2
	Off	8.1		Off 0
	Load	1.4		Load 18
18:00 (88.0)(B085) [6] {FA17}	On	0	18:30 (88.0)(B005) [11] {FA17}	On 15.7
	Off	15.7		Off 0
	Load	0		Load 15.7
18:20 (88.0)(B086) [8] {FA17}	On	0	18:50 (88.0)(B086) [8] {FA17}	On 14.1
	Off	8.3		Off 0
	Load	0.1		Load 14.3
18:40 (88.0)(B057) [6] {FA17}	On	0	19:30 (88.0)(B005) [10] {FA17}	On 25
	Off	10.3		Off 0
	Load	0		Load 26
19:00 (88.0)(B005) [10] {FA17}	On	0	19:50 (88.0)(B098) [2] {FA16}	On 10
	Off	9.4		Off 0
	Load	1		Load 10
19:20 (88.0)(B086) [8] {FA17}	On	0	20:30 (88.0)(B071) [6] {FA17}	On 15
	Off	6.9		Off 0
	Load	0		Load 15
20:00 (88.0)(B005) [10] {FA17}	On	0	21:10 (88.0)(B074) [2] {FA17}	On 16
	Off	6.3		Off 0
	Load	0		Load 16
20:20 (88.0)(B098) [2] {FA16}	On	0	21:50 (88.0)(B087) [3] {FA17}	On 12.3
	Off	5		Off 0
	Load	0		Load 12.3
21:00 (88.0)(B071) [7] {FA17}	On	0	22:30 (88.0)(B075) [1] {FA17}	On 6
	Off	3.3		Off 0
	Load	0.1		Load 6
21:40 (88.0)(B074) [2] {FA17}	On	0	23:10 (88.0)(B076) [2] {FA17}	On 8
	Off	6		Off 0
	Load	0		Load 8
22:20 (88.0)(B087) [6] {FA17}	On	0	23:50 (88.0)(B087) [6] {FA17}	On 16.5
	Off	7		Off 0
	Load	0		Load 16.5
23:00 (88.0)(B075) [1] {FA17}	On	0	24:30 (88.0)(B075) [1] {FA17}	On 5
	Off	6		Off 0
	Load	0		Load 5
23:40 (88.0)(B076) [2] {FA17}	On	0	25:00 (88.0)(B087) [2] {FA17}	On 1
	Off	2.5		Off 0
	Load	0		Load 1
24:20 (88.0)(B087) [5] {FA17}	On	0	Total	On 2.3
	Off	0.4		Off 0
	Load	0		Load 0
Total	On	0		
	Off	2.3		
	Load	0		

MODE SPLIT DATA

CAMBRIDGESIDE GALLERIA
2017 TDM Monitoring and Reporting Survey

I. Modes of arrival and departure of all on-site employees.

	<u>2017</u>		<u>2016</u>		<u>2015</u>	
	% of Mall Employees		% of Mall Employees		% of Mall Employees	
	<u>TOTAL</u>		<u>TOTAL</u>		<u>TOTAL</u>	
Total mall employees surveyed:	1,272		1,339		1,514	
Drove Alone	334	26%	355	28%	403	30%
Biked	16	1%	12	1%	13	1%
Walked	59	5%	60	5%	57	4%
Transit	810	64%	871	68%	993	74%
Carpool/Vanpool: Taxi, Uber	50	4%	22	2%	39	3%
Other:	3	0%	19	1%	9	1%

II. Times of arrival and departure of all on-site employees.

	<u>2017</u>		<u>2016</u>		<u>2015</u>	
	% of Mall Employees		% of Mall Employees		% of Mall Employees	
	<u>TOTAL</u>		<u>TOTAL</u>		<u>TOTAL</u>	
On an average day:						
Employees arriving between 7am and 9am:	327	26%	340	25%	379	25%
Employees arriving between 9am and 3pm:	659	52%	677	51%	787	52%
Employees arriving between 3pm and 6pm:	286	22%	322	24%	348	23%
	<u>1,272</u>		<u>1,339</u>		<u>1,514</u>	
Employees departing between 12pm and 3pm:	128	10%	161	12%	197	13%
Employees departing between 3pm and 6pm:	276	22%	290	22%	333	22%
Employees departing after 6pm:	868	68%	888	66%	984	65%
	<u>1,272</u>		<u>1,339</u>		<u>1,514</u>	

III. Home locations of employees:

Employee Residence and Zip Code Survey attached, Exhibits A-1 and A-2.

IV. Preferences for ridesharing of employees:

Of all employees surveyed, 4% listed carpool as their preferred mode of transportation.

V. Modes of arrival and departure for customers:

	2017		2016		2015	
Total # of customers surveyed:	708		805		820	
Drove Alone	165	23%	193	24%	250	30%
Biked	19	3%	17	2%	41	5%
Walked	97	14%	82	10%	104	13%
Transit	382	54%	494	61%	370	45%
Carpool/Vanpool: Taxi, Uber	45	6%	9	1%	49	6%
Other:	0	0%	10	1%	6	1%

VI. Home Zip Codes of Customers:

Customer Zip Code Survey attached, Exhibit B.

VII. Scope of Customer Trip:

	2017		2016		2015	
Total # of customers surveyed:	708		805		820	
Primary Trip:	642	91%	430	53%	791	96%
Part of Trip Chain:	66	9%	362	45%	28	3%

VIII. Driveway counts for peak hour and daily volumes:

Entry/Exit Report attached, Exhibit C.

IX. Parking utilization, including distribution of spaces among user groups:

Commuter Parking Program attached, Exhibit D.

X. CambridgeSide Galleria Shuttle Ridership:

Shuttle Ridership attached, Exhibit E.

XI. Hotel Marlowe Employee Survey and Home Zip Codes

Attached, Exhibit F and Exhibit G

2017 Compiled Data for One Rogers/One Charles Park - JLL - PB#65

Mode	Monday	Tuesday	Wednesday	Thursday	Friday	Total Weekly Trips	Adjustment
Walked the entire way	42	37	36	35	37	187	187
Rode personal bicycle the entire way	29	26	24	25	25	129	129
Rode Hubway bikeshare the entire way	1	2	1	2	1	7	7
→ Drove alone the entire way	295	302	292	292	235	1416	1416
→ Drove + rode rode bicycle (park & pedal)	0	0	1	0	0	1	1
Public transportation + walked	201	207	198	203	167	976	976
Public transportation + personal bicycle	2	1	1	1	1	6	6
Public transportation + Hubway bikeshare	7	6	5	7	5	30	30
Public transportation + drove/carpool/shuttle	28	31	38	32	27	156	156
→ Carpool (two- to seven-person)	23	25	23	19	20	110	110
→ Vanpool (eight-or more-person)	0	0	0	0	0	0	0
→ Took taxi/Uber/Lyft with other passengers	4	5	5	10	5	29	29
→ Took taxi/Uber/Lyft with NO passengers	7	7	4	6	4	28	28
Was dropped off at work	1	2	1	1	1	6	6
Worked at Home	43	34	52	48	133	310	310
I don't usually work this day	1	2	3	1	10	17	
Sick, vacation, business trip, personal time, jury duty	19	16	20	22	31	108	
Other (scooter, skateboard, etc.)	2	2	1	1	3	9	9
	705	705	705	705	705	3525	3400

Mode	Monday	Tuesday	Wednesday	Thursday	Friday	Adjustment
Walked the entire way	6.0%	5.2%	5.1%	5.0%	5.2%	5.5%
Rode personal bicycle the entire way	4.1%	3.7%	3.4%	3.5%	3.5%	3.8%
Rode Hubway bikeshare the entire way	0.1%	0.3%	0.1%	0.3%	0.1%	0.2%
→ Drove alone the entire way	41.8%	42.8%	41.4%	41.4%	33.3%	41.6%
→ Drove + rode rode bicycle (park & pedal)	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Public transportation + walked	28.5%	29.4%	28.1%	28.8%	23.7%	28.7%
Public transportation + personal bicycle	0.3%	0.1%	0.1%	0.1%	0.1%	0.2%
Public transportation + Hubway bikeshare	1.0%	0.9%	0.7%	1.0%	0.7%	0.9%
Public transportation + drove/carpool/shuttle	4.0%	4.4%	5.4%	4.5%	3.8%	4.6%
→ Carpool (two- to seven-person)	3.3%	3.5%	3.3%	2.7%	2.8%	3.2%
→ Vanpool (eight-or more-person)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
→ Took taxi/Uber/Lyft with other passengers	0.6%	0.7%	0.7%	1.4%	0.7%	0.9%
→ Took taxi/Uber/Lyft with NO passengers	1.0%	1.0%	0.6%	0.9%	0.6%	0.8%
Was dropped off at work	0.1%	0.3%	0.1%	0.1%	0.1%	0.2%
Worked at Home	6.1%	4.8%	7.4%	6.8%	18.9%	9.1%
I don't usually work this day	0.1%	0.3%	0.4%	0.1%	1.4%	
Sick, vacation, business trip, personal time, jury duty	2.7%	2.3%	2.8%	3.1%	4.4%	
Other (scooter, skateboard, etc.)	0.3%	0.3%	0.1%	0.1%	0.4%	0.3%
	100%	100%	100%	100%	100%	100%

If you took public transportation for all or part of your commute, which route(s) did you use?	Number of Responses	Percent of Total Responses
Left blank	0	0.0%
Red Line	188	49.1%
Green Line	87	22.7%
Orange Line	54	14.1%
Blue Line	8	2.1%
Silver Line	2	0.5%
Commuter Rail to North Station	61	15.9%
Commuter Rail to South Station	47	12.3%
Commuter Rail to Porter Square	2	0.5%
Bus Route	94	24.5%
EZRide	49	12.8%
Galleria Shuttle Bus	54	14.1%
Total	383	100.0%

If you drive to work where is the vehicle usually parked?	Number of Responses	Percent of Total Responses
Left blank	0	0.0%
Parking structure on-site	310	71.9%
Other parking structure lot	102	23.7%
On-street	19	4.4%
Total	431	

2017 Compiled Data for Two Canal Park - Intercontinental Management Corp - PB-125

Mode	Monday	Tuesday	Wednesday	Thursday	Friday	Total Weekly Trips	Adjustment
Walked the entire way	9	11	11	9	9	49	49
Rode personal bicycle the entire way	15	12	13	13	14	67	67
Rode Hubway bikeshare the entire way	2	0	3	0	3	8	8
Drove alone the entire way	91	91	91	91	80	444	444
Drove + rode bicycle (park & pedal)	2	1	2	0	1	6	6
Public transportation + walked	64	69	72	65	61	331	331
Public transportation + personal bicycle	2	3	2	4	0	11	11
Public transportation + Hubway bikeshare	2	3	1	2	1	9	9
Public transportation + drove/carpool/shuttle	14	14	13	14	11	66	66
Carpool (two- to seven-person)	6	8	8	7	4	33	33
Vanpool (eight-or more-person)	0	0	0	0	0	0	0
Took taxi/Uber/Lyft with other passengers	1	0	0	0	0	1	1
Took taxi/Uber/Lyft with NO passengers	1	1	0	0	0	2	2
Was dropped off at work	1	0	6	0	0	7	7
Worked at Home	17	15	7	20	41	100	100
I don't usually work this day	4	0	3	0	0	7	
Sick, vacation, business trip, personal time, jury duty	2	5	1	8	8	24	
Other (scooter, skateboard, etc.)	0	0	0	0	0	0	0
	233	233	233	233	233	1165	1134

Mode	Monday	Tuesday	Wednesday	Thursday	Friday	Adjustment
Walked the entire way	3.9%	4.7%	4.7%	3.9%	3.9%	4.3%
Rode personal bicycle the entire way	6.4%	5.2%	5.6%	5.6%	6.0%	5.9%
Rode Hubway bikeshare the entire way	0.9%	0.0%	1.3%	0.0%	1.3%	0.7%
Drove alone the entire way	39.1%	39.1%	39.1%	39.1%	34.3%	39.2%
Drove + rode bicycle (park & pedal)	0.9%	0.4%	0.9%	0.0%	0.4%	0.5%
Public transportation + walked	27.5%	29.6%	30.9%	27.9%	26.2%	29.2%
Public transportation + personal bicycle	0.9%	1.3%	0.9%	1.7%	0.0%	1.0%
Public transportation + Hubway bikeshare	0.9%	1.3%	0.4%	0.9%	0.4%	0.8%
Public transportation + drove/carpool/shuttle	6.0%	6.0%	5.6%	6.0%	4.7%	5.8%
Carpool (two- to seven-person)	2.6%	3.4%	3.4%	3.0%	1.7%	2.9%
Vanpool (eight-or more-person)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Took taxi/Uber/Lyft with other passengers	0.4%	0.0%	0.0%	0.0%	0.0%	0.1%
Took taxi/Uber/Lyft with NO passengers	0.4%	0.4%	0.0%	0.0%	0.0%	0.2%
Was dropped off at work	0.4%	0.0%	2.6%	0.0%	0.0%	0.6%
Worked at Home	7.3%	6.4%	3.0%	8.6%	17.6%	8.8%
I don't usually work this day	1.7%	0.0%	1.3%	0.0%	0.0%	
Sick, vacation, business trip, personal time, jury duty	0.9%	2.1%	0.4%	3.4%	3.4%	
Other (scooter, skateboard, etc.)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	100%	100%	100%	100%	100%	100%

If you took public transportation for all or part of your commute, which route(s) did you use?	Number of Responses	Percent of Total Responses
Left blank	0	0.0%
Red Line	28	22.4%
Green Line	60	48.0%
Orange Line	29	23.2%
Blue Line	4	3.2%
Silver Line	1	0.8%
Commuter Rail to North Station	37	29.6%
Commuter Rail to South Station	16	12.8%
Commuter Rail to Porter Square	0	0.0%
Bus Route	26	20.8%
EZRide	13	10.4%
Shuttle Bus	0	0.0%
Total	125	100.0%

If you drive to work where is the vehicle usually parked?	Number of Responses	Percent of Total Responses
Left blank	0	0.0%
Parking structure on-site	70	51.5%
Other parking structure lot	64	47.1%
On-street	2	1.5%
Total	136	

42.4

TRIP GENERATION DATA

Office Trip Generation Summary

Time Period/ Directional Distribution	ITE Vehicle Trips ^a		Person Trips ^b							Proposed Vehicle Trips ^d
	Office	Office Total Trips ^c	SOV (40.9%)	HOV (3.95%)	Transit (35.6%)	Pedestrian (4.9%)	Bicycle (5.55%)	Other (9.1%)		
<i>Weekday Daily:</i>										
Entering	740	784	321	31	279	38	44	71	329	
Exiting	740	784	321	31	279	38	44	71	329	
Total	1480	1568	642	62	558	76	88	142	658	
<i>Weekday Morning Peak Hour:</i>										
Entering	136	144	59	6	51	7	8	13	61	
Exiting	22	24	10	1	9	1	1	2	10	
Total	158	168	69	7	60	8	9	15	71	
<i>Weekday Evening Peak Hour:</i>										
Entering	25	27	11	1	10	1	1	3	11	
Exiting	132	140	57	6	50	7	8	12	59	
Total	157	167	68	6	60	8	9	15	70	
<i>Saturday Daily:</i>										
Entering	160	170	69	7	61	8	10	15	71	
Exiting	160	170	69	7	61	8	10	15	71	
Total	320	340	138	14	122	16	20	30	142	
<i>Saturday Midday Peak Hour:</i>										
Entering	40	42	17	2	15	2	2	4	18	
Exiting	34	36	15	1	13	2	2	3	15	
Total	74	78	32	3	28	4	4	7	33	

Average Vehicle Occupancy (United States)
 Average Vehicle Occupancy (Census Tract 3521.02)
 Single Occupancy Vehicle (SOV)
 High Occupancy Vehicle (HOV)
 Transit
 Pedestrian
 Bicycle
 Other

1.06 persons per vehicle
 1.07 persons per vehicle
 40.9 Percent
 3.95 Percent
 35.6 Percent
 4.9 Percent
 5.55 Percent
 9.1 Percent

Empirical Data - based on 2017 PTDM Reports

One Rogers - One Charles: Office						Two Canal: Office					Lechmere T Area	Proposed Office
Time Period	Vehicle Counts		Average On-Site	Total Trips	Trip Rate	Combined Garage		Average On-Site	Total Trips	Trip Rate	Trip Rate	Vehicle Trips 3rd Floor
Weekday	Oct. 24th	Oct. 25th	(A)	(B=A/719)	(C=B/351.015)	Oct. 4th	Oct. 5th	(D)	(E=D/515)	(F=E/138.489)	(G=(C+F)/2)	(H=G*140)
In	324	290	307	427	1.22	134	136	135	263	1.90	1.56	218
Out	321	294	308	429	1.23	110	121	116	226	1.64	1.44	202
Tot	645	584	615	856	2.45	244	257	251	489	3.54	3.00	420
AM												
In	92	75	84	117	0.34	37	35	36	70	0.51	0.43	60
Out	2	1	2	3	0.01	0	2	1	2	0.02	0.02	3
Tot	94	76	86	120	0.35	37	37	37	72	0.53	0.45	63
PM												
In	2	4	3	5	0.02	2	2	2	4	0.03	0.03	4
Out	76	76	76	106	0.31	24	31	28	55	0.40	0.36	50
Tot	78	80	79	111	0.33	26	33	30	59	0.43	0.39	54

One Roger-One Charles Occupied Area 351.015 KSF
Two Canal Occupied Area 138.489 KSF
Proposed 3rd Floor Office 140.000 KSF

One Rogers- One Charles on site parking 71.9 Percent
Two Canal on site parking 51.5 Percent

ITE LUC 710 Office					
Time Period	Vehicle Trips	Person Trips	Person Trips: Mode Split Adjusted	Vehicle Trips: Mode Split Adjusted	Trips Rates
Weekday	(A)	(B=A*1.06)	(C=B*4485)	(D=C/1.07)	(E=D/140)
In	740	784	352	329	2.35
Out	740	784	352	329	2.35
Tot	1480	1568	704	658	4.70
AM					
In	136	144	65	61	0.44
Out	22	23	10	9	0.07
Tot	158	167	75	70	0.51
PM					
In	25	27	12	11	0.08
Out	132	140	63	59	0.43
Tot	157	167	75	70	0.51

Mode Split (Vehicle Trips) 44.85 percent
Vehicle Occupancy (US) 1.06 persons/vehicle
Vehicle Occupancy (Census Tract 3521.02) 1.07 persons/vehicle
3rd Floor Occupied Space 140 KSF

ITE Office to Empirical Comparison									
Time Period	ITE Trips Rate	Empirical Trip Rate	ITE One Rogers - One Charles	Empirical Office	Percent Difference (ITE to Empirical)	ITE Two Canal	Empirical Two Canal	Percent Difference	Average Percent Difference
Weekday									
In	2.35	1.56	825	548		325	216		
Out	2.35	1.44	825	505		325	199		
Tot	4.70	3.00	1650	1053	-36.18	650	415	-36.15	-36.17
AM									
In	0.44	0.43	154	151		61	60		
Out	0.07	0.02	25	7		10	3		
Tot	0.51	0.45	179	158	-11.73	71	63	-11.27	-11.50
PM									
In	0.08	0.03	28	11		11	4		
Out	0.43	0.36	151	126		60	50		
Tot	0.51	0.39	179	137	-23.46	71	54	-23.94	-23.7

1/1/2018 to 9/13/2018	
Days	256
Weekdays	184
Weekend Days	72

Garage Data from Cambridge

	Entry Vehicles	
	Weekday	Weekend
All Tickets (A)	477707	163381
Tickets Between 10am-5pm (B)	424576	269521
Total Monthly Tickets (C)	43228	33544
All - Monthly Tickets (D=B-C)	381348	235977
Daily Average All Tickets (E=A/number of days)	1866	1708
Daily Average All-Monthly Tickets (F=D/number of days)	1490	1782
Ratio: Daily Average All-Monthly Tickets/Daily Average All Tickets (G=F/E)	0.798	0.751
Reduction for Duration of Stay (48 Hours)	0.052	0.067
Final Retail Adjustment Factor	0.746	0.684

Building Data from Cambridge

3rd Floor Occupied Space (A)	140 KSF
Total Occupied Space (B)	642,500 KSF
Ratio: 3rd Floor/Total (C=A/B)	21.79 Percent
3rd Floor Employees (D)	261 employees
Total Employees (E)	1272 employees
Ratio: 3rd Floor/Total (F=D/E)	20.52 Percent
Average Ratio (G=(C+H)/2)	21.16 Percent

Existing Garage Counts to Third Floor Retail Trips				
Time Period	All counted Trips		Retail Trips	
	(A)			Third Floor Vehicle Trips (C=B*0.21)
Weekday				
In	1930		1320	277
Out	1900		1300	273
Total	3830		2620	550
AM				
In	75		51	11
Out	4		3	1
Total	79		54	12
PM				
In	170		116	24
Out	158		108	23
Total	328		224	47
Saturday				
In	3793		3248.5	691
Out	3728		3232.2	679
Total	7521		6520.7	1370
Saturday Midday				
In	355		308	65
Out	218		189	40
Total	573		497	105

Percent of Retail Traffic Attributable to the 3rd Floor

Percent

21

Institute of Transportation Engineers (ITE)
Trip Generation, 10th Edition
Land Use Code (LUC) 710 - General Office Building

Average Vehicle Trips Ends vs: 1,000 Square Feet Gross Floor Area
Independent Variable (X): 140.000

AVERAGE WEEKDAY DAILY

$$\ln T = 0.97 \ln(X) + 2.50$$

$$\ln T = 0.97 \ln(140.000) + (2.50)$$

$$\ln T = 7.29$$

$$T = 1470.55$$

T = 1,472 vehicle trips
with 50% (736 vpd) entering and 50% (736 vpd) exiting.

WEEKDAY MORNING PEAK HOUR

$$T = 0.94(X) + 26.49$$

$$T = 0.94 * (140.000) + (26.49)$$

$$T = 158.09$$

T = 158 vehicle trips
with 86% (136 vph) entering and 14% (22 vph) exiting.

WEEKDAY EVENING PEAK HOUR

$$\ln T = 0.95 \ln(X) + 0.36$$

$$\ln T = 0.95 * \ln(140.000) + (0.36)$$

$$\ln T = 5.05$$

$$T = 156.74$$

T = 157 vehicle trips
with 16% (25 vph) entering and 84% (132 vph) exiting.

SATURDAY DAILY

$$T = 2.21 * (X)$$

$$T = 2.21 * 140.000$$

$$T = 309.40$$

T = 310 vehicle trips
with 50% (155 vph) entering and 50% (155 vph) exiting.

SATURDAY PEAK HOUR OF GENERATOR

$$T = 0.53 * (X)$$

$$T = 0.53 * 140.000$$

$$T = 74.20$$

T = 74 vehicle trips
with 54% (40 vph) entering and 46% (34 vph) exiting.

S0801

COMMUTING CHARACTERISTICS BY SEX
2012-2016 American Community Survey 5-Year Estimates

Tell us what you think. Provide feedback to help make American Community Survey data more useful for you.

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2015
2014
2013
2012
2011
2010
2009

Subject	United States					
	Total		Male		Female	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Workers 16 years and over	145,861,221	+/-149,643	77,251,255	+/-82,666	68,609,966	+/-74,093
MEANS OF TRANSPORTATION TO WORK						
Car, truck, or van	85.7%	+/-0.1	85.7%	+/-0.1	85.7%	+/-0.1
Drove alone	76.4%	+/-0.1	76.2%	+/-0.1	76.6%	+/-0.1
Carpooled	9.3%	+/-0.1	9.5%	+/-0.1	9.1%	+/-0.1
In 2-person carpool	7.1%	+/-0.1	7.1%	+/-0.1	7.1%	+/-0.1
In 3-person carpool	1.3%	+/-0.1	1.3%	+/-0.1	1.2%	+/-0.1
In 4-or-more person carpool	0.9%	+/-0.1	1.0%	+/-0.1	0.8%	+/-0.1
Workers per car, truck, or van	1.06	+/-0.01	1.07	+/-0.01	1.05	+/-0.01
Public transportation (excluding taxicab)	5.1%	+/-0.1	4.8%	+/-0.1	5.5%	+/-0.1
Walked	2.8%	+/-0.1	2.8%	+/-0.1	2.7%	+/-0.1
Bicycle	0.6%	+/-0.1	0.8%	+/-0.1	0.4%	+/-0.1
Taxicab, motorcycle, or other means	1.2%	+/-0.1	1.5%	+/-0.1	0.9%	+/-0.1
Worked at home	4.6%	+/-0.1	4.3%	+/-0.1	4.8%	+/-0.1
PLACE OF WORK						
Worked in state of residence	96.3%	+/-0.1	95.6%	+/-0.1	97.0%	+/-0.1
Worked in county of residence	72.4%	+/-0.1	70.0%	+/-0.1	75.1%	+/-0.1
Worked outside county of residence	23.9%	+/-0.1	25.6%	+/-0.1	21.9%	+/-0.1
Worked outside state of residence	3.7%	+/-0.1	4.4%	+/-0.1	3.0%	+/-0.1
Living in a place						
Worked in place of residence	74.9%	+/-0.1	74.5%	+/-0.1	75.4%	+/-0.1
Worked in place of residence	31.5%	+/-0.1	29.7%	+/-0.1	33.5%	+/-0.1
Worked outside place of residence	43.5%	+/-0.1	44.8%	+/-0.1	41.9%	+/-0.1
Not living in a place	25.1%	+/-0.1	25.5%	+/-0.1	24.6%	+/-0.1
Living in 12 selected states						
Worked in minor civil division of residence	7.7%	+/-0.1	7.1%	+/-0.1	8.3%	+/-0.1
Worked outside minor civil division of residence	17.4%	+/-0.1	17.5%	+/-0.1	17.4%	+/-0.1
Not living in 12 selected states	74.9%	+/-0.1	75.4%	+/-0.1	74.3%	+/-0.1
Workers 16 years and over who did not work at home	139,199,329	+/-158,248	73,898,049	+/-93,457	65,301,280	+/-72,118
TIME LEAVING HOME TO GO TO WORK						
12:00 a.m. to 4:59 a.m.	4.5%	+/-0.1	6.0%	+/-0.1	2.8%	+/-0.1
5:00 a.m. to 5:29 a.m.	3.8%	+/-0.1	5.1%	+/-0.1	2.4%	+/-0.1
5:30 a.m. to 5:59 a.m.	4.8%	+/-0.1	6.0%	+/-0.1	3.5%	+/-0.1
6:00 a.m. to 6:29 a.m.	8.8%	+/-0.1	10.4%	+/-0.1	6.9%	+/-0.1
6:30 a.m. to 6:59 a.m.	9.8%	+/-0.1	10.3%	+/-0.1	9.3%	+/-0.1
7:00 a.m. to 7:29 a.m.	14.7%	+/-0.1	14.1%	+/-0.1	15.5%	+/-0.1
7:30 a.m. to 7:59 a.m.	12.6%	+/-0.1	10.7%	+/-0.1	14.7%	+/-0.1
8:00 a.m. to 8:29 a.m.	11.0%	+/-0.1	9.9%	+/-0.1	12.3%	+/-0.1
8:30 a.m. to 8:59 a.m.	5.4%	+/-0.1	4.4%	+/-0.1	6.5%	+/-0.1
9:00 a.m. to 11:59 p.m.	24.5%	+/-0.1	23.0%	+/-0.1	26.1%	+/-0.1
TRAVEL TIME TO WORK						
Less than 10 minutes	12.9%	+/-0.1	12.0%	+/-0.1	13.9%	+/-0.1
10 to 14 minutes	13.8%	+/-0.1	12.9%	+/-0.1	14.8%	+/-0.1
15 to 19 minutes	15.4%	+/-0.1	14.7%	+/-0.1	16.1%	+/-0.1
20 to 24 minutes	14.6%	+/-0.1	14.4%	+/-0.1	14.9%	+/-0.1
25 to 29 minutes	6.3%	+/-0.1	6.2%	+/-0.1	6.4%	+/-0.1
30 to 34 minutes	13.7%	+/-0.1	14.2%	+/-0.1	13.1%	+/-0.1
35 to 44 minutes	6.7%	+/-0.1	7.0%	+/-0.1	6.4%	+/-0.1
45 to 59 minutes	8.0%	+/-0.1	8.5%	+/-0.1	7.3%	+/-0.1
60 or more minutes	8.7%	+/-0.1	10.1%	+/-0.1	7.1%	+/-0.1
Mean travel time to work (minutes)	26.1	+/-0.1	27.6	+/-0.1	24.5	+/-0.1
VEHICLES AVAILABLE						
Workers 16 years and over in households	144,438,354	+/-151,272	76,468,299	+/-84,081	67,970,055	+/-74,532
No vehicle available	4.4%	+/-0.1	4.3%	+/-0.1	4.6%	+/-0.1
1 vehicle available	21.2%	+/-0.1	19.0%	+/-0.1	23.6%	+/-0.1
2 vehicles available	41.5%	+/-0.1	42.6%	+/-0.1	40.2%	+/-0.1
3 or more vehicles available	32.9%	+/-0.1	34.1%	+/-0.1	31.6%	+/-0.1
PERCENT ALLOCATED						
Means of transportation to work	8.6%	(X)	(X)	(X)	(X)	(X)
Private vehicle occupancy	9.8%	(X)	(X)	(X)	(X)	(X)
Place of work	11.5%	(X)	(X)	(X)	(X)	(X)
Time leaving home to go to work	18.0%	(X)	(X)	(X)	(X)	(X)
Travel time to work	13.1%	(X)	(X)	(X)	(X)	(X)
Vehicles available	1.2%	(X)	(X)	(X)	(X)	(X)

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Explanation of Symbols:

S0801

COMMUTING CHARACTERISTICS BY SEX
2012-2016 American Community Survey 5-Year Estimates

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2016
2015
2014
2013
2012
2011
2010

Subject	Census Tract 3521.02, Middlesex County, Massachusetts					
	Total		Male		Female	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Workers 16 years and over	1,438	+/-206	652	+/-122	786	+/-154
MEANS OF TRANSPORTATION TO WORK						
Car, truck, or van	41.0%	+/-7.9	36.2%	+/-9.0	45.0%	+/-10.7
Drove alone	35.7%	+/-8.5	31.4%	+/-9.8	39.2%	+/-11.3
Carpooled	5.4%	+/-4.3	4.8%	+/-4.5	5.9%	+/-5.2
In 2-person carpool	5.4%	+/-4.3	4.8%	+/-4.5	5.9%	+/-5.2
In 3-person carpool	0.0%	+/-2.2	0.0%	+/-4.9	0.0%	+/-4.0
In 4-or-more person carpool	0.0%	+/-2.2	0.0%	+/-4.9	0.0%	+/-4.0
Workers per car, truck, or van	1.07	+/-0.06	1.07	+/-0.08	1.07	+/-0.07
Public transportation (excluding taxicab)	20.7%	+/-6.3	15.2%	+/-7.2	25.3%	+/-9.3
Walked	29.4%	+/-7.7	37.4%	+/-10.5	22.8%	+/-8.8
Bicycle	5.1%	+/-3.8	9.2%	+/-6.4	1.8%	+/-2.9
Taxicab, motorcycle, or other means	1.7%	+/-1.6	0.0%	+/-4.9	3.2%	+/-3.0
Worked at home	1.9%	+/-1.6	2.0%	+/-2.4	1.9%	+/-2.3
PLACE OF WORK						
Worked in state of residence	99.0%	+/-1.6	97.9%	+/-3.5	100.0%	+/-4.0
Worked in county of residence	51.9%	+/-8.8	51.7%	+/-12.3	52.2%	+/-9.9
Worked outside county of residence	47.1%	+/-8.9	46.2%	+/-12.1	47.8%	+/-9.9
Worked outside state of residence	1.0%	+/-1.6	2.1%	+/-3.5	0.0%	+/-4.0
Living in a place	100.0%	+/-2.2	100.0%	+/-4.9	100.0%	+/-4.0
Worked in place of residence	37.5%	+/-7.3	39.9%	+/-10.8	35.5%	+/-9.3
Worked outside place of residence	62.5%	+/-7.3	60.1%	+/-10.8	64.5%	+/-9.3
Not living in a place	0.0%	+/-2.2	0.0%	+/-4.9	0.0%	+/-4.0
Living in 12 selected states	100.0%	+/-2.2	100.0%	+/-4.9	100.0%	+/-4.0
Worked in minor civil division of residence	37.5%	+/-7.3	39.9%	+/-10.8	35.5%	+/-9.3
Worked outside minor civil division of residence	62.5%	+/-7.3	60.1%	+/-10.8	64.5%	+/-9.3
Not living in 12 selected states	0.0%	+/-2.2	0.0%	+/-4.9	0.0%	+/-4.0
Workers 16 years and over who did not work at home	1,410	+/-200	639	+/-121	771	+/-149
TIME LEAVING HOME TO GO TO WORK						
12:00 a.m. to 4:59 a.m.	0.6%	+/-1.0	1.4%	+/-2.1	0.0%	+/-4.1
5:00 a.m. to 5:29 a.m.	0.0%	+/-2.3	0.0%	+/-5.0	0.0%	+/-4.1
5:30 a.m. to 5:59 a.m.	0.6%	+/-1.1	1.3%	+/-2.4	0.0%	+/-4.1
6:00 a.m. to 6:29 a.m.	2.3%	+/-2.1	1.9%	+/-2.8	2.6%	+/-3.0
6:30 a.m. to 6:59 a.m.	7.0%	+/-3.7	8.5%	+/-5.4	5.8%	+/-4.2
7:00 a.m. to 7:29 a.m.	12.9%	+/-5.6	7.0%	+/-4.6	17.8%	+/-4.4
7:30 a.m. to 7:59 a.m.	8.9%	+/-3.8	9.2%	+/-5.4	8.6%	+/-5.3
8:00 a.m. to 8:29 a.m.	26.5%	+/-7.7	21.4%	+/-11.1	30.6%	+/-8.5
8:30 a.m. to 8:59 a.m.	17.7%	+/-7.2	17.1%	+/-9.0	18.3%	+/-9.2
9:00 a.m. to 11:59 p.m.	23.5%	+/-6.9	32.2%	+/-10.3	16.3%	+/-8.1
TRAVEL TIME TO WORK						
Less than 10 minutes	6.9%	+/-4.6	6.6%	+/-5.6	7.1%	+/-7.0
10 to 14 minutes	17.0%	+/-6.0	19.4%	+/-8.2	14.9%	+/-8.9
15 to 19 minutes	16.7%	+/-6.5	13.6%	+/-7.2	19.3%	+/-10.0
20 to 24 minutes	19.6%	+/-6.0	23.3%	+/-8.8	16.6%	+/-8.5
25 to 29 minutes	4.3%	+/-3.8	3.8%	+/-4.5	4.7%	+/-4.5
30 to 34 minutes	19.1%	+/-7.5	14.1%	+/-7.8	23.2%	+/-10.2
35 to 44 minutes	7.0%	+/-4.6	13.0%	+/-9.4	2.1%	+/-2.4
45 to 59 minutes	5.4%	+/-2.9	4.9%	+/-4.4	5.8%	+/-3.8
60 or more minutes	4.0%	+/-2.9	1.4%	+/-2.0	6.2%	+/-4.7
Mean travel time to work (minutes)	23.3	+/-2.4	22.4	+/-2.9	24.0	+/-3.5
VEHICLES AVAILABLE						
Workers 16 years and over in households	1,438	+/-206	652	+/-122	786	+/-154
No vehicle available	11.6%	+/-5.4	12.1%	+/-6.6	11.2%	+/-7.3
1 vehicle available	49.5%	+/-9.5	56.3%	+/-11.3	43.9%	+/-11.8
2 vehicles available	29.8%	+/-9.9	27.5%	+/-10.6	31.8%	+/-11.8
3 or more vehicles available	9.0%	+/-7.2	4.1%	+/-4.7	13.1%	+/-11.4
PERCENT ALLOCATED						
Means of transportation to work	12.2%	(X)	(X)	(X)	(X)	(X)
Private vehicle occupancy	18.6%	(X)	(X)	(X)	(X)	(X)
Place of work	11.5%	(X)	(X)	(X)	(X)	(X)
Time leaving home to go to work	18.7%	(X)	(X)	(X)	(X)	(X)
Travel time to work	10.6%	(X)	(X)	(X)	(X)	(X)
Vehicles available	0.0%	(X)	(X)	(X)	(X)	(X)

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Explanation of Symbols:

TRIP DISTRIBUTION DATA

Regional Trip Distribution

Generalized Area	Location relative to site	from/to	Office/Employee Percent Distributions from Recent Projects/Reports					Used for Study
			1st Street Assemblage	K2C2	2010 PTDM reports	Courthouse	Average	
WWNB, West	West	south	22	25	20	24	22.75	23
NE (east of I-93)	Northeast	north	24	19	24	29	24	24
Boston	East	east	18	28	18	8	18	18
Arlington, Somerville	West	west	8	3	10	9	7.5	7
NW (west of I-93), Somerville, Cambridge	Northwest	north	24	22	24	26	24	24
Cambridge	West	west	4	3	4	4	3.75	4
TOTAL			100	100	100	100	100	100

Localized Trip Distribution

Route	from/to	Percentage
Charlestown Ave	north	20
Charles River Dam Road	north	4
O'Brien Hwy	north	20
Cambridge Street	west	4
Charles Street	north	4
Binney Street	west	7
Memorial Drive	west/south	23
Longfellow Bridge	east	18
TOTAL		100

Third Floor Entering Study Area Distribution

Route	Direction	From	Notes
Land Blvd	north	12	Directly from Charlestown Ave
First Street	north	22	Includes trips from Charlestown Ave (8%), Charles River Dam Road (4%), and Thorndike Street (10%)
Charles Street	west	18	Includes trips from Cambridge Street (4%) and O'Brien Hwy (10%), and local from Charles Street (4%)
Spring Street	west	0	
First Street	south	12	Includes trips from Longfellow Bridge (5%) and Binney Street (7%)
Land Blvd	west/south	36	Includes trips from Mem. Dr (23%) and Longfellow Bridge (13%)
TOTAL		100	

Third Floor Exiting Study Area Distribution

Route	Direction	To	Notes
Land Blvd	north	12	Directly to Charlestown Ave
First Street	north	36	Includes trips to Charlestown Ave (8%), Charles River Dam Road (4%), O'Brien Hwy (4%), trips to Cambridge Street (4%), and additional trips to O'Brien Hwy (16%)
Charles Street	west	0	
Spring Street	west	4	Includes trips back to local from Spring Street
First Street	south	19	Includes trips to Binney Street (7%) and Mem. Drive (12%)
Land Blvd	west/south	29	Includes trips to Longfellow Bridge (18%) and Mem. Drive (11%)
TOTAL		100	

CAPACITY ANALYSIS METHODOLOGY

CAPACITY ANALYSIS METHODOLOGY

LEVELS OF SERVICE

A primary result of capacity analyses is the assignment of level of service to traffic facilities under various traffic-flow conditions.¹ The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with level-of-service (LOS) A representing the best operating conditions and LOS F representing congested or constrained operating conditions.

Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

Unsignalized Intersections

The six levels of service for unsignalized intersections may be described as follows:

- *LOS A* represents a condition with little or no control delay to minor street traffic.
- *LOS B* represents a condition with short control delays to minor street traffic.
- *LOS C* represents a condition with average control delays to minor street traffic.
- *LOS D* represents a condition with long control delays to minor street traffic.
- *LOS E* represents operating conditions at or near capacity level, with very long control delays to minor street traffic.

¹The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2016.

- *LOS F* represents a condition where minor street demand volume exceeds capacity of an approach lane, with extreme control delays resulting.

The levels of service of unsignalized intersections are determined by application of a procedure described in the *Highway Capacity Manual 6th Edition*.² Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and STOP signs. Control delay includes the effects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the *Highway Capacity Manual 6th Edition*. Table 13 summarizes the relationship between level of service and average control delay for two-way stop controlled and all-way stop controlled intersections.

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS^a

Level-Of-Service by Volume-to-Capacity Ratio		Average Control Delay (Seconds Per Vehicle)
$v/c \leq 1.0$	$v/c > 1.0$	
A	F	≤ 10.0
B	F	10.1 to 15.0
C	F	15.1 to 25.0
D	F	25.1 to 35.0
E	F	35.1 to 50.0
F	F	> 50.0

^aSource: *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2016; page 20-6.

Signalized Intersections

The six levels of service for signalized intersections may be described as follows:

- * *LOS A* describes operations with very low control delay; most vehicles do not stop at all.
- * *LOS B* describes operations with relatively low control delay. However, more vehicles stop than *LOS A*.
- * *LOS C* describes operations with higher control delays. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
- * *LOS D* describes operations with control delay in the range where the influence of congestion becomes more noticeable. Many vehicles stop and individual cycle failures are noticeable.
- * *LOS E* describes operations with high control delay values. Individual cycle failures are frequent occurrences.

²*Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2016.

- * *LOS F* describes operations with high control delay values that often occur with over-saturation. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Levels of service for signalized intersections are calculated using the operational analysis methodology of the *Highway Capacity Manual 6th Edition*. This method assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on delay. Level-of-service designations are based on the criterion of control or signal delay per vehicle. Control or signal delay is a measure of driver discomfort, frustration, and fuel consumption, and includes initial deceleration delay approaching the traffic signal, queue move-up time, stopped delay and final acceleration delay. Table 14 summarizes the relationship between level-of-service and control delay. The tabulated control delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to entire intersections.

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS^a

Level-Of-Service by Volume-to-Capacity Ratio		Average Control Delay (Seconds Per Vehicle)
$v/c \leq 1.0$	$v/c > 1.0$	
A	F	≤ 10.0
B	F	10.1 to 20.0
C	F	20.1 to 35.0
D	F	35.1 to 55.0
E	F	55.1 to 80.0
F	F	> 80.0

^aSource: *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2016; page 19-16.

PEDESTRIAN ANALYSIS

The six pedestrian levels of service may be described as follows:

- * *LOS A*: Pedestrians basically move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely.
- * *LOS B*: Sufficient area is provided to allow pedestrians to freely select walking speeds, to bypass other pedestrians, and to avoid crossing conflicts with others.
- * *LOS C*: Sufficient space is available to select normal walking speeds, and to bypass other pedestrians in primarily unidirectional streams.
- * *LOS D*: Freedom to select individual walking speed and to bypass other pedestrians is restricted.
- * *LOS E*: Virtually all pedestrians would have their normal walking speed restricted, requiring frequent adjustment of gait. At the lower range of this level of service, forward movement is possible only by “shuffling.” Insufficient space is provided for passing of slower pedestrians.

- * *LOS F*: All walking speeds are severely restricted, and forward progress is made only by “shuffling.” There is frequent, unavoidable contact with other pedestrians. Flow is sporadic and unstable.

**PEDESTRIAN LEVEL-OF-SERVICE CRITERIA
AT SIGNALIZED INTERSECTIONS^a**

Level of Service	Average Delay Per Pedestrian (Seconds)
A	<10
B	≥10 to 20
C	>20 to 30
D	>30 to 40
E	>40 to 60
F	>60

^aSource: *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2000; Exhibit 18-9.

**PEDESTRIAN LEVEL-OF-SERVICE CRITERIA
AT UNSIGNALIZED INTERSECTIONS^a**

Level of Service	Average Delay Per Pedestrian (Seconds)
A	≤5
B	≥5 to 10
C	>10 to 20
D	>20 to 30
E	>30 to 45
F	>45

^aSource: *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2000; Exhibit 18-13.

CAPACITY ANALYSIS

Land Boulevard at CambridgeSide Place and Hotel Driveway

CambridgeSide Place at Lower Garage South Exit

First Street at CambridgeSide Place and Charles Street

First Street at Upper Garage Entrance/Exit and Spring Street

Land Boulevard at CambridgeSide Place and Hotel Driveway

Lanes, Volumes, Timings

2018 Existing Weekday Morning - Calibrated

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/07/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	9	18	16	6	20	139	586	23	49	1352	140
Future Volume (vph)	77	9	18	16	6	20	139	586	23	49	1352	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	12	12	12	9	12	12	9	12	12
Storage Length (ft)	0		0	0		0	165		0	135		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt			0.850		0.935			0.994			0.986	
Flt Protected	0.950	0.962			0.982		0.950			0.950		
Satd. Flow (prot)	1600	1621	1830	0	1745	0	1624	4965	0	1624	5064	0
Flt Permitted	0.869	0.836			0.851		0.950			0.950		
Satd. Flow (perm)	1464	1408	1830	0	1512	0	1624	4965	0	1624	5064	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			96		23			6			17	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		139			131			301			255	
Travel Time (s)		3.2			3.0			6.8			5.8	
Peak Hour Factor	0.75	0.75	0.75	0.88	0.88	0.88	0.91	0.91	0.91	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	1%	1%
Adj. Flow (vph)	103	12	24	18	7	23	153	644	25	52	1438	149
Shared Lane Traffic (%)	45%											
Lane Group Flow (vph)	57	58	24	0	48	0	153	669	0	52	1587	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	0.85	1.00	1.00	1.00	1.14	1.00	1.00	1.14	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings

2018 Existing Weekday Morning - Calibrated

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/07/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			5	2		1	6	
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		10.0	23.0		10.0	23.0	
Total Split (s)	21.0	21.0	21.0	21.0	21.0		16.0	57.0		16.0	57.0	
Total Split (%)	16.8%	16.8%	16.8%	16.8%	16.8%		12.8%	45.6%		12.8%	45.6%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0		11.0	52.0		11.0	52.0	
Yellow Time (s)	4.0	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	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	9.9	9.9	9.9		9.8		11.4	60.8		8.5	53.7	
Actuated g/C Ratio	0.10	0.10	0.10		0.10		0.12	0.61		0.09	0.54	
v/c Ratio	0.39	0.41	0.09		0.28		0.82	0.22		0.38	0.58	
Control Delay	53.7	55.0	0.7		32.4		80.7	14.0		55.4	19.3	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay	53.7	55.0	0.7		32.4		80.7	14.0		55.4	19.3	
LOS	D	D	A		C		F	B		E	B	
Approach Delay		45.1			32.4			26.4			20.4	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 125

Actuated Cycle Length: 99.1

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 23.8

Intersection LOS: C

Intersection Capacity Utilization 58.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 6: Land Boulevard & CambridgeSide Place /Hotel Driveway

 Ø1	 Ø2	 Ø4	 Ø9
16 s	57 s	21 s	31 s
 Ø5	 Ø6	 Ø8	
16 s	57 s	21 s	

Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	31.0
Total Split (%)	25%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	29
Act Effect Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2018 Existing Weekday Morning - Calibrated

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/07/2018



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	57	58	24	48	153	669	52	1587
v/c Ratio	0.39	0.41	0.09	0.28	0.82	0.22	0.38	0.58
Control Delay	53.7	55.0	0.7	32.4	80.7	14.0	55.4	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	55.0	0.7	32.4	80.7	14.0	55.4	19.3
Queue Length 50th (ft)	41	41	0	17	109	97	36	302
Queue Length 95th (ft)	69	70	0	52	#249	139	77	384
Internal Link Dist (ft)		59		51		221		175
Turn Bay Length (ft)					165		135	
Base Capacity (vph)	244	234	384	271	186	3047	186	2750
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.25	0.06	0.18	0.82	0.22	0.28	0.58

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings

2018 Existing Weekday Evening - Calibrated

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/07/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	374	20	102	15	19	34	91	1088	68	100	746	155
Future Volume (vph)	374	20	102	15	19	34	91	1088	68	100	746	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	12	12	12	9	12	12	9	12	12
Storage Length (ft)	0		0	0		0	165		0	135		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt			0.850		0.932			0.991			0.974	
Flt Protected	0.950	0.957			0.989		0.950			0.950		
Satd. Flow (prot)	1600	1612	1812	0	1751	0	1624	5092	0	1624	5011	0
Flt Permitted	0.682	0.676			0.652		0.950			0.950		
Satd. Flow (perm)	1149	1139	1812	0	1155	0	1624	5092	0	1624	5011	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			111		33			9			44	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		139			131			301			255	
Travel Time (s)		3.2			3.0			6.8			5.8	
Peak Hour Factor	0.92	0.92	0.92	0.80	0.80	0.80	0.94	0.94	0.94	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	407	22	111	19	24	43	97	1157	72	108	802	167
Shared Lane Traffic (%)	48%											
Lane Group Flow (vph)	212	217	111	0	86	0	97	1229	0	108	969	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	0.85	1.00	1.00	1.00	1.14	1.00	1.00	1.14	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		10.0	22.5		10.0	22.5	
Total Split (s)	21.0	21.0	21.0	21.0	21.0		16.0	57.0		16.0	57.0	
Total Split (%)	16.8%	16.8%	16.8%	16.8%	16.8%		12.8%	45.6%		12.8%	45.6%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0		11.0	52.0		11.0	52.0	
Yellow Time (s)	4.0	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	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	16.2	16.2	16.2		16.2		10.0	52.6		10.4	53.1	
Actuated g/C Ratio	0.15	0.15	0.15		0.15		0.09	0.49		0.10	0.50	
v/c Ratio	1.22	1.25	0.30		0.42		0.63	0.49		0.68	0.39	
Control Delay	179.2	193.0	10.8		36.5		68.2	20.2		70.8	17.9	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay	179.2	193.0	10.8		36.5		68.2	20.2		70.8	17.9	
LOS	F	F	B		D		E	C		E	B	
Approach Delay		150.1			36.5			23.7			23.2	
Approach LOS		F			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 125

Actuated Cycle Length: 106.6

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.25

Intersection Signal Delay: 46.4

Intersection LOS: D

Intersection Capacity Utilization 58.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 6: Land Boulevard & CambridgeSide Place /Hotel Driveway

 Ø1	 Ø2	 Ø4	 Ø9
16 s	57 s	21 s	31 s
 Ø5	 Ø6	 Ø8	
16 s	57 s	21 s	

Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.5
Total Split (s)	31.0
Total Split (%)	25%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	29
Act Effect Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2018 Existing Weekday Evening - Calibrated

11/07/2018

6: Land Boulevard & CambridgeSide Place /Hotel Driveway



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	212	217	111	86	97	1229	108	969
v/c Ratio	1.22	1.25	0.30	0.42	0.63	0.49	0.68	0.39
Control Delay	179.2	193.0	10.8	36.5	68.2	20.2	70.8	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	179.2	193.0	10.8	36.5	68.2	20.2	70.8	17.9
Queue Length 50th (ft)	~217	~226	0	36	71	237	80	168
Queue Length 95th (ft)	#380	#390	52	76	#142	281	#165	205
Internal Link Dist (ft)		59		51		221		175
Turn Bay Length (ft)					165		135	
Base Capacity (vph)	174	173	369	203	169	2519	169	2516
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	1.25	0.30	0.42	0.57	0.49	0.64	0.39

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings

2018 Existing Saturday Midday - Calibrated

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/07/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	6	59	8	4	31	117	690	15	54	689	238
Future Volume (vph)	169	6	59	8	4	31	117	690	15	54	689	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	12	12	12	9	12	12	9	12	12
Storage Length (ft)	0		0	0		0	165		0	135		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt			0.850		0.902			0.997			0.961	
Flt Protected	0.950	0.956			0.991		0.950			0.950		
Satd. Flow (prot)	1585	1596	1760	0	1698	0	1624	5024	0	1624	4912	0
Flt Permitted	0.842	0.803			0.934		0.950			0.950		
Satd. Flow (perm)	1404	1340	1760	0	1601	0	1624	5024	0	1624	4912	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			96		34			3			86	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		139			131			301			255	
Travel Time (s)		3.2			3.0			6.8			5.8	
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	4%	0%	0%	0%	0%	3%	0%	0%	2%	0%
Adj. Flow (vph)	190	7	66	9	4	34	129	758	16	56	718	248
Shared Lane Traffic (%)	48%											
Lane Group Flow (vph)	99	98	66	0	47	0	129	774	0	56	966	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	0.85	1.00	1.00	1.00	1.14	1.00	1.00	1.14	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Fr	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings

2018 Existing Saturday Midday - Calibrated

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/07/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			5	2		1	6	
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		10.0	22.5		10.0	22.5	
Total Split (s)	21.0	21.0	21.0	21.0	21.0		16.0	57.0		16.0	57.0	
Total Split (%)	16.8%	16.8%	16.8%	16.8%	16.8%		12.8%	45.6%		12.8%	45.6%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0		11.0	52.0		11.0	52.0	
Yellow Time (s)	4.0	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	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	12.5	12.5	12.5		12.5		11.2	58.1		8.7	53.1	
Actuated g/C Ratio	0.12	0.12	0.12		0.12		0.11	0.56		0.08	0.51	
v/c Ratio	0.59	0.61	0.22		0.21		0.74	0.28		0.41	0.38	
Control Delay	60.3	62.4	5.6		22.7		73.8	15.8		58.0	16.4	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay	60.3	62.4	5.6		22.7		73.8	15.8		58.0	16.4	
LOS	E	E	A		C		E	B		E	B	
Approach Delay		47.4			22.7			24.1			18.7	
Approach LOS		D			C			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 125

Actuated Cycle Length: 103.9

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 24.3

Intersection LOS: C

Intersection Capacity Utilization 49.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Land Boulevard & CambridgeSide Place /Hotel Driveway

Ø1	Ø2	Ø4	Ø9
16 s	57 s	21 s	31 s
Ø5	Ø6	Ø8	
16 s	57 s	21 s	

Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.5
Total Split (s)	31.0
Total Split (%)	25%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	29
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2018 Existing Saturday Midday - Calibrated

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/07/2018

								
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	99	98	66	47	129	774	56	966
v/c Ratio	0.59	0.61	0.22	0.21	0.74	0.28	0.41	0.38
Control Delay	60.3	62.4	5.6	22.7	73.8	15.8	58.0	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	62.4	5.6	22.7	73.8	15.8	58.0	16.4
Queue Length 50th (ft)	73	72	0	9	94	126	40	154
Queue Length 95th (ft)	131	131	19	44	#207	167	84	197
Internal Link Dist (ft)		59		51		221		175
Turn Bay Length (ft)					165		135	
Base Capacity (vph)	220	210	357	280	175	2812	175	2550
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.47	0.18	0.17	0.74	0.28	0.32	0.38

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings

2018 Build Weekday Morning - Calibrated

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/07/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	9	21	16	6	20	158	586	23	49	1352	142
Future Volume (vph)	77	9	21	16	6	20	158	586	23	49	1352	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	12	12	12	9	12	12	9	12	12
Storage Length (ft)	0		0	0		0	165		0	135		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt			0.850		0.935			0.994			0.986	
Flt Protected	0.950	0.962			0.982		0.950			0.950		
Satd. Flow (prot)	1600	1621	1830	0	1745	0	1624	4965	0	1624	5064	0
Flt Permitted	0.869	0.836			0.851		0.950			0.950		
Satd. Flow (perm)	1464	1408	1830	0	1512	0	1624	4965	0	1624	5064	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			96		23			6			17	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		139			131			301			255	
Travel Time (s)		3.2			3.0			6.8			5.8	
Peak Hour Factor	0.75	0.75	0.75	0.88	0.88	0.88	0.91	0.91	0.91	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	1%	1%
Adj. Flow (vph)	103	12	28	18	7	23	174	644	25	52	1438	151
Shared Lane Traffic (%)	45%											
Lane Group Flow (vph)	57	58	28	0	48	0	174	669	0	52	1589	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	0.85	1.00	1.00	1.00	1.14	1.00	1.00	1.14	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			5	2		1	6	
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		10.0	23.0		10.0	23.0	
Total Split (s)	21.0	21.0	21.0	21.0	21.0		16.0	57.0		16.0	57.0	
Total Split (%)	16.8%	16.8%	16.8%	16.8%	16.8%		12.8%	45.6%		12.8%	45.6%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0		11.0	52.0		11.0	52.0	
Yellow Time (s)	4.0	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	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	9.9	9.9	9.9		9.8		11.4	60.8		8.5	53.7	
Actuated g/C Ratio	0.10	0.10	0.10		0.10		0.12	0.61		0.09	0.54	
v/c Ratio	0.39	0.41	0.10		0.28		0.94	0.22		0.38	0.58	
Control Delay	53.7	55.0	0.8		32.4		100.2	14.0		55.4	19.3	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay	53.7	55.0	0.8		32.4		100.2	14.0		55.4	19.3	
LOS	D	D	A		C		F	B		E	B	
Approach Delay		43.9			32.4			31.8			20.4	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 125

Actuated Cycle Length: 99.1

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 25.5

Intersection LOS: C

Intersection Capacity Utilization 59.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 6: Land Boulevard & CambridgeSide Place /Hotel Driveway

Ø1	Ø2	Ø4	Ø9
16 s	57 s	21 s	31 s
Ø5	Ø6	Ø8	
16 s	57 s	21 s	

Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	31.0
Total Split (%)	25%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	29
Act Effect Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2018 Build Weekday Morning - Calibrated

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/07/2018



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	57	58	28	48	174	669	52	1589
v/c Ratio	0.39	0.41	0.10	0.28	0.94	0.22	0.38	0.58
Control Delay	53.7	55.0	0.8	32.4	100.2	14.0	55.4	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	55.0	0.8	32.4	100.2	14.0	55.4	19.3
Queue Length 50th (ft)	41	41	0	17	~137	97	36	303
Queue Length 95th (ft)	69	70	0	52	#289	139	77	384
Internal Link Dist (ft)		59		51		221		175
Turn Bay Length (ft)					165		135	
Base Capacity (vph)	244	234	384	271	186	3047	186	2750
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.25	0.07	0.18	0.94	0.22	0.28	0.58

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings

2018 Build Weekday Evening - Calibrated

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/07/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	370	20	116	15	19	34	89	1088	68	100	746	147
Future Volume (vph)	370	20	116	15	19	34	89	1088	68	100	746	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	12	12	12	9	12	12	9	12	12
Storage Length (ft)	0		0	0		0	165		0	135		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt			0.850		0.932			0.991			0.975	
Flt Protected	0.950	0.957			0.989		0.950			0.950		
Satd. Flow (prot)	1600	1612	1812	0	1751	0	1624	5092	0	1624	5015	0
Flt Permitted	0.682	0.677			0.676		0.950			0.950		
Satd. Flow (perm)	1149	1141	1812	0	1197	0	1624	5092	0	1624	5015	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126		33			9			40	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		139			131			301			255	
Travel Time (s)		3.2			3.0			6.8			5.8	
Peak Hour Factor	0.92	0.92	0.92	0.80	0.80	0.80	0.94	0.94	0.94	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	402	22	126	19	24	43	95	1157	72	108	802	158
Shared Lane Traffic (%)	47%											
Lane Group Flow (vph)	213	211	126	0	86	0	95	1229	0	108	960	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	0.85	1.00	1.00	1.00	1.14	1.00	1.00	1.14	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		10.0	22.5		10.0	22.5	
Total Split (s)	21.0	21.0	21.0	21.0	21.0		16.0	57.0		16.0	57.0	
Total Split (%)	16.8%	16.8%	16.8%	16.8%	16.8%		12.8%	45.6%		12.8%	45.6%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0		11.0	52.0		11.0	52.0	
Yellow Time (s)	4.0	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	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	16.2	16.2	16.2		16.2		10.0	52.6		10.4	53.1	
Actuated g/C Ratio	0.15	0.15	0.15		0.15		0.09	0.49		0.10	0.50	
v/c Ratio	1.22	1.22	0.33		0.41		0.62	0.49		0.68	0.38	
Control Delay	181.2	180.8	10.5		35.9		67.6	20.2		70.8	17.9	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay	181.2	180.8	10.5		35.9		67.6	20.2		70.8	17.9	
LOS	F	F	B		D		E	C		E	B	
Approach Delay		141.9			35.9			23.6			23.3	
Approach LOS		F			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 125

Actuated Cycle Length: 106.6

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.22

Intersection Signal Delay: 45.3

Intersection LOS: D

Intersection Capacity Utilization 58.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 6: Land Boulevard & CambridgeSide Place /Hotel Driveway

 Ø1	 Ø2	 Ø4	 Ø9
16 s	57 s	21 s	31 s
 Ø5	 Ø6	 Ø8	
16 s	57 s	21 s	

Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.5
Total Split (s)	31.0
Total Split (%)	25%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	29
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2018 Build Weekday Evening - Calibrated

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/07/2018



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	213	211	126	86	95	1229	108	960
v/c Ratio	1.22	1.22	0.33	0.41	0.62	0.49	0.68	0.38
Control Delay	181.2	180.8	10.5	35.9	67.6	20.2	70.8	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	181.2	180.8	10.5	35.9	67.6	20.2	70.8	17.9
Queue Length 50th (ft)	~218	~216	0	36	69	237	80	167
Queue Length 95th (ft)	#381	#378	55	75	#139	281	#165	204
Internal Link Dist (ft)		59		51		221		175
Turn Bay Length (ft)					165		135	
Base Capacity (vph)	174	173	382	209	169	2519	169	2518
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	1.22	0.33	0.41	0.56	0.49	0.64	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	6	58	8	4	31	107	690	15	54	689	215
Future Volume (vph)	152	6	58	8	4	31	107	690	15	54	689	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	12	12	12	9	12	12	9	12	12
Storage Length (ft)	0		0	0		0	165		0	135		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt			0.850		0.902			0.997			0.964	
Flt Protected	0.950	0.956			0.991		0.950			0.950		
Satd. Flow (prot)	1585	1596	1760	0	1698	0	1624	5024	0	1624	4925	0
Flt Permitted	0.847	0.806			0.934		0.950			0.950		
Satd. Flow (perm)	1413	1345	1760	0	1601	0	1624	5024	0	1624	4925	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			96		34			3			77	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		139			131			301			255	
Travel Time (s)		3.2			3.0			6.8			5.8	
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	4%	0%	0%	0%	0%	3%	0%	0%	2%	0%
Adj. Flow (vph)	171	7	65	9	4	34	118	758	16	56	718	224
Shared Lane Traffic (%)	48%											
Lane Group Flow (vph)	89	89	65	0	47	0	118	774	0	56	942	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	0.85	1.00	1.00	1.00	1.14	1.00	1.00	1.14	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Fr t	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		10.0	22.5		10.0	22.5	
Total Split (s)	21.0	21.0	21.0	21.0	21.0		16.0	57.0		16.0	57.0	
Total Split (%)	16.8%	16.8%	16.8%	16.8%	16.8%		12.8%	45.6%		12.8%	45.6%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0		11.0	52.0		11.0	52.0	
Yellow Time (s)	4.0	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	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	12.0	12.0	12.0		12.0		10.8	57.9		8.7	53.2	
Actuated g/C Ratio	0.12	0.12	0.12		0.12		0.10	0.56		0.08	0.52	
v/c Ratio	0.54	0.57	0.22		0.22		0.70	0.27		0.41	0.37	
Control Delay	58.2	60.4	5.6		22.9		70.3	15.6		57.6	16.2	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay	58.2	60.4	5.6		22.9		70.3	15.6		57.6	16.2	
LOS	E	E	A		C		E	B		E	B	
Approach Delay		44.9			22.9			22.9			18.5	
Approach LOS		D			C			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 125

Actuated Cycle Length: 103.1

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 23.3

Intersection LOS: C

Intersection Capacity Utilization 47.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Land Boulevard & CambridgeSide Place /Hotel Driveway

 Ø1	 Ø2	 Ø4	 Ø9
16 s	57 s	21 s	31 s
 Ø5	 Ø6	 Ø8	
16 s	57 s	21 s	

Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.5
Total Split (s)	31.0
Total Split (%)	25%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	29
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2018 Build Saturday Midday - Calibrated

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/07/2018



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	89	89	65	47	118	774	56	942
v/c Ratio	0.54	0.57	0.22	0.22	0.70	0.27	0.41	0.37
Control Delay	58.2	60.4	5.6	22.9	70.3	15.6	57.6	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.2	60.4	5.6	22.9	70.3	15.6	57.6	16.2
Queue Length 50th (ft)	65	65	0	9	85	123	39	148
Queue Length 95th (ft)	121	121	19	44	#185	167	84	193
Internal Link Dist (ft)		59		51		221		175
Turn Bay Length (ft)					165		135	
Base Capacity (vph)	224	213	360	282	177	2821	177	2576
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.42	0.18	0.17	0.67	0.27	0.32	0.37

Intersection Summary

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings

2023 Future Weekday Morning

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	9	21	16	6	20	202	741	23	50	1622	204
Future Volume (vph)	83	9	21	16	6	20	202	741	23	50	1622	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	12	12	12	9	12	12	9	12	12
Storage Length (ft)	0		0	0		0	165		0	135		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt			0.850		0.935			0.996			0.983	
Flt Protected	0.950	0.961			0.982		0.950			0.950		
Satd. Flow (prot)	1600	1619	1830	0	1745	0	1624	4973	0	1624	5048	0
Flt Permitted	0.864	0.832			0.849		0.950			0.950		
Satd. Flow (perm)	1456	1402	1830	0	1508	0	1624	4973	0	1624	5048	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			96		23			4			22	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		139			131			301			255	
Travel Time (s)		3.2			3.0			6.8			5.8	
Peak Hour Factor	0.75	0.75	0.75	0.88	0.88	0.88	0.91	0.91	0.91	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	1%	1%
Adj. Flow (vph)	111	12	28	18	7	23	222	814	25	53	1726	217
Shared Lane Traffic (%)	45%											
Lane Group Flow (vph)	61	62	28	0	48	0	222	839	0	53	1943	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	0.85	1.00	1.00	1.00	1.14	1.00	1.00	1.14	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		10.0	23.0		10.0	23.0	
Total Split (s)	21.0	21.0	21.0	21.0	21.0		16.0	57.0		16.0	57.0	
Total Split (%)	16.8%	16.8%	16.8%	16.8%	16.8%		12.8%	45.6%		12.8%	45.6%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0		11.0	52.0		11.0	52.0	
Yellow Time (s)	4.0	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	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	10.2	10.2	10.2		10.1		11.4	60.8		8.5	53.7	
Actuated g/C Ratio	0.10	0.10	0.10		0.10		0.11	0.61		0.09	0.54	
v/c Ratio	0.41	0.43	0.10		0.28		1.20	0.28		0.38	0.71	
Control Delay	54.0	55.2	0.8		32.0		172.1	14.8		55.8	22.3	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay	54.0	55.2	0.8		32.0		172.1	14.8		55.8	22.3	
LOS	D	E	A		C		F	B		E	C	
Approach Delay		44.7			32.0			47.7			23.2	
Approach LOS		D			C			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 125

Actuated Cycle Length: 99.5

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.20

Intersection Signal Delay: 32.3

Intersection LOS: C

Intersection Capacity Utilization 68.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Land Boulevard & CambridgeSide Place /Hotel Driveway

 Ø1	 Ø2	 Ø4	 Ø9
16 s	57 s	21 s	31 s
 Ø5	 Ø6	 Ø8	
16 s	57 s	21 s	

Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	31.0
Total Split (%)	25%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	29
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2023 Future Weekday Morning

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/12/2018



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	61	62	28	48	222	839	53	1943
v/c Ratio	0.41	0.43	0.10	0.28	1.20	0.28	0.38	0.71
Control Delay	54.0	55.2	0.8	32.0	172.1	14.8	55.8	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	55.2	0.8	32.0	172.1	14.8	55.8	22.3
Queue Length 50th (ft)	44	44	0	17	~209	128	36	416
Queue Length 95th (ft)	73	74	0	52	#380	180	79	524
Internal Link Dist (ft)		59		51		221		175
Turn Bay Length (ft)					165		135	
Base Capacity (vph)	241	233	384	269	185	3042	185	2736
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.27	0.07	0.18	1.20	0.28	0.29	0.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings

2023 Future Weekday Evening

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	384	20	119	15	19	34	73	1145	54	101	902	161
Future Volume (vph)	384	20	119	15	19	34	73	1145	54	101	902	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	12	12	12	9	12	12	9	12	12
Storage Length (ft)	0		0	0		0	165		0	135		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt			0.850		0.932			0.993			0.977	
Flt Protected	0.950	0.957			0.989		0.950			0.950		
Satd. Flow (prot)	1600	1612	1812	0	1751	0	1624	5102	0	1624	5025	0
Flt Permitted	0.678	0.673			0.621		0.950			0.950		
Satd. Flow (perm)	1142	1134	1812	0	1100	0	1624	5102	0	1624	5025	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			129		33			7			35	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		139			131			301			255	
Travel Time (s)		3.2			3.0			6.8			5.8	
Peak Hour Factor	0.92	0.92	0.92	0.80	0.80	0.80	0.94	0.94	0.94	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	417	22	129	19	24	43	78	1218	57	109	970	173
Shared Lane Traffic (%)	48%											
Lane Group Flow (vph)	217	222	129	0	86	0	78	1275	0	109	1143	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	0.85	1.00	1.00	1.00	1.14	1.00	1.00	1.14	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		10.0	22.5		10.0	22.5	
Total Split (s)	21.0	21.0	21.0	21.0	21.0		16.0	57.0		16.0	57.0	
Total Split (%)	16.8%	16.8%	16.8%	16.8%	16.8%		12.8%	45.6%		12.8%	45.6%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0		11.0	52.0		11.0	52.0	
Yellow Time (s)	4.0	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	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	16.2	16.2	16.2		16.2		9.4	52.6		10.5	56.3	
Actuated g/C Ratio	0.15	0.15	0.15		0.15		0.09	0.49		0.10	0.53	
v/c Ratio	1.25	1.29	0.34		0.44		0.54	0.51		0.69	0.43	
Control Delay	193.0	206.3	10.5		37.4		63.4	20.5		71.1	18.1	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay	193.0	206.3	10.5		37.4		63.4	20.5		71.1	18.1	
LOS	F	F	B		D		E	C		E	B	
Approach Delay		156.8			37.4			23.0			22.7	
Approach LOS		F			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 125

Actuated Cycle Length: 106.6

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.29

Intersection Signal Delay: 46.6

Intersection LOS: D

Intersection Capacity Utilization 59.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 6: Land Boulevard & CambridgeSide Place /Hotel Driveway

 Ø1	 Ø2	 Ø4	 Ø9
16 s	57 s	21 s	31 s
 Ø5	 Ø6	 Ø8	
16 s	57 s	21 s	

Lanes, Volumes, Timings
6: Land Boulevard & CambridgeSide Place /Hotel Driveway

2023 Future Weekday Evening
11/12/2018

Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.5
Total Split (s)	31.0
Total Split (%)	25%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	29
Act Effect Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2023 Future Weekday Evening

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/12/2018



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	217	222	129	86	78	1275	109	1143
v/c Ratio	1.25	1.29	0.34	0.44	0.54	0.51	0.69	0.43
Control Delay	193.0	206.3	10.5	37.4	63.4	20.5	71.1	18.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	193.0	206.3	10.5	37.4	63.4	20.5	71.1	18.1
Queue Length 50th (ft)	~226	~235	0	36	56	249	80	210
Queue Length 95th (ft)	#390	#401	55	76	108	295	#168	253
Internal Link Dist (ft)		59		51		221		175
Turn Bay Length (ft)					165		135	
Base Capacity (vph)	173	172	384	195	169	2521	169	2670
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.25	1.29	0.34	0.44	0.46	0.51	0.64	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings

2023 Future Saturday Midday

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	6	59	8	4	31	109	791	15	55	786	230
Future Volume (vph)	217	6	59	8	4	31	109	791	15	55	786	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	16	12	12	12	9	12	12	9	12	12
Storage Length (ft)	0		0	0		0	165		0	135		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frts			0.850		0.902			0.997			0.966	
Flt Protected	0.950	0.955			0.991		0.950			0.950		
Satd. Flow (prot)	1585	1594	1760	0	1698	0	1624	5023	0	1624	4934	0
Flt Permitted	0.830	0.792			0.933		0.950			0.950		
Satd. Flow (perm)	1384	1322	1760	0	1599	0	1624	5023	0	1624	4934	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			96		34			3			73	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		139			131			301			255	
Travel Time (s)		3.2			3.0			6.8			5.8	
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.91	0.91	0.91	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	4%	0%	0%	0%	0%	3%	0%	0%	2%	0%
Adj. Flow (vph)	244	7	66	9	4	34	120	869	16	57	819	240
Shared Lane Traffic (%)	49%											
Lane Group Flow (vph)	124	127	66	0	47	0	120	885	0	57	1059	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	0.85	1.00	1.00	1.00	1.14	1.00	1.00	1.14	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		10.0	22.5		10.0	22.5	
Total Split (s)	21.0	21.0	21.0	21.0	21.0		16.0	57.0		16.0	57.0	
Total Split (%)	16.8%	16.8%	16.8%	16.8%	16.8%		12.8%	45.6%		12.8%	45.6%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0		11.0	52.0		11.0	52.0	
Yellow Time (s)	4.0	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	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	14.2	14.2	14.2		14.2		10.8	57.6		8.8	52.9	
Actuated g/C Ratio	0.14	0.14	0.14		0.14		0.10	0.55		0.08	0.50	
v/c Ratio	0.67	0.71	0.21		0.19		0.72	0.32		0.42	0.42	
Control Delay	63.9	68.5	5.3		22.3		73.2	16.7		58.7	17.6	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay	63.9	68.5	5.3		22.3		73.2	16.7		58.7	17.6	
LOS	E	E	A		C		E	B		E	B	
Approach Delay		53.5			22.3			23.5			19.7	
Approach LOS		D			C			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 125

Actuated Cycle Length: 105.1

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 25.6

Intersection LOS: C

Intersection Capacity Utilization 51.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Land Boulevard & CambridgeSide Place /Hotel Driveway

 Ø1	 Ø2	 Ø4	 Ø9
16 s	57 s	21 s	31 s
 Ø5	 Ø6	 Ø8	
16 s	57 s	21 s	

Lanes, Volumes, Timings
6: Land Boulevard & CambridgeSide Place /Hotel Driveway

2023 Future Saturday Midday
11/12/2018

Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.5
Total Split (s)	31.0
Total Split (%)	25%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	29
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2023 Future Saturday Midday

6: Land Boulevard & CambridgeSide Place /Hotel Driveway

11/12/2018



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	124	127	66	47	120	885	57	1059
v/c Ratio	0.67	0.71	0.21	0.19	0.72	0.32	0.42	0.42
Control Delay	63.9	68.5	5.3	22.3	73.2	16.7	58.7	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.9	68.5	5.3	22.3	73.2	16.7	58.7	17.6
Queue Length 50th (ft)	93	96	0	9	89	153	41	183
Queue Length 95th (ft)	#172	#186	19	44	#188	193	84	223
Internal Link Dist (ft)		59		51		221		175
Turn Bay Length (ft)					165		135	
Base Capacity (vph)	214	204	353	276	173	2752	173	2520
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.62	0.19	0.17	0.69	0.32	0.33	0.42

Intersection Summary

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

Queue shown is maximum after two cycles.

CambridgeSide Place at Lower Garage South Exit

HCM 6th TWSC
13: CambridgeSide Place & Lower Garage South Exit

2018 Existing Weekday Morning
10/23/2018

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↗
Traffic Vol, veh/h	0	99	161	0	5	4
Future Vol, veh/h	0	99	161	0	5	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	0	109	215	0	7	5

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 324 215
Stage 1	-	-	- 215 -
Stage 2	-	-	- 109 -
Critical Hdwy	-	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	-	-	- 3.5 3.3
Pot Cap-1 Maneuver	0	-	0 674 830
Stage 1	0	-	0 826 -
Stage 2	0	-	0 921 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 674 830
Mov Cap-2 Maneuver	-	-	- 674 -
Stage 1	-	-	- 826 -
Stage 2	-	-	- 921 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	674	830
HCM Lane V/C Ratio	-	-	0.01	0.006
HCM Control Delay (s)	-	-	10.4	9.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection

Int Delay, s/veh 6.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↗
Traffic Vol, veh/h	0	267	126	0	229	109
Future Vol, veh/h	0	267	126	0	229	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	75	75	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	300	168	0	246	117

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 468 168
Stage 1	-	-	- 168 -
Stage 2	-	-	- 300 -
Critical Hdwy	-	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	-	-	- 3.5 3.3
Pot Cap-1 Maneuver	0	-	0 557 881
Stage 1	0	-	0 867 -
Stage 2	0	-	0 756 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- 557 881
Mov Cap-2 Maneuver	-	-	- 557 -
Stage 1	-	-	- 867 -
Stage 2	-	-	- 756 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	557	881
HCM Lane V/C Ratio	-	-	0.442	0.133
HCM Control Delay (s)	-	-	16.5	9.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2.2	0.5

HCM 6th TWSC
13: CambridgeSide Place & Lower Garage South Exit

2018 Existing Saturday MIDDAY
10/23/2018

Intersection

Int Delay, s/veh 4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↗
Traffic Vol, veh/h	0	169	213	0	121	41
Future Vol, veh/h	0	169	213	0	121	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	84	84	79	79
Heavy Vehicles, %	0	2	0	0	0	0
Mvmt Flow	0	186	254	0	153	52

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 440 254
Stage 1	-	-	- 254 -
Stage 2	-	-	- 186 -
Critical Hdwy	-	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	-	-	- 3.5 3.3
Pot Cap-1 Maneuver	0	-	0 578 790
Stage 1	0	-	0 793 -
Stage 2	0	-	0 851 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 578 790
Mov Cap-2 Maneuver	-	-	- 578 -
Stage 1	-	-	- 793 -
Stage 2	-	-	- 851 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	578	790
HCM Lane V/C Ratio	-	-	0.265	0.066
HCM Control Delay (s)	-	-	13.5	9.9
HCM Lane LOS	-	-	B	A
HCM 95th %ile Q(veh)	-	-	1.1	0.2

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↗
Traffic Vol, veh/h	0	99	161	0	8	10
Future Vol, veh/h	0	99	161	0	8	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	0	109	215	0	11	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	324 215
Stage 1	-	-	-	-	215 -
Stage 2	-	-	-	-	109 -
Critical Hdwy	-	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	0	-	-	0	674 830
Stage 1	0	-	-	0	826 -
Stage 2	0	-	-	0	921 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	674 830
Mov Cap-2 Maneuver	-	-	-	-	674 -
Stage 1	-	-	-	-	826 -
Stage 2	-	-	-	-	921 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	674	830
HCM Lane V/C Ratio	-	-	0.016	0.016
HCM Control Delay (s)	-	-	10.4	9.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection

Int Delay, s/veh 6.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↗
Traffic Vol, veh/h	0	267	126	0	239	135
Future Vol, veh/h	0	267	126	0	239	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	75	75	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	300	168	0	257	145

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 468 168
Stage 1	-	-	- 168 -
Stage 2	-	-	- 300 -
Critical Hdwy	-	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	-	-	- 3.5 3.3
Pot Cap-1 Maneuver	0	-	0 557 881
Stage 1	0	-	0 867 -
Stage 2	0	-	0 756 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 557 881
Mov Cap-2 Maneuver	-	-	- 557 -
Stage 1	-	-	- 867 -
Stage 2	-	-	- 756 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	557	881
HCM Lane V/C Ratio	-	-	0.461	0.165
HCM Control Delay (s)	-	-	16.9	9.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2.4	0.6

Intersection

Int Delay, s/veh 3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↗
Traffic Vol, veh/h	0	169	213	0	103	34
Future Vol, veh/h	0	169	213	0	103	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	84	84	79	79
Heavy Vehicles, %	0	2	0	0	0	0
Mvmt Flow	0	186	254	0	130	43

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 440 254
Stage 1	-	-	- 254 -
Stage 2	-	-	- 186 -
Critical Hdwy	-	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	-	-	- 3.5 3.3
Pot Cap-1 Maneuver	0	-	0 578 790
Stage 1	0	-	0 793 -
Stage 2	0	-	0 851 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 578 790
Mov Cap-2 Maneuver	-	-	- 578 -
Stage 1	-	-	- 793 -
Stage 2	-	-	- 851 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	578	790
HCM Lane V/C Ratio	-	-	0.226	0.054
HCM Control Delay (s)	-	-	13	9.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.9	0.2

Intersection

Int Delay, s/veh 0.6

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations		↑	↑		↘	↗
Traffic Vol, veh/h	0	105	206	0	8	10
Future Vol, veh/h	0	105	206	0	8	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	0	115	275	0	11	13

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	-	0	-	0	390	275
Stage 1	-	-	-	-	275	-
Stage 2	-	-	-	-	115	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	618	769
Stage 1	0	-	-	0	776	-
Stage 2	0	-	-	0	915	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	618	769
Mov Cap-2 Maneuver	-	-	-	-	618	-
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	915	-

Approach EB WB SB

HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt EBT WBT SBLn1 SBLn2

Capacity (veh/h)	-	-	618	769
HCM Lane V/C Ratio	-	-	0.017	0.017
HCM Control Delay (s)	-	-	10.9	9.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

Intersection

Int Delay, s/veh 6.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↖	↗
Traffic Vol, veh/h	0	284	142	0	239	135
Future Vol, veh/h	0	284	142	0	239	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	75	75	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	319	189	0	257	145

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 508 189
Stage 1	-	-	- 189 -
Stage 2	-	-	- 319 -
Critical Hdwy	-	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	-	-	- 3.5 3.3
Pot Cap-1 Maneuver	0	-	0 528 858
Stage 1	0	-	0 848 -
Stage 2	0	-	0 741 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 528 858
Mov Cap-2 Maneuver	-	-	- 528 -
Stage 1	-	-	- 848 -
Stage 2	-	-	- 741 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	528	858
HCM Lane V/C Ratio	-	-	0.487	0.169
HCM Control Delay (s)	-	-	18.1	10
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	2.6	0.6

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↖	↗
Traffic Vol, veh/h	0	179	232	0	103	34
Future Vol, veh/h	0	179	232	0	103	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	84	84	79	79
Heavy Vehicles, %	0	2	0	0	0	0
Mvmt Flow	0	197	276	0	130	43

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 473 276
Stage 1	-	-	- 276 -
Stage 2	-	-	- 197 -
Critical Hdwy	-	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	-	-	- 3.5 3.3
Pot Cap-1 Maneuver	0	-	0 553 768
Stage 1	0	-	0 775 -
Stage 2	0	-	0 841 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 553 768
Mov Cap-2 Maneuver	-	-	- 553 -
Stage 1	-	-	- 775 -
Stage 2	-	-	- 841 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	553	768
HCM Lane V/C Ratio	-	-	0.236	0.056
HCM Control Delay (s)	-	-	13.5	10
HCM Lane LOS	-	-	B	B
HCM 95th %tile Q(veh)	-	-	0.9	0.2

First Street at CambridgeSide Place and Charles Street

Lanes, Volumes, Timings

2018 Existing Weekday Morning - Calibrated

3: First Street & Charles Street /CambridgeSide Place

11/07/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	66	48	68	0	139	0	238	25	33	190	0
Future Volume (vph)	16	66	48	68	0	139	0	238	25	33	190	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	13	13	13	13	13	13	14	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.950			0.909			0.987				
Flt Protected		0.994			0.984						0.993	
Satd. Flow (prot)	0	2014	0	0	1733	0	0	1838	0	0	1844	0
Flt Permitted		0.935			0.850						0.921	
Satd. Flow (perm)	0	1894	0	0	1497	0	0	1838	0	0	1711	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			137			7				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		152			259			180			386	
Travel Time (s)		3.5			5.9			4.1			8.8	
Peak Hour Factor	0.83	0.83	0.83	0.87	0.87	0.87	0.91	0.91	0.91	0.83	0.83	0.83
Heavy Vehicles (%)	8%	0%	0%	0%	0%	2%	0%	6%	0%	4%	10%	0%
Adj. Flow (vph)	19	80	58	78	0	160	0	262	27	40	229	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	157	0	0	238	0	0	289	0	0	269	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Detector Phase	4	4		8	8			2		6	6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0			23.0		23.0	23.0	
Total Split (s)	25.0	25.0		25.0	25.0			25.0		25.0	25.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%			33.8%		33.8%	33.8%	
Maximum Green (s)	20.0	20.0		20.0	20.0			20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.0			10.0			21.7			21.7	
Actuated g/C Ratio		0.19			0.19			0.41			0.41	
v/c Ratio		0.41			0.61			0.39			0.39	
Control Delay		20.2			17.8			17.8			18.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.2			17.8			17.8			18.5	
LOS		C			B			B			B	
Approach Delay		20.2			17.8			17.8			18.5	
Approach LOS		C			B			B			B	
Intersection Summary												
Area Type: Other												
Cycle Length: 74												
Actuated Cycle Length: 53.5												
Natural Cycle: 75												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.61												
Intersection Signal Delay: 18.4												
Intersection LOS: B												
Intersection Capacity Utilization 57.4%												
ICU Level of Service B												
Analysis Period (min) 15												

Splits and Phases: 3: First Street & Charles Street /CambridgeSide Place

 Ø2	 Ø4	 Ø9
25 s	25 s	24 s
 Ø6	 Ø8	
25 s	25 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	32%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	49
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2018 Existing Weekday Morning - Calibrated

3: First Street & Charles Street /CambridgeSide Place

11/07/2018

	→	←	↑	↓
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	157	238	289	269
v/c Ratio	0.41	0.61	0.39	0.39
Control Delay	20.2	17.8	17.8	18.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.2	17.8	17.8	18.5
Queue Length 50th (ft)	40	35	83	79
Queue Length 95th (ft)	78	89	171	149
Internal Link Dist (ft)	72	179	100	306
Turn Bay Length (ft)				
Base Capacity (vph)	792	689	750	694
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	0.20	0.35	0.39	0.39
Intersection Summary				

Lanes, Volumes, Timings

2018 Existing Weekday Evening - Calibrated

3: First Street & Charles Street /CambridgeSide Place

11/07/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	137	37	98	0	196	0	210	72	58	192	0
Future Volume (vph)	50	137	37	98	0	196	0	210	72	58	192	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	13	13	13	13	13	13	14	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.910			0.966				
Flt Protected		0.989			0.984						0.989	
Satd. Flow (prot)	0	2061	0	0	1741	0	0	1828	0	0	1902	0
Flt Permitted		0.817			0.747						0.763	
Satd. Flow (perm)	0	1703	0	0	1321	0	0	1828	0	0	1467	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			133			23			30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		152			259			180			386	
Travel Time (s)		3.5			5.9			4.1			8.8	
Peak Hour Factor	0.84	0.84	0.84	0.78	0.78	0.78	0.79	0.79	0.79	0.78	0.78	0.78
Heavy Vehicles (%)	2%	1%	0%	1%	0%	1%	0%	4%	3%	0%	7%	0%
Adj. Flow (vph)	60	163	44	126	0	251	0	266	91	74	246	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	267	0	0	377	0	0	357	0	0	320	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Detector Phase	4	4		8	8			2		6	6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	

Lanes, Volumes, Timings

2018 Existing Weekday Evening - Calibrated

3: First Street & Charles Street /CambridgeSide Place

11/07/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0			23.0		23.0	23.0	
Total Split (s)	25.0	25.0		25.0	25.0			25.0		25.0	25.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%			33.8%		33.8%	33.8%	
Maximum Green (s)	20.0	20.0		20.0	20.0			20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		17.0			17.0			21.4			21.4	
Actuated g/C Ratio		0.28			0.28			0.36			0.36	
v/c Ratio		0.55			0.81			0.54			0.61	
Control Delay		24.4			30.2			22.5			28.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		24.4			30.2			22.5			28.2	
LOS		C			C			C			C	
Approach Delay		24.4			30.2			22.5			28.2	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 74

Actuated Cycle Length: 60.1

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 26.5

Intersection LOS: C

Intersection Capacity Utilization 68.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: First Street & Charles Street /CambridgeSide Place

 Ø2	 Ø4	 Ø9
25 s	25 s	24 s
 Ø6	 Ø8	
25 s	25 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	24.0
Total Split (%)	32%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	49
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2018 Existing Weekday Evening - Calibrated

3: First Street & Charles Street /CambridgeSide Place

11/07/2018

	→	←	↑	↓
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	267	377	357	320
v/c Ratio	0.55	0.81	0.54	0.61
Control Delay	24.4	30.2	22.5	28.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	24.4	30.2	22.5	28.2
Queue Length 50th (ft)	96	102	132	131
Queue Length 95th (ft)	153	#164	183	#186
Internal Link Dist (ft)	72	179	100	306
Turn Bay Length (ft)				
Base Capacity (vph)	615	556	666	522
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	0.43	0.68	0.54	0.61

Intersection Summary

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

Lanes, Volumes, Timings

2018 Existing Saturday Midday - Calibrated

3: First Street & Charles Street /CambridgeSide Place

11/07/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	85	23	74	0	244	0	104	28	79	41	0
Future Volume (vph)	45	85	23	74	0	244	0	104	28	79	41	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	13	13	13	13	13	13	14	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.896			0.971				
Flt Protected		0.986			0.989						0.968	
Satd. Flow (prot)	0	2058	0	0	1740	0	0	1848	0	0	1893	0
Flt Permitted		0.686			0.864						0.743	
Satd. Flow (perm)	0	1432	0	0	1520	0	0	1848	0	0	1453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			220			18				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		152			259			180			386	
Travel Time (s)		3.5			5.9			4.1			8.8	
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.91	0.91	0.91	0.83	0.83	0.83
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	4%	0%	5%	1%	0%
Adj. Flow (vph)	56	106	29	83	0	274	0	114	31	95	49	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	191	0	0	357	0	0	145	0	0	144	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Detector Phase	4	4		8	8			2		6	6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0			23.0		23.0	23.0	
Total Split (s)	25.0	25.0		25.0	25.0			25.0		25.0	25.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%			33.8%		33.8%	33.8%	
Maximum Green (s)	20.0	20.0		20.0	20.0			20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		12.3			12.3			21.8			21.8	
Actuated g/C Ratio		0.22			0.22			0.39			0.39	
v/c Ratio		0.59			0.71			0.20			0.25	
Control Delay		28.4			17.6			16.4			19.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		28.4			17.6			16.4			19.3	
LOS		C			B			B			B	
Approach Delay		28.4			17.6			16.4			19.3	
Approach LOS		C			B			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 74

Actuated Cycle Length: 55.8

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 20.2

Intersection LOS: C

Intersection Capacity Utilization 49.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: First Street & Charles Street /CambridgeSide Place

 Ø2	 Ø4	 Ø9
25 s	25 s	24 s
 Ø6	 Ø8	
25 s	25 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	24.0
Total Split (%)	32%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	49
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2018 Existing Saturday Midday - Calibrated

3: First Street & Charles Street /CambridgeSide Place

11/07/2018

	→	←	↑	↓
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	191	357	145	144
v/c Ratio	0.59	0.71	0.20	0.25
Control Delay	28.4	17.6	16.4	19.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	28.4	17.6	16.4	19.3
Queue Length 50th (ft)	66	48	37	43
Queue Length 95th (ft)	107	128	88	90
Internal Link Dist (ft)	72	179	100	306
Turn Bay Length (ft)				
Base Capacity (vph)	566	727	732	566
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	0.34	0.49	0.20	0.25
Intersection Summary				

Lanes, Volumes, Timings

2018 Build Weekday Morning - Calibrated

3: First Street & Charles Street /CambridgeSide Place

11/07/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	66	48	70	0	143	0	243	25	33	190	0
Future Volume (vph)	27	66	48	70	0	143	0	243	25	33	190	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	13	13	13	13	13	13	14	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.954			0.909			0.988				
Flt Protected		0.990			0.984						0.993	
Satd. Flow (prot)	0	2003	0	0	1733	0	0	1840	0	0	1844	0
Flt Permitted		0.876			0.834						0.920	
Satd. Flow (perm)	0	1772	0	0	1469	0	0	1840	0	0	1709	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			137			7			30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		152			259			180			386	
Travel Time (s)		3.5			5.9			4.1			8.8	
Peak Hour Factor	0.83	0.83	0.83	0.87	0.87	0.87	0.91	0.91	0.91	0.83	0.83	0.83
Heavy Vehicles (%)	8%	0%	0%	0%	0%	2%	0%	6%	0%	4%	10%	0%
Adj. Flow (vph)	33	80	58	80	0	164	0	267	27	40	229	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	171	0	0	244	0	0	294	0	0	269	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Detector Phase	4	4		8	8			2		6	6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0			23.0		23.0	23.0	
Total Split (s)	25.0	25.0		25.0	25.0			25.0		25.0	25.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%			33.8%		33.8%	33.8%	
Maximum Green (s)	20.0	20.0		20.0	20.0			20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.5			10.5			21.8			21.8	
Actuated g/C Ratio		0.19			0.19			0.40			0.40	
v/c Ratio		0.46			0.62			0.39			0.39	
Control Delay		22.0			18.2			18.2			18.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		22.0			18.2			18.2			18.8	
LOS		C			B			B			B	
Approach Delay		22.0			18.2			18.2			18.8	
Approach LOS		C			B			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 74

Actuated Cycle Length: 54

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 19.0

Intersection LOS: B

Intersection Capacity Utilization 58.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: First Street & Charles Street /CambridgeSide Place

 Ø2	 Ø4	 Ø9
25 s	25 s	24 s
 Ø6	 Ø8	
25 s	25 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	32%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	49
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2018 Build Weekday Morning - Calibrated

3: First Street & Charles Street /CambridgeSide Place

11/07/2018



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	171	244	294	269
v/c Ratio	0.46	0.62	0.39	0.39
Control Delay	22.0	18.2	18.2	18.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	22.0	18.2	18.2	18.8
Queue Length 50th (ft)	47	37	86	80
Queue Length 95th (ft)	88	93	176	151
Internal Link Dist (ft)	72	179	100	306
Turn Bay Length (ft)				
Base Capacity (vph)	733	673	745	688
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	0.23	0.36	0.39	0.39

Intersection Summary

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	137	37	106	0	214	0	207	72	58	192	0
Future Volume (vph)	52	137	37	106	0	214	0	207	72	58	192	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	13	13	13	13	13	13	14	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.910			0.965				
Flt Protected		0.989			0.984						0.989	
Satd. Flow (prot)	0	2061	0	0	1741	0	0	1826	0	0	1902	0
Flt Permitted		0.811			0.754						0.732	
Satd. Flow (perm)	0	1690	0	0	1334	0	0	1826	0	0	1408	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			134			23			30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		152			259			180			386	
Travel Time (s)		3.5			5.9			4.1			8.8	
Peak Hour Factor	0.84	0.84	0.84	0.78	0.78	0.78	0.79	0.79	0.79	0.78	0.78	0.78
Heavy Vehicles (%)	2%	1%	0%	1%	0%	1%	0%	4%	3%	0%	7%	0%
Adj. Flow (vph)	62	163	44	136	0	274	0	262	91	74	246	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	269	0	0	410	0	0	353	0	0	320	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Detector Phase	4	4		8	8			2		6	6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	

Lanes, Volumes, Timings

2018 Build Weekday Evening - Calibrated

3: First Street & Charles Street /CambridgeSide Place

11/07/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0			23.0		23.0	23.0	
Total Split (s)	25.0	25.0		25.0	25.0			25.0		25.0	25.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%			33.8%		33.8%	33.8%	
Maximum Green (s)	20.0	20.0		20.0	20.0			20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		18.9			18.9			21.0			21.0	
Actuated g/C Ratio		0.31			0.31			0.34			0.34	
v/c Ratio		0.51			0.82			0.56			0.67	
Control Delay		23.3			31.4			23.1			31.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		23.3			31.4			23.1			31.0	
LOS		C			C			C			C	
Approach Delay		23.3			31.4			23.1			31.0	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 74

Actuated Cycle Length: 61.7

Natural Cycle: 80

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 27.6

Intersection LOS: C

Intersection Capacity Utilization 70.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: First Street & Charles Street /CambridgeSide Place

 Ø2	 Ø4	 Ø9
25 s	25 s	24 s
 Ø6	 Ø8	
25 s	25 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	24.0
Total Split (%)	32%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	49
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2018 Build Weekday Evening - Calibrated

3: First Street & Charles Street /CambridgeSide Place

11/07/2018



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	269	410	353	320
v/c Ratio	0.51	0.82	0.56	0.67
Control Delay	23.3	31.4	23.1	31.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.3	31.4	23.1	31.0
Queue Length 50th (ft)	97	119	130	132
Queue Length 95th (ft)	154	#208	181	#205
Internal Link Dist (ft)	72	179	100	306
Turn Bay Length (ft)				
Base Capacity (vph)	582	541	635	478
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	0.46	0.76	0.56	0.67

Intersection Summary

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

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	68	18	72	0	239	0	97	28	79	41	0
Future Volume (vph)	48	68	18	72	0	239	0	97	28	79	41	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	13	13	13	13	13	13	14	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.896			0.970				
Flt Protected		0.982			0.989						0.968	
Satd. Flow (prot)	0	2056	0	0	1740	0	0	1847	0	0	1893	0
Flt Permitted		0.628			0.883						0.748	
Satd. Flow (perm)	0	1315	0	0	1553	0	0	1847	0	0	1463	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			221			19				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		152			259			180			386	
Travel Time (s)		3.5			5.9			4.1			8.8	
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.91	0.91	0.91	0.83	0.83	0.83
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	4%	0%	5%	1%	0%
Adj. Flow (vph)	60	85	23	81	0	269	0	107	31	95	49	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	168	0	0	350	0	0	138	0	0	144	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Detector Phase	4	4		8	8			2		6	6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	

Lanes, Volumes, Timings

2018 Build Saturday Midday - Calibrated

3: First Street & Charles Street /CambridgeSide Place

11/07/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0			23.0		23.0	23.0	
Total Split (s)	25.0	25.0		25.0	25.0			25.0		25.0	25.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%			33.8%		33.8%	33.8%	
Maximum Green (s)	20.0	20.0		20.0	20.0			20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		11.9			11.9			21.8			21.8	
Actuated g/C Ratio		0.21			0.21			0.39			0.39	
v/c Ratio		0.58			0.69			0.19			0.25	
Control Delay		29.1			16.8			16.0			19.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		29.1			16.8			16.0			19.1	
LOS		C			B			B			B	
Approach Delay		29.1			16.8			16.0			19.1	
Approach LOS		C			B			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 74

Actuated Cycle Length: 55.5

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 19.6

Intersection LOS: B

Intersection Capacity Utilization 47.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: First Street & Charles Street /CambridgeSide Place

 Ø2	 Ø4	 Ø9
25 s	25 s	24 s
 Ø6	 Ø8	
25 s	25 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	24.0
Total Split (%)	32%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	49
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2018 Build Saturday Midday - Calibrated

3: First Street & Charles Street /CambridgeSide Place

11/07/2018



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	168	350	138	144
v/c Ratio	0.58	0.69	0.19	0.25
Control Delay	29.1	16.8	16.0	19.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	29.1	16.8	16.0	19.1
Queue Length 50th (ft)	57	45	34	42
Queue Length 95th (ft)	96	121	84	90
Internal Link Dist (ft)	72	179	100	306
Turn Bay Length (ft)				
Base Capacity (vph)	523	744	737	574
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	0.32	0.47	0.19	0.25
Intersection Summary				

Lanes, Volumes, Timings

2023 Future Weekday Morning

3: First Street & Charles Street /CambridgeSide Place

11/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	56	54	58	0	158	0	327	22	27	282	0
Future Volume (vph)	90	56	54	58	0	158	0	327	22	27	282	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	13	13	13	13	13	13	14	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.901			0.992				
Flt Protected		0.978			0.987						0.996	
Satd. Flow (prot)	0	1958	0	0	1721	0	0	1844	0	0	1844	0
Flt Permitted		0.701			0.842						0.943	
Satd. Flow (perm)	0	1403	0	0	1468	0	0	1844	0	0	1746	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			181			4				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		152			259			180			386	
Travel Time (s)		3.5			5.9			4.1			8.8	
Peak Hour Factor	0.83	0.83	0.83	0.87	0.87	0.87	0.91	0.91	0.91	0.83	0.83	0.83
Heavy Vehicles (%)	8%	0%	0%	0%	0%	2%	0%	6%	0%	4%	10%	0%
Adj. Flow (vph)	108	67	65	67	0	182	0	359	24	33	340	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	240	0	0	249	0	0	383	0	0	373	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Detector Phase	4	4		8	8			2		6	6	

Lanes, Volumes, Timings
3: First Street & Charles Street /CambridgeSide Place

2023 Future Weekday Morning
11/12/2018

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	

Lanes, Volumes, Timings
3: First Street & Charles Street /CambridgeSide Place

2023 Future Weekday Morning
11/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0			23.0		23.0	23.0	
Total Split (s)	25.0	25.0		25.0	25.0			25.0		25.0	25.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%			33.8%		33.8%	33.8%	
Maximum Green (s)	20.0	20.0		20.0	20.0			20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		14.1			14.1			21.8			21.8	
Actuated g/C Ratio		0.24			0.24			0.38			0.38	
v/c Ratio		0.66			0.50			0.55			0.57	
Control Delay		29.1			11.1			23.5			24.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		29.1			11.1			23.5			24.6	
LOS		C			B			C			C	
Approach Delay		29.1			11.1			23.5			24.6	
Approach LOS		C			B			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 74

Actuated Cycle Length: 57.7

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 22.4

Intersection LOS: C

Intersection Capacity Utilization 64.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: First Street & Charles Street /CambridgeSide Place

 Ø2	 Ø4	 Ø9
25 s	25 s	24 s
 Ø6	 Ø8	
25 s	25 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	32%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	49
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues
3: First Street & Charles Street /CambridgeSide Place

2023 Future Weekday Morning
11/12/2018

	→	←	↑	↓
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	240	249	383	373
v/c Ratio	0.66	0.50	0.55	0.57
Control Delay	29.1	11.1	23.5	24.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	29.1	11.1	23.5	24.6
Queue Length 50th (ft)	82	23	139	138
Queue Length 95th (ft)	136	74	#276	#228
Internal Link Dist (ft)	72	179	100	306
Turn Bay Length (ft)				
Base Capacity (vph)	545	667	699	660
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	0.44	0.37	0.55	0.57

Intersection Summary

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

Lanes, Volumes, Timings
3: First Street & Charles Street /CambridgeSide Place

2023 Future Weekday Evening

11/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	145	46	88	0	189	0	282	79	60	358	0
Future Volume (vph)	74	145	46	88	0	189	0	282	79	60	358	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	13	13	13	13	13	13	14	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.908			0.970				
Flt Protected		0.986			0.984						0.993	
Satd. Flow (prot)	0	2052	0	0	1737	0	0	1835	0	0	1899	0
Flt Permitted		0.746			0.723						0.656	
Satd. Flow (perm)	0	1552	0	0	1276	0	0	1835	0	0	1254	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			143			19				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		152			259			180			386	
Travel Time (s)		3.5			5.9			4.1			8.8	
Peak Hour Factor	0.84	0.84	0.84	0.78	0.78	0.78	0.79	0.79	0.79	0.78	0.78	0.78
Heavy Vehicles (%)	2%	1%	0%	1%	0%	1%	0%	4%	3%	0%	7%	0%
Adj. Flow (vph)	88	173	55	113	0	242	0	357	100	77	459	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	316	0	0	355	0	0	457	0	0	536	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Detector Phase	4	4		8	8			2		6	6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	

Lanes, Volumes, Timings
3: First Street & Charles Street /CambridgeSide Place

2023 Future Weekday Evening
11/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0			23.0		23.0	23.0	
Total Split (s)	25.0	25.0		25.0	25.0			25.0		25.0	25.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%			33.8%		33.8%	33.8%	
Maximum Green (s)	20.0	20.0		20.0	20.0			20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		16.2			16.2			21.6			21.6	
Actuated g/C Ratio		0.27			0.27			0.36			0.36	
v/c Ratio		0.73			0.79			0.68			1.18	
Control Delay		32.4			28.1			27.6			129.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		32.4			28.1			27.6			129.1	
LOS		C			C			C			F	
Approach Delay		32.4			28.1			27.6			129.1	
Approach LOS		C			C			C			F	

Intersection Summary

Area Type: Other

Cycle Length: 74

Actuated Cycle Length: 59.5

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 61.3

Intersection LOS: E

Intersection Capacity Utilization 77.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: First Street & Charles Street /CambridgeSide Place

 Ø2	 Ø4	 Ø9
25 s	25 s	24 s
 Ø6	 Ø8	
25 s	25 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	24.0
Total Split (%)	32%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	49
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues
3: First Street & Charles Street /CambridgeSide Place

2023 Future Weekday Evening
11/12/2018



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	316	355	457	536
v/c Ratio	0.73	0.79	0.68	1.18
Control Delay	32.4	28.1	27.6	129.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	32.4	28.1	27.6	129.1
Queue Length 50th (ft)	121	86	185	~342
Queue Length 95th (ft)	189	141	#274	#429
Internal Link Dist (ft)	72	179	100	306
Turn Bay Length (ft)				
Base Capacity (vph)	571	553	677	454
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	0.55	0.64	0.68	1.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
3: First Street & Charles Street /CambridgeSide Place

2023 Future Saturday Middy

11/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	72	28	59	0	207	0	141	25	82	123	0
Future Volume (vph)	69	72	28	59	0	207	0	141	25	82	123	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	13	13	13	13	13	13	14	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.978			0.895			0.980				
Flt Protected		0.980			0.989						0.980	
Satd. Flow (prot)	0	2046	0	0	1738	0	0	1861	0	0	1936	0
Flt Permitted		0.652			0.873						0.807	
Satd. Flow (perm)	0	1361	0	0	1534	0	0	1861	0	0	1594	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			233			12				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		152			259			180			386	
Travel Time (s)		3.5			5.9			4.1			8.8	
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.91	0.91	0.91	0.83	0.83	0.83
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	4%	0%	5%	1%	0%
Adj. Flow (vph)	86	90	35	66	0	233	0	155	27	99	148	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	211	0	0	299	0	0	182	0	0	247	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Detector Phase	4	4		8	8			2		6	6	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	

Lanes, Volumes, Timings
3: First Street & Charles Street /CambridgeSide Place

2023 Future Saturday Midday

11/12/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0			23.0		23.0	23.0	
Total Split (s)	25.0	25.0		25.0	25.0			25.0		25.0	25.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%			33.8%		33.8%	33.8%	
Maximum Green (s)	20.0	20.0		20.0	20.0			20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		13.3			13.3			21.8			21.8	
Actuated g/C Ratio		0.23			0.23			0.38			0.38	
v/c Ratio		0.64			0.56			0.25			0.40	
Control Delay		30.3			10.7			17.9			21.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		30.3			10.7			17.9			21.0	
LOS		C			B			B			C	
Approach Delay		30.3			10.7			17.9			21.0	
Approach LOS		C			B			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 74

Actuated Cycle Length: 56.8

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 19.2

Intersection LOS: B

Intersection Capacity Utilization 50.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: First Street & Charles Street /CambridgeSide Place

 Ø2	 Ø4	 Ø9
25 s	25 s	24 s
 Ø6	 Ø8	
25 s	25 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	22.0
Total Split (s)	24.0
Total Split (%)	32%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	49
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Queues

2023 Future Saturday Midday

3: First Street & Charles Street /CambridgeSide Place

11/12/2018

	→	←	↑	↓
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	211	299	182	247
v/c Ratio	0.64	0.56	0.25	0.40
Control Delay	30.3	10.7	17.9	21.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.3	10.7	17.9	21.0
Queue Length 50th (ft)	74	22	53	82
Queue Length 95th (ft)	119	82	111	147
Internal Link Dist (ft)	72	179	100	306
Turn Bay Length (ft)				
Base Capacity (vph)	529	731	720	610
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	0.40	0.41	0.25	0.40
Intersection Summary				

First Street at Upper Garage Entrance/Exit and Spring Street

HCM 6th TWSC
15: First Street & Spring Street /Upper Garage Entrance/Exit

2018 Existing Weekday Morning
10/23/2018

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	1	0	123	145	19	13	219	225
Future Vol, veh/h	0	0	0	1	1	0	123	145	19	13	219	225
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	75	75	75	85	85	85	83	83	83
Heavy Vehicles, %	2	2	2	0	0	0	2	10	0	0	8	0
Mvmt Flow	0	0	0	1	1	0	145	171	22	16	264	271

Major/Minor	Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	904	1039	182	535	0	0	193	0	0	0
Stage 1	472	472	-	-	-	-	-	-	-	-
Stage 2	432	567	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	4.12	-	-	4.1	-	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.218	-	-	2.2	-	-	-
Pot Cap-1 Maneuver	310	232	866	1033	-	-	1392	-	-	-
Stage 1	632	562	-	-	-	-	-	-	-	-
Stage 2	659	510	-	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-	-
Mov Cap-1 Maneuver	257	0	866	1033	-	-	1392	-	-	-
Mov Cap-2 Maneuver	257	0	-	-	-	-	-	-	-	-
Stage 1	523	0	-	-	-	-	-	-	-	-
Stage 2	659	0	-	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.2	3.9	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT	SBR
Capacity (veh/h)	1033	-	-	257	1392	-
HCM Lane V/C Ratio	0.14	-	-	0.01	0.011	-
HCM Control Delay (s)	9.1	0	-	19.2	7.6	0
HCM Lane LOS	A	A	-	C	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	0	-

HCM 6th TWSC
15: First Street & Spring Street /Upper Garage Entrance/Exit

2018 Existing Weekday Evening
10/23/2018

Intersection

Int Delay, s/veh 2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	21	10	36	43	293	19	45	201	74
Future Vol, veh/h	0	0	0	21	10	36	43	293	19	45	201	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	75	75	75	83	83	83	81	81	81
Heavy Vehicles, %	2	2	2	0	0	0	2	3	0	0	7	0
Mvmt Flow	0	0	0	28	13	48	52	353	23	56	248	91

Major/Minor	Minor1		Major1		Major2					
Conflicting Flow All	875	920	365	339	0	0	376	0	0	
Stage 1	469	469	-	-	-	-	-	-	-	
Stage 2	406	451	-	-	-	-	-	-	-	
Critical Hdwy	6.4	6.5	6.2	4.12	-	-	4.1	-	-	
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-	
Follow-up Hdwy	3.5	4	3.3	2.218	-	-	2.2	-	-	
Pot Cap-1 Maneuver	322	273	685	1220	-	-	1194	-	-	
Stage 1	634	564	-	-	-	-	-	-	-	
Stage 2	677	574	-	-	-	-	-	-	-	
Platoon blocked, %					-	-		-	-	
Mov Cap-1 Maneuver	287	0	685	1220	-	-	1194	-	-	
Mov Cap-2 Maneuver	287	0	-	-	-	-	-	-	-	
Stage 1	564	0	-	-	-	-	-	-	-	
Stage 2	677	0	-	-	-	-	-	-	-	

Approach	WB	NB	SB
HCM Control Delay, s	14.9	1	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT	SBR
Capacity (veh/h)	1220	-	-	453	1194	-
HCM Lane V/C Ratio	0.042	-	-	0.197	0.047	-
HCM Control Delay (s)	8.1	0	-	14.9	8.2	0
HCM Lane LOS	A	A	-	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.1	-

HCM 6th TWSC
15: First Street & Spring Street /Upper Garage Entrance/Exit

2018 Existing Saturday MIDDAY

10/23/2018

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	18	13	30	38	190	43	72	110	64
Future Vol, veh/h	0	0	0	18	13	30	38	190	43	72	110	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	95	95	95	95	95	95	90	90	90
Heavy Vehicles, %	2	2	2	0	0	0	0	3	2	0	4	0
Mvmt Flow	0	0	0	19	14	32	40	200	45	80	122	71

Major/Minor	Minor1	Major1	Major2									
Conflicting Flow All	621	656	223	193	0	0	245	0	0			
Stage 1	303	303	-	-	-	-	-	-	-			
Stage 2	318	353	-	-	-	-	-	-	-			
Critical Hdwy	6.4	6.5	6.2	4.1	-	-	4.1	-	-			
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-			
Follow-up Hdwy	3.5	4	3.3	2.2	-	-	2.2	-	-			
Pot Cap-1 Maneuver	454	388	822	1392	-	-	1333	-	-			
Stage 1	754	667	-	-	-	-	-	-	-			
Stage 2	742	634	-	-	-	-	-	-	-			
Platoon blocked, %					-	-		-	-			
Mov Cap-1 Maneuver	409	0	822	1392	-	-	1333	-	-			
Mov Cap-2 Maneuver	409	0	-	-	-	-	-	-	-			
Stage 1	679	0	-	-	-	-	-	-	-			
Stage 2	742	0	-	-	-	-	-	-	-			

Approach	WB	NB	SB
HCM Control Delay, s	11.8	1.1	2.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT	SBR
Capacity (veh/h)	1392	-	-	596	1333	-
HCM Lane V/C Ratio	0.029	-	-	0.108	0.06	-
HCM Control Delay (s)	7.7	0	-	11.8	7.9	0
HCM Lane LOS	A	A	-	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.2	-

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	1	1	0	123	149	19	13	231	225
Future Vol, veh/h	0	0	0	1	1	0	123	149	19	13	231	225
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	75	75	75	85	85	85	83	83	83
Heavy Vehicles, %	2	2	2	0	0	0	2	10	0	0	8	0
Mvmt Flow	0	0	0	1	1	0	145	175	22	16	278	271

Major/Minor	Minor1		Major1		Major2		Major2		Major2		Major2	
Conflicting Flow All	922	1057	186	549	0	0	197	0	0			
Stage 1	476	476	-	-	-	-	-	-	-	-	-	-
Stage 2	446	581	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	4.12	-	-	4.1	-	-	-	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.218	-	-	2.2	-	-	-	-	-
Pot Cap-1 Maneuver	302	227	861	1021	-	-	1388	-	-	-	-	-
Stage 1	629	560	-	-	-	-	-	-	-	-	-	-
Stage 2	649	503	-	-	-	-	-	-	-	-	-	-
Platoon blocked, %					-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	249	0	861	1021	-	-	1388	-	-	-	-	-
Mov Cap-2 Maneuver	249	0	-	-	-	-	-	-	-	-	-	-
Stage 1	520	0	-	-	-	-	-	-	-	-	-	-
Stage 2	649	0	-	-	-	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.6	3.8	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT	SBR
Capacity (veh/h)	1021	-	-	249	1388	-
HCM Lane V/C Ratio	0.142	-	-	0.011	0.011	-
HCM Control Delay (s)	9.1	0	-	19.6	7.6	0
HCM Lane LOS	A	A	-	C	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	0	-

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	21	10	36	46	308	19	45	201	74
Future Vol, veh/h	0	0	0	21	10	36	46	308	19	45	201	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	75	75	75	83	83	83	81	81	81
Heavy Vehicles, %	2	2	2	0	0	0	2	3	0	0	7	0
Mvmt Flow	0	0	0	28	13	48	55	371	23	56	248	91

Major/Minor	Minor1		Major1		Major2		Major2		Major2		Major2	
Conflicting Flow All	899	944	383	339	0	0	394	0	0	0	0	0
Stage 1	493	493	-	-	-	-	-	-	-	-	-	-
Stage 2	406	451	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	4.12	-	-	4.1	-	-	-	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.218	-	-	2.2	-	-	-	-	-
Pot Cap-1 Maneuver	312	264	669	1220	-	-	1176	-	-	-	-	-
Stage 1	618	550	-	-	-	-	-	-	-	-	-	-
Stage 2	677	574	-	-	-	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-	-	-	-
Mov Cap-1 Maneuver	276	0	669	1220	-	-	1176	-	-	-	-	-
Mov Cap-2 Maneuver	276	0	-	-	-	-	-	-	-	-	-	-
Stage 1	548	0	-	-	-	-	-	-	-	-	-	-
Stage 2	677	0	-	-	-	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	1	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT	SBR
Capacity (veh/h)	1220	-	-	439	1176	-
HCM Lane V/C Ratio	0.045	-	-	0.203	0.047	-
HCM Control Delay (s)	8.1	0	-	15.3	8.2	0
HCM Lane LOS	A	A	-	C	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.1	-

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	18	13	30	39	184	43	72	109	64
Future Vol, veh/h	0	0	0	18	13	30	39	184	43	72	109	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	95	95	95	95	95	95	90	90	90
Heavy Vehicles, %	2	2	2	0	0	0	0	3	2	0	4	0
Mvmt Flow	0	0	0	19	14	32	41	194	45	80	121	71

Major/Minor	Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	616	651	217	192	0	0	239	0	0	0
Stage 1	299	299	-	-	-	-	-	-	-	-
Stage 2	317	352	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	4.1	-	-	4.1	-	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.2	-	-	2.2	-	-	-
Pot Cap-1 Maneuver	457	390	828	1394	-	-	1340	-	-	-
Stage 1	757	670	-	-	-	-	-	-	-	-
Stage 2	743	635	-	-	-	-	-	-	-	-
Platoon blocked, %					-	-	-	-	-	-
Mov Cap-1 Maneuver	412	0	828	1394	-	-	1340	-	-	-
Mov Cap-2 Maneuver	412	0	-	-	-	-	-	-	-	-
Stage 1	682	0	-	-	-	-	-	-	-	-
Stage 2	743	0	-	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	1.1	2.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT	SBR
Capacity (veh/h)	1394	-	-	601	1340	-
HCM Lane V/C Ratio	0.029	-	-	0.107	0.06	-
HCM Control Delay (s)	7.7	0	-	11.7	7.9	0
HCM Lane LOS	A	A	-	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.2	-

Intersection

Int Delay, s/veh 2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	1	1	0	246	269	19	13	349	292
Future Vol, veh/h	0	0	0	1	1	0	246	269	19	13	349	292
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	75	75	75	85	85	85	83	83	83
Heavy Vehicles, %	2	2	2	0	0	0	2	10	0	0	8	0
Mvmt Flow	0	0	0	1	1	0	289	316	22	16	420	352

Major/Minor	Minor1		Major1		Major2					
Conflicting Flow All	1533	1709	327	772	0	0	338	0	0	
Stage 1	905	905	-	-	-	-	-	-	-	
Stage 2	628	804	-	-	-	-	-	-	-	
Critical Hdwy	6.4	6.5	6.2	4.12	-	-	4.1	-	-	
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-	
Follow-up Hdwy	3.5	4	3.3	2.218	-	-	2.2	-	-	
Pot Cap-1 Maneuver	130	92	719	843	-	-	1232	-	-	
Stage 1	398	358	-	-	-	-	-	-	-	
Stage 2	536	398	-	-	-	-	-	-	-	
Platoon blocked, %					-	-		-	-	
Mov Cap-1 Maneuver	73	0	719	843	-	-	1232	-	-	
Mov Cap-2 Maneuver	73	0	-	-	-	-	-	-	-	
Stage 1	224	0	-	-	-	-	-	-	-	
Stage 2	536	0	-	-	-	-	-	-	-	

Approach	WB	NB	SB
HCM Control Delay, s	56.2	5.3	0.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT	SBR
Capacity (veh/h)	843	-	-	73	1232	-
HCM Lane V/C Ratio	0.343	-	-	0.037	0.013	-
HCM Control Delay (s)	11.5	0	-	56.2	8	0
HCM Lane LOS	B	A	-	F	A	A
HCM 95th %tile Q(veh)	1.5	-	-	0.1	0	-

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	21	10	36	79	411	19	45	399	93
Future Vol, veh/h	0	0	0	21	10	36	79	411	19	45	399	93
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	75	75	75	83	83	83	81	81	81
Heavy Vehicles, %	2	2	2	0	0	0	2	3	0	0	7	0
Mvmt Flow	0	0	0	28	13	48	95	495	23	56	493	115

Major/Minor	Minor1		Major1		Major2		Major2		Major2		Major2	
Conflicting Flow All	1360	1417	507	608	0	0	518	0	0			
Stage 1	697	697	-	-	-	-	-	-	-	-	-	-
Stage 2	663	720	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	4.12	-	-	4.1	-	-	-	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	2.218	-	-	2.2	-	-	-	-	-
Pot Cap-1 Maneuver	165	138	570	970	-	-	1058	-	-	-	-	-
Stage 1	498	446	-	-	-	-	-	-	-	-	-	-
Stage 2	516	435	-	-	-	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-	-	-	-
Mov Cap-1 Maneuver	131	0	570	970	-	-	1058	-	-	-	-	-
Mov Cap-2 Maneuver	131	0	-	-	-	-	-	-	-	-	-	-
Stage 1	394	0	-	-	-	-	-	-	-	-	-	-
Stage 2	516	0	-	-	-	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.5	1.4	0.7
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT	SBR
Capacity (veh/h)	970	-	-	255	1058	-
HCM Lane V/C Ratio	0.098	-	-	0.35	0.053	-
HCM Control Delay (s)	9.1	0	-	26.5	8.6	0
HCM Lane LOS	A	A	-	D	A	A
HCM 95th %tile Q(veh)	0.3	-	-	1.5	0.2	-

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	18	13	30	67	267	43	72	194	79
Future Vol, veh/h	0	0	0	18	13	30	67	267	43	72	194	79
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	95	95	95	95	95	95	90	90	90
Heavy Vehicles, %	2	2	2	0	0	0	0	3	2	0	4	0
Mvmt Flow	0	0	0	19	14	32	71	281	45	80	216	88

Major/Minor	Minor1		Major1		Major2					
Conflicting Flow All	866	910	304	304	0	0	326	0	0	
Stage 1	446	446	-	-	-	-	-	-	-	
Stage 2	420	464	-	-	-	-	-	-	-	
Critical Hdwy	6.4	6.5	6.2	4.1	-	-	4.1	-	-	
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-	
Follow-up Hdwy	3.5	4	3.3	2.2	-	-	2.2	-	-	
Pot Cap-1 Maneuver	326	277	740	1268	-	-	1245	-	-	
Stage 1	649	577	-	-	-	-	-	-	-	
Stage 2	667	567	-	-	-	-	-	-	-	
Platoon blocked, %					-	-	-	-	-	
Mov Cap-1 Maneuver	280	0	740	1268	-	-	1245	-	-	
Mov Cap-2 Maneuver	280	0	-	-	-	-	-	-	-	
Stage 1	557	0	-	-	-	-	-	-	-	
Stage 2	667	0	-	-	-	-	-	-	-	

Approach	WB	NB	SB
HCM Control Delay, s	14.1	1.4	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT	SBR
Capacity (veh/h)	1268	-	-	458	1245	-
HCM Lane V/C Ratio	0.056	-	-	0.14	0.064	-
HCM Control Delay (s)	8	0	-	14.1	8.1	0
HCM Lane LOS	A	A	-	B	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.2	-

PEDESTRIAN ANALYSIS

PEDESTRIAN WORKSHEET

General Information		Site Information	
Analyst	DIR	Facility	Land Boulevard at CambridgeSide Place
Agency or Company	VAI	Jurisdiction	Cambridge, MA
Date Performed	10/24/2018	Analysis Year	2018 Existing
Analysis Time Period	AM		
☐ Operational (LOS) ☐ Design (W_E)		☐ Planning (LOS) ☐ Planning (W_E)	
Crossings at Signalized Intersections			
Pedestrian Delay at Signalized Intersections	1	2	
Cycle length, C (s)	125	125	
Effective green time for pedestrians, g (s)	29	29	
Average delay, d_p	36.9	36.9	
LOS at signalized intersections (Exhibit 18-9)	D	D	
Signalized Intersection Identification			
Intersection #	Major Street at Minor Street		
1	Land Boulevard* at CambridgeSide Place		
2	Land Boulevard at CambridgeSide Place*		

* - Street which pedestrians are crossing

[illegible]

* - Street which pedestrians are crossing

PEDESTRIAN WORKSHEET

General Information		Site Information	
Analyst	DIR	Facility	Land Boulevard at CambridgeSide Place
Agency or Company	VAI	Jurisdiction	Cambridge, MA
Date Performed	10/24/2018	Analysis Year	2018 Existing
Analysis Time Period	SAT		
☐ Operational (LOS) ☐ Design (W_E)		☐ Planning (LOS) ☐ Planning (W_E)	
Crossings at Signalized Intersections			
Pedestrian Delay at Signalized Intersections	1	2	
Cycle length, C (s)	125	125	
Effective green time for pedestrians, g (s)	29	29	
Average delay, d_p	36.9	36.9	
LOS at signalized intersections (Exhibit 18-9)	D	D	
Signalized Intersection Identification			
Intersection #	Major Street at Minor Street		
1	Land Boulevard* at CambridgeSide Place		
2	Land Boulevard at CambridgeSide Place*		

* - Street which pedestrians are crossing

PEDESTRIAN WORKSHEET

General Information		Site Information	
Analyst	DIR	Facility	Land Boulevard at CambridgeSide Place
Agency or Company	VAI	Jurisdiction	Cambridge, MA
Date Performed	10/24/2018	Analysis Year	2018 Build
Analysis Time Period	AM		
☐ Operational (LOS)		☐ Design (W _E)	☐ Planning (LOS)
		☐ Planning (W _E)	
Crossings at Signalized Intersections			
Pedestrian Delay at Signalized Intersections	1	2	
Cycle length, C (s)	125	125	
Effective green time for pedestrians, g (s)	29	29	
Average delay, d _p	36.9	36.9	
LOS at signalized intersections (Exhibit 18-9)	D	D	
Signalized Intersection Identification			
Intersection #	Major Street at Minor Street		
1	Land Boulevard* at CambridgeSide Place		
2	Land Boulevard at CambridgeSide Place*		

* - Street which pedestrians are crossing

[illegible]

* - Street which pedestrians are crossing

PEDESTRIAN WORKSHEET

General Information		Site Information	
Analyst	DIR	Facility	Land Boulevard at CambridgeSide Place
Agency or Company	VAI	Jurisdiction	Cambridge, MA
Date Performed	10/24/2018	Analysis Year	2018 Build
Analysis Time Period	SAT		
☐ Operational (LOS)		☐ Design (W _E)	☐ Planning (LOS) ☐ Planning (W _E)
Crossings at Signalized Intersections			
Pedestrian Delay at Signalized Intersections	1	2	
Cycle length, C (s)	125	125	
Effective green time for pedestrians, g (s)	29	29	
Average delay, d _p	36.9	36.9	
LOS at signalized intersections (Exhibit 18-9)	D	D	
Signalized Intersection Identification			
Intersection #	Major Street at Minor Street		
1	Land Boulevard* at CambridgeSide Place		
2	Land Boulevard at CambridgeSide Place*		

* - Street which pedestrians are crossing

PEDESTRIAN WORKSHEET

General Information		Site Information	
Analyst	DIR	Facility	Land Boulevard at CambridgeSide Place
Agency or Company	VAI	Jurisdiction	Cambridge, MA
Date Performed	10/24/2018	Analysis Year	2023 Future
Analysis Time Period	AM		
☐ Operational (LOS) ☐ Design (W _E)		☐ Planning (LOS) ☐ Planning (W _E)	
Crossings at Signalized Intersections			
Pedestrian Delay at Signalized Intersections	1	2	
Cycle length, C (s)	125	125	
Effective green time for pedestrians, g (s)	29	29	
Average delay, d _p	36.9	36.9	
LOS at signalized intersections (Exhibit 18-9)	D	D	
Signalized Intersection Identification			
Intersection #	Major Street at Minor Street		
1	Land Boulevard* at CambridgeSide Place		
2	Land Boulevard at CambridgeSide Place*		

* - Street which pedestrians are crossing

PEDESTRIAN WORKSHEET										
General Information				Site Information						
Analyst	DIR			Facility	Land Boulevard at CambridgeSide Place					
Agency or Company	VAI			Jurisdiction	Cambridge, MA					
Date Performed	10/24/2018			Analysis Year	2023 Future					
Analysis Time Period	PM									
☐ Operational (LOS)		☐ Design (W _E)		☐ Planning (LOS)			☐ Planning (W _E)			
Crossings at Signalized Intersections										
Pedestrian Delay at Signalized Intersections	1	2								
Cycle length, C (s)	125	125								
Effective green time for pedestrians, g (s)	29	29								
Average delay, d _p	36.9	36.9								
LOS at signalized intersections (Exhibit 18-9)	D	D								
Signalized Intersection Identification										
Intersection #	Major Street at Minor Street									
1	Land Boulevard* at CambridgeSide Place									
2	Land Boulevard at CambridgeSide Place*									

* - Street which pedestrians are crossing

[illegible]

* - Street which pedestrians are crossing

PEDESTRIANS WORKSHEET*

General Information

Analyst _____ DIR _____
 Company _____ VAI _____
 Date Performed _____ 10/25/2018 _____
 Analysis Time Period _____ AM _____
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility _____ CambridgeSide Place at Mid-Block Crossing
 Jurisdiction _____ Cambridge, MA
 Analysis Year _____ 2018 Existing

☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _O		
Effective crosswalk width, W _E (ft) W _E = W _T - W _O	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	319							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.08861111							
Vehicular flow rate, v _h (veh/h)	265							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	49							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	17							
Typical pedestrian number in crossing platoon, N _c ³	2.01							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	2							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	19							
Vehicular flow rate, v (veh/s)	0.07361111							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v t_G} - v t _G - 1)	22.4							
LOS at unsignalized intersections (Exhibit 18-13)	D							

Notes

*Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v p t_c} + v e^{v t_c}) / (v_p + v) e^{(v p - v) t_c}$$

Paths:

1 Crossing CambridgeSide Place

PEDESTRIANS WORKSHEET^a

General Information

Analyst _____ DIR _____
 Company _____ VAI _____
 Date Performed _____ 10/25/2018 _____
 Analysis Time Period _____ PM _____
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility _____ CambridgeSide Place at Mid-Block Crossing
 Jurisdiction _____ Cambridge, MA
 Analysis Year _____ 2018 Existing
☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _o		
Effective crosswalk width, W _E (ft) W _E = W _T - W _o	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	342							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.095							
Vehicular flow rate, veh/h	622							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	49							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	17							
Typical pedestrian number in crossing platoon, N _c ³	6.82							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	10							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	35							
Vehicular flow rate, v (veh/s)	0.17277778							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v t_G} - v t _G - 1)	2407.1							
LOS at unsignalized intersections (Exhibit 18-13)	F							

Notes

^a Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v_p t_c} + v e^{-v t_c}) / (v_p + v) e^{(v_p + v) t_c}$$

Paths:

1. Crossing CambridgeSide Place

PEDESTRIANS WORKSHEET*

General Information

Analyst _____ DIR _____
 Company _____ VAI _____
 Date Performed _____ 10/25/2018 _____
 Analysis Time Period _____ SAT _____
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility _____ CambridgeSide Place at Mid-Block Crossing
 Jurisdiction _____ Cambridge, MA
 Analysis Year _____ 2018 Existing
☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _O		
Effective crosswalk width, W _E (ft) W _E = W _T - W _O	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _o (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	88							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.02444444							
Vehicular flow rate, veh/h	503							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	49							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	17							
Typical pedestrian number in crossing platoon, N _c ³	2.16							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	2							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	19							
Vehicular flow rate, v (veh/s)	0.13972222							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v t_G} - v t _G - 1)	75.6							
LOS at unsignalized intersections (Exhibit 18-13)	F							

Notes

*Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v t_c} + v e^{-v t_c}) / (v_p + v) e^{(v_p - v) t_c}$$

Paths:

1. Crossing CambridgeSide Place

PEDESTRIANS WORKSHEET*

General Information

Analyst DIR
 Company VAI
 Date Performed 10/25/2018
 Analysis Time Period AM
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility CambridgeSide Place at Mid-Block Crossing
 Jurisdiction Cambridge, MA
 Analysis Year 2018 Build

☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _O		
Effective crosswalk width, W _E (ft) W _E = W _T - W _O	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	319							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.08861111							
Vehicular flow rate, veh/h	268							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	49							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	17							
Typical pedestrian number in crossing platoon, N _c ³	2.03							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	2							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	19							
Vehicular flow rate, v (veh/s)	0.07444444							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{vt_G} - vt _G - 1)	22.8							
LOS at unsignalized intersections (Exhibit 18-13)	D							

Notes

*Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v_p t_c} + v e^{-v t_c}) / (v_p + v) e^{(v_p - v) t_c}$$

Paths:

1. Crossing CambridgeSide Place

PEDESTRIANS WORKSHEET*

General Information

Analyst _____ DIR _____
 Company _____ VAI _____
 Date Performed _____ 10/25/2018 _____
 Analysis Time Period _____ PM _____
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility _____ CambridgeSide Place at Mid-Block Crossing
 Jurisdiction _____ Cambridge, MA
 Analysis Year _____ 2018 Build _____

☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _O		
Effective crosswalk width, W _E (ft) W _E = W _T - W _O	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	342							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.095							
Vehicular flow rate, veh/h	632							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	49							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	17							
Typical pedestrian number in crossing platoon, N _c ³	7.07							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	10							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	35							
Vehicular flow rate, v (veh/s)	0.17555556							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v t_G} - v t _G - 1)	2614.4							
LOS at unsignalized intersections (Exhibit 18-13)	F							

Notes

* Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v p t_c} + v e^{-v t_c}) / (v_p + v) e^{(v p - v) t_c}$$

Paths:

1. Crossing CambridgeSide Place

PEDESTRIANS WORKSHEET^a

General Information

Analyst DIR
 Company VAI
 Date Performed 10/25/2018
 Analysis Time Period SAT
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility CambridgeSide Place at Mid-Block Crossing
 Jurisdiction Cambridge, MA
 Analysis Year 2018 Build
☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _O		
Effective crosswalk width, W _E (ft) W _E = W _T - W _O	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	88							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.02444444							
Vehicular flow rate, veh/h	485							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	49							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	17							
Typical pedestrian number in crossing platoon, N _c ³	2.08							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	2							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	19							
Vehicular flow rate, v (veh/s)	0.13472222							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{vt_G} - vt _G - 1)	69.6							
LOS at unsignalized intersections (Exhibit 18-13)	F							

Notes

^aBased on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

²If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v_{plc}} + v e^{-v_{tc}}) / (v_p + v) e^{(v_p - v) t_c}$$

Paths:

1. Crossing CambridgeSide Place

PEDESTRIANS WORKSHEET^a

General Information

Analyst _____ DIR _____
 Company _____ VAI _____
 Date Performed _____ 10/25/2018 _____
 Analysis Time Period _____ AM _____
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility _____ CambridgeSide Place at Mid-Block Crossing
 Jurisdiction _____ Cambridge, MA
 Analysis Year _____ 2023 Future _____

☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _o		
Effective crosswalk width, W _E (ft) W _E = W _T - W _o	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	319							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.08861111							
Vehicular flow rate, veh/h	319							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	49							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	17							
Typical pedestrian number in crossing platoon, N _c ³	2.37							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	3							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	21							
Vehicular flow rate, v (veh/s)	0.08861111							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v t_G} - v t _G - 1)	40.3							
LOS at unsignalized intersections (Exhibit 18-13)	E							

Notes

^aBased on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v t_c} + v e^{-v t_c}) / (v_p + v) e^{(v_p - v) t_c}$$

Paths:

1. Crossing CambridgeSide Place

PEDESTRIANS WORKSHEET*

General Information

Analyst DIR
 Company VAI
 Date Performed 10/25/2018
 Analysis Time Period PM
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility CambridgeSide Place at Mid-Block Crossing
 Jurisdiction Cambridge, MA
 Analysis Year 2023 Future

☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _o		
Effective crosswalk width, W _E (ft) W _E = W _T - W _o	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	342							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.095							
Vehicular flow rate, veh/h	665							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	49							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	17							
Typical pedestrian number in crossing platoon, N _c ³	7.98							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	12							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	39							
Vehicular flow rate, v (veh/s)	0.18472222							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v t_G} - v t _G - 1)	7236.9							
LOS at unsignalized intersections (Exhibit 18-13)	F							

Notes

* Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1

$$N_c = (v_p e^{v t_c} + v e^{v t_c}) / (v_p + v) e^{(v_p + v) t_c}$$

Paths:

1. Crossing CambridgeSide Place

PEDESTRIANS WORKSHEET*

General Information

Analyst _____ DIR _____
 Company _____ VAI _____
 Date Performed _____ 10/25/2018 _____
 Analysis Time Period _____ SAT _____
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility _____ CambridgeSide Place at Mid-Block Crossing
 Jurisdiction _____ Cambridge, MA
 Analysis Year _____ 2023 Future

☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _O		
Effective crosswalk width, W _E (ft) W _E = W _T - W _O	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	88							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.02444444							
Vehicular flow rate, veh/h	514							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	49							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	17							
Typical pedestrian number in crossing platoon, N _c ³	2.22							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	2							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	19							
Vehicular flow rate, v (veh/s)	0.14277778							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v t_G} - v t _G - 1)	79.6							
LOS at unsignalized intersections (Exhibit 18-13)	F							

Notes

*Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v t_c} + v e^{v t_c}) / (v_p + v) e^{(v_p + v) t_c}$$

Paths:

1. Crossing CambridgeSide Place

PEDESTRIAN WORKSHEET										
General Information					Site Information					
Analyst	DIR				Facility	First St. at CambridgeSide Place and Charles St.				
Agency or Company	VAI				Jurisdiction	Cambridge, MA				
Date Performed	10/25/2018				Analysis Year	2018 Existing				
Analysis Time Period	AM									
☐ Operational (LOS)		☐ Design (W_E)		☐ Planning (LOS)			☐ Planning (W_E)			
Crossings at Signalized Intersections										
Pedestrian Delay at Signalized Intersections	1	2	3	4						
Cycle length, C (s)	74	74	74	74						
Effective green time for pedestrians, g (s)	22	22	22	22						
Average delay, d_p	18.3	18.3	18.3	18.3						
LOS at signalized intersections (Exhibit 18-9)	B	B	B	B						
Signalized Intersection Identification										
Intersection #	Major Street at Minor Street									
1	First St.* at CambridgeSide Place and Charles St.									
2	First St.* at CambridgeSide Place and Charles St.									
3	First St. at CambridgeSide Place* and Charles St.									
4	First St. at CambridgeSide Place and Charles St.*									

* - Street which pedestrians are crossing

PEDESTRIAN WORKSHEET

General Information		Site Information	
Analyst	DIR	Facility	First St. at CambridgeSide Place and Charles St.
Agency or Company	VAI	Jurisdiction	Cambridge, MA
Date Performed	10/25/2018	Analysis Year	2018 Existing
Analysis Time Period	PM		
☐ Operational (LOS)		☐ Design (W _E)	
		☐ Planning (LOS)	
		☐ Planning (W _E)	
Crossings at Signalized Intersections			
Pedestrian Delay at Signalized Intersections	1	2	3
Cycle length, C (s)	74	74	74
Effective green time for pedestrians, g (s)	22	22	22
Average delay, d _p	18.3	18.3	18.3
LOS at signalized intersections (Exhibit 18-9)	B	B	B
Signalized Intersection Identification			
Intersection #	Major Street at Minor Street		
1	First St.* at CambridgeSide Place and Charles St.		
2	First St.* at CambridgeSide Place and Charles St.		
3	First St. at CambridgeSide Place* and Charles St.		
4	First St. at CambridgeSide Place and Charles St.*		

* - Street which pedestrians are crossing

PEDESTRIAN WORKSHEET											
General Information					Site Information						
Analyst	DIR				Facility	First St. at CambridgeSide Place and Charles St.					
Agency or Company	VAI				Jurisdiction	Cambridge, MA					
Date Performed	10/25/2018				Analysis Year	2018 Existing					
Analysis Time Period	SAT										
☐ Operational (LOS)		☐ Design (W _E)		☐ Planning (LOS)			☐ Planning (W _E)				
Crossings at Signalized Intersections											
Pedestrian Delay at Signalized Intersections	1	2	3	4							
Cycle length, C (s)	74	74	74	74							
Effective green time for pedestrians, g (s)	22	22	22	22							
Average delay, d _p	18.3	18.3	18.3	18.3							
LOS at signalized intersections (Exhibit 18-9)	B	B	B	B							
Signalized Intersection Identification											
Intersection #	Major Street at Minor Street										
1	First St.* at CambridgeSide Place and Charles St.										
2	First St.* at CambridgeSide Place and Charles St.										
3	First St. at CambridgeSide Place* and Charles St.										
4	First St. at CambridgeSide Place and Charles St.*										

* - Street which pedestrians are crossing

PEDESTRIAN WORKSHEET										
General Information					Site Information					
Analyst	DIR				Facility	First St. at CambridgeSide Place and Charles St.				
Agency or Company	VAI				Jurisdiction	Cambridge, MA				
Date Performed	10/25/2018				Analysis Year	2018 Build				
Analysis Time Period	AM									
☐ Operational (LOS)		☐ Design (W _E)		☐ Planning (LOS)			☐ Planning (W _E)			
Crossings at Signalized Intersections										
Pedestrian Delay at Signalized Intersections	1	2	3	4						
Cycle length, C (s)	74	74	74	74						
Effective green time for pedestrians, g (s)	22	22	22	22						
Average delay, d _p	18.3	18.3	18.3	18.3						
LOS at signalized intersections (Exhibit 18-9)	B	B	B	B						
Signalized Intersection Identification										
Intersection #	Major Street at Minor Street									
1	First St.* at CambridgeSide Place and Charles St.									
2	First St.* at CambridgeSide Place and Charles St.									
3	First St. at CambridgeSide Place* and Charles St.									
4	First St. at CambridgeSide Place and Charles St.*									

* - Street which pedestrians are crossing

PEDESTRIAN WORKSHEET										
General Information					Site Information					
Analyst	DIR				Facility	First St. at CambridgeSide Place and Charles St.				
Agency or Company	VAI				Jurisdiction	Cambridge, MA				
Date Performed	10/25/2018				Analysis Year	2018 Build				
Analysis Time Period	PM									
☐ Operational (LOS)		☐ Design (W _E)		☐ Planning (LOS)			☐ Planning (W _E)			
Crossings at Signalized Intersections										
Pedestrian Delay at Signalized Intersections	1	2	3	4						
Cycle length, C (s)	74	74	74	74						
Effective green time for pedestrians, g (s)	22	22	22	22						
Average delay, d _p	18.3	18.3	18.3	18.3						
LOS at signalized intersections (Exhibit 18-9)	B	B	B	B						
Signalized Intersection Identification										
Intersection #	Major Street at Minor Street									
1	First St.* at CambridgeSide Place and Charles St.									
2	First St.* at CambridgeSide Place and Charles St.									
3	First St. at CambridgeSide Place* and Charles St.									
4	First St. at CambridgeSide Place and Charles St.*									

* - Street which pedestrians are crossing

PEDESTRIAN WORKSHEET											
General Information					Site Information						
Analyst	DIR				Facility	First St. at CambridgeSide Place and Charles St.					
Agency or Company	VAI				Jurisdiction	Cambridge, MA					
Date Performed	10/25/2018				Analysis Year	2018 Build					
Analysis Time Period	SAT										
☐ Operational (LOS)		☐ Design (W_E)		☐ Planning (LOS)		☐ Planning (W_E)					
Crossings at Signalized Intersections											
Pedestrian Delay at Signalized Intersections	1	2	3	4							
Cycle length, C (s)	74	74	74	74							
Effective green time for pedestrians, g (s)	22	22	22	22							
Average delay, d_p	18.3	18.3	18.3	18.3							
LOS at signalized intersections (Exhibit 18-9)	B	B	B	B							
Signalized Intersection Identification											
Intersection #	Major Street at Minor Street										
1	First St.* at CambridgeSide Place and Charles St.										
2	First St.* at CambridgeSide Place and Charles St.										
3	First St. at CambridgeSide Place* and Charles St.										
4	First St. at CambridgeSide Place and Charles St.*										

* - Street which pedestrians are crossing

PEDESTRIAN WORKSHEET										
General Information					Site Information					
Analyst	DIR				Facility	First St. at CambridgeSide Place and Charles St.				
Agency or Company	VAI				Jurisdiction	Cambridge, MA				
Date Performed	10/25/2018				Analysis Year	2023 Future				
Analysis Time Period	AM									
☐ Operational (LOS)		☐ Design (W _E)		☐ Planning (LOS)			☐ Planning (W _E)			
Crossings at Signalized Intersections										
Pedestrian Delay at Signalized Intersections	1	2	3	4						
Cycle length, C (s)	74	74	74	74						
Effective green time for pedestrians, g (s)	22	22	22	22						
Average delay, d _p	18.3	18.3	18.3	18.3						
LOS at signalized intersections (Exhibit 18-9)	B	B	B	B						
Signalized Intersection Identification										
Intersection #	Major Street at Minor Street									
1	First St.* at CambridgeSide Place and Charles St.									
2	First St.* at CambridgeSide Place and Charles St.									
3	First St. at CambridgeSide Place* and Charles St.									
4	First St. at CambridgeSide Place and Charles St.*									

* - Street which pedestrians are crossing

PEDESTRIAN WORKSHEET										
General Information					Site Information					
Analyst	DIR				Facility	First St. at CambridgeSide Place and Charles St.				
Agency or Company	VAI				Jurisdiction	Cambridge, MA				
Date Performed	10/25/2018				Analysis Year	2023 Future				
Analysis Time Period	PM									
☐ Operational (LOS)		☐ Design (W_E)		☐ Planning (LOS)		☐ Planning (W_E)				
Crossings at Signalized Intersections										
Pedestrian Delay at Signalized Intersections	1	2	3	4						
Cycle length, C (s)	74	74	74	74						
Effective green time for pedestrians, g (s)	22	22	22	22						
Average delay, d_p	18.3	18.3	18.3	18.3						
LOS at signalized intersections (Exhibit 18-9)	B	B	B	B						
Signalized Intersection Identification										
Intersection #	Major Street at Minor Street									
1	First St.* at CambridgeSide Place and Charles St.									
2	First St.* at CambridgeSide Place and Charles St.									
3	First St. at CambridgeSide Place* and Charles St.									
4	First St. at CambridgeSide Place and Charles St.*									

* - Street which pedestrians are crossing

PEDESTRIAN WORKSHEET

General Information												Site Information				
Analyst		DIR		Facility		First St. at CambridgeSide Place and Charles St.										
Agency or Company		VAI		Jurisdiction		Cambridge, MA										
Date Performed		10/25/2018		Analysis Year		2023 Future										
Analysis Time Period		SAT														
☐ Operational (LOS)				☐ Design (W_E)				☐ Planning (LOS)				☐ Planning (W_E)				
Crossings at Signalized Intersections																
Pedestrian Delay at Signalized Intersections				1	2	3	4									
Cycle length, C (s)				74	74	74	74									
Effective green time for pedestrians, g (s)				22	22	22	22									
Average delay, d_p				18.3	18.3	18.3	18.3									
LOS at signalized intersections (Exhibit 18-9)				B	B	B	B									
Signalized Intersection Identification																
Intersection #		Major Street at Minor Street														
1		First St.* at CambridgeSide Place and Charles St.														
2		First St.* at CambridgeSide Place and Charles St.														
3		First St. at CambridgeSide Place* and Charles St.														
4		First St. at CambridgeSide Place and Charles St.*														

* - Street which pedestrians are crossing

PEDESTRIANS WORKSHEET*

General Information

Analyst _____ DIR _____
 Company _____ VAI _____
 Date Performed _____ 10/25/2018 _____
 Analysis Time Period _____ AM _____
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility _____ First Street at Spring Street _____
 Jurisdiction _____ Cambridge, MA _____
 Analysis Year _____ 2018 Existing _____
☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _O		
Effective crosswalk width, W _E (ft) W _E = W _T - W _O	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _o (p/min/ft), v _o = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g)/C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	73							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.02027778							
Vehicular flow rate, veh/h	349							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	29							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	11.2857143							
Typical pedestrian number in crossing platoon, N _c ³	1.17							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	1							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	11.2857143							
Vehicular flow rate, v (veh/s)	0.09694444							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v t_G} - v t _G - 1)	9.2							
LOS at unsignalized intersections (Exhibit 18-13)	B							

Notes

* Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v t_c} + v e^{-v t_c}) / (v_p + v) e^{(v_p - v) t_c}$$

Paths:

1. Crossing Spring Street

PEDESTRIANS WORKSHEET^a

General Information

Analyst _____ DIR _____
 Company _____ VAI _____
 Date Performed _____ 10/25/2018 _____
 Analysis Time Period _____ PM _____
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility _____ First Street at Spring Street _____
 Jurisdiction _____ Cambridge, MA _____
 Analysis Year _____ 2018 Existing _____
☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _o		
Effective crosswalk width, W _E (ft) W _E = W _T - W _o	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	137							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.03805556							
Vehicular flow rate, veh/h	127							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	29							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	11.2857143							
Typical pedestrian number in crossing platoon, N _c ³	1.09							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	1							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	11.2857143							
Vehicular flow rate, v (veh/s)	0.03527778							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v t_G} - v t _G - 1)	2.6							
LOS at unsignalized intersections (Exhibit 18-13)	A							

Notes

^a Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v p t_c} + v e^{-v t_c}) / (v_p + v) e^{(v p - v) t_c}$$

Paths:

1 Crossing Spring Street

PEDESTRIANS WORKSHEET^a

General Information

Analyst _____ DIR _____
 Company _____ VAI _____
 Date Performed _____ 10/25/2018 _____
 Analysis Time Period _____ SAT _____
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility _____ First Street at Spring Street _____
 Jurisdiction _____ Cambridge, MA _____
 Analysis Year _____ 2018 Existing _____
☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _o		
Effective crosswalk width, W _E (ft) W _E = W _T - W _o	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	25							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.00694444							
Vehicular flow rate, veh/h	115							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _a (s)	3							
Length of crosswalk, L (ft)	29							
Single pedestrian critical gap, t _c = (L/S _p) + t _a	11.2857143							
Typical pedestrian number in crossing platoon, N _c ³	1.02							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	1							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	11.2857143							
Vehicular flow rate, v (veh/s)	0.03194444							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v t_G} - v t _G - 1)	2.3							
LOS at unsignalized intersections (Exhibit 18-13)	A							

Notes

^a Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions

² If there is no platoon crossing, assume N_p = 1.

$N_c = (v_p e^{v p t_c} + v e^{-v t_c}) / (v_p + v) e^{(v p - v) t_c}$

Paths:

1. Crossing Spring Street

PEDESTRIANS WORKSHEET^a

General Information

Analyst _____ DIR
 Company _____ VAI
 Date Performed _____ 10/25/2018
 Analysis Time Period _____ AM
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility _____ First Street at Spring Street
 Jurisdiction _____ Cambridge, MA
 Analysis Year _____ 2018 Build

☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _o		
Effective crosswalk width, W _E (ft) W _E = W _T - W _o	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	73							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.02027778							
Vehicular flow rate, veh/h	349							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	29							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	11.2857143							
Typical pedestrian number in crossing platoon, N _c ³	1.17							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	1							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	11.2857143							
Vehicular flow rate, v (veh/s)	0.09694444							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v/t_G} - vt _G - 1)	9.2							
LOS at unsignalized intersections (Exhibit 18-13)	B							

Notes

^aBased on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v_{plc}} + v e^{-v_{plc}}) / (v_p + v) e^{(v_p - v) / t_c}$$

Paths:

1. Crossing Spring Street

PEDESTRIANS WORKSHEET*

General Information

Analyst _____ DIR
 Company _____ VAI
 Date Performed 10/25/2018
 Analysis Time Period PM
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility First Street at Spring Street
 Jurisdiction Cambridge, MA
 Analysis Year 2018 Build
☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _o		
Effective crosswalk width, W _E (ft) W _E = W _T - W _o	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	137							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.03805556							
Vehicular flow rate, veh/h	130							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	29							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	11.2857143							
Typical pedestrian number in crossing platoon, N _c ³	1.09							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	1							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	11.2857143							
Vehicular flow rate, v (veh/s)	0.03611111							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v t_G} - v t _G - 1)	2.7							
LOS at unsignalized intersections (Exhibit 18-13)	A							

Notes

* Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v p t_c} + v e^{-v t_c}) / (v_p + v) e^{(v p - v) t_c}$$

Paths:

1. Crossing Spring Street

PEDESTRIANS WORKSHEET*

General Information

Analyst _____ DIR
 Company _____ VAI
 Date Performed 10/25/2018
 Analysis Time Period SAT
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility First Street at Spring Street
 Jurisdiction Cambridge, MA
 Analysis Year 2018 Build
☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _o		
Effective crosswalk width, W _E (ft) W _E = W _T - W _o	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	25							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.00694444							
Vehicular flow rate, veh/h	116							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _a (s)	3							
Length of crosswalk, L (ft)	29							
Single pedestrian critical gap, t _c = (L/S _p) + t _a	11.2857143							
Typical pedestrian number in crossing platoon, N _c ³	1.02							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	1							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	11.2857143							
Vehicular flow rate, v (veh/s)	0.03222222							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v/t_G} - v/t _G - 1)	2.3							
LOS at unsignalized intersections (Exhibit 18-13)	A							

Notes

* Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1

$$N_c = (v_p e^{v_{plc}} + v e^{-v_{plc}}) / (v_p + v) e^{(v_p - v)/t_c}$$

Paths:

1. Crossing Spring Street

PEDESTRIANS WORKSHEET*

General Information

Analyst DIR
 Company VAI
 Date Performed 10/25/2018
 Analysis Time Period AM

☒ Operational (LOS)

☐ Design (W_E)

Site Information

Facility First Street at Spring Street
 Jurisdiction Cambridge, MA
 Analysis Year 2023 Future

☐ Planning (LOS)

☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _o		
Effective crosswalk width, W _E (ft) W _E = W _T - W _o	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	73							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.02027778							
Vehicular flow rate, veh/h	538							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	29							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	11.2857143							
Typical pedestrian number in crossing platoon, N _c ³	1.35							
Spatial pedestrian distribution, ² N _c (p), N _p = INT [8.0 (N _c -1)/W _E]+1	1							
Group critical gap, t _G (s), t _G = t _c + 2(N _c -1)	11.2857143							
Vehicular flow rate, v (veh/s)	0.14944444							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v t_G} - v t _G - 1)	18.2							
LOS at unsignalized intersections (Exhibit 18-13)	C							

Notes

*Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v p t_c} + v e^{-v t_c}) / (v_p + v) e^{(v p - v) t_c}$$

Paths:

1. Crossing Spring Street

PEDESTRIANS WORKSHEET^a

General Information

Analyst _____ DIR _____
 Company _____ VAI _____
 Date Performed _____ 10/25/2018 _____
 Analysis Time Period _____ PM _____
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility _____ First Street at Spring Street _____
 Jurisdiction _____ Cambridge, MA _____
 Analysis Year _____ 2023 Future _____

☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _o		
Effective crosswalk width, W _E (ft) W _E = W _T - W _o	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g)/C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	137							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.03805556							
Vehicular flow rate, veh/h	172							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _a (s)	3							
Length of crosswalk, L (ft)	29							
Single pedestrian critical gap, t _c = (L/S _p) + t _a	11.2857143							
Typical pedestrian number in crossing platoon, N _c ³	1.12							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	1							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	11.2857143							
Vehicular flow rate, v (veh/s)	0.04777778							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{-v t_G} - v t _G - 1)	3.7							
LOS at unsignalized intersections (Exhibit 18-13)	A							

Notes

^aBased on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

²If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v_p t_c} + v e^{-v t_c}) / (v_p + v) e^{(v_p - v) t_c}$$

Paths:

1. Crossing Spring Street

PEDESTRIANS WORKSHEET^a

General Information

Analyst DIR
 Company VAI
 Date Performed 10/25/2018
 Analysis Time Period SAT
☒ Operational (LOS) ☐ Design (W_E)

Site Information

Facility First Street at Spring Street
 Jurisdiction Cambridge, MA
 Analysis Year 2023 Future
☐ Planning (LOS) ☐ Planning (W_E)

Walkways and Sidewalk Pedestrian Facilities

	1	2
Total Width of crosswalks (ft), W _T		
Sum of obstructions width and/or shy distances (ft), ¹ W _o		
Effective crosswalk width, W _E (ft) W _E = W _T - W _o	5	5
Peak 15-min flow rate (both directions), v ₁₅ (p/15-min)		
Pedestrian unit flow rate, v _p (p/min/ft), v _p = v ₁₅ /15*W _E		
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)		

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities

Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8
Cycle Length, C (s)								
Effective green time for pedestrians, g (s)								
Average delay, d _p = 0.5(C-g) ² /C								
LOS at Signalized Intersections (Exhibit 18-9)								
Pedestrian Delay at TWSC Intersections								
Peak 60-min pedestrian flow rate (both directions)	25							
Pedestrian Flow Rate, v _p = 60 min ped flow rate/3600 sec	0.00694444							
Vehicular flow rate, veh/h	146							
Pedestrian walking speed, S _p (ft/s)	3.5							
Pedestrian start-up time, t _s (s)	3							
Length of crosswalk, L (ft)	29							
Single pedestrian critical gap, t _c = (L/S _p) + t _s	11.2857143							
Typical pedestrian number in crossing platoon, N _c ³	1.02							
Spatial pedestrian distribution, ² N _p (p), N _p = INT [8.0 (N _c -1)/W _E]+1	1							
Group critical gap, t _G (s), t _G = t _c + 2(N _p -1)	11.2857143							
Vehicular flow rate, v (veh/s)	0.04055556							
Average pedestrian delay, d _p (s), d _p = (1/v)(e ^{v t_G} - v t _G - 1)	3.0							
LOS at unsignalized intersections (Exhibit 18-13)	A							

Notes

^a Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume N_p = 1.

$$N_c = (v_p e^{v p t_c} + v e^{-v t_c}) / (v_p + v) e^{(v p - v) t_c}$$

Paths:

1. Crossing Spring Street