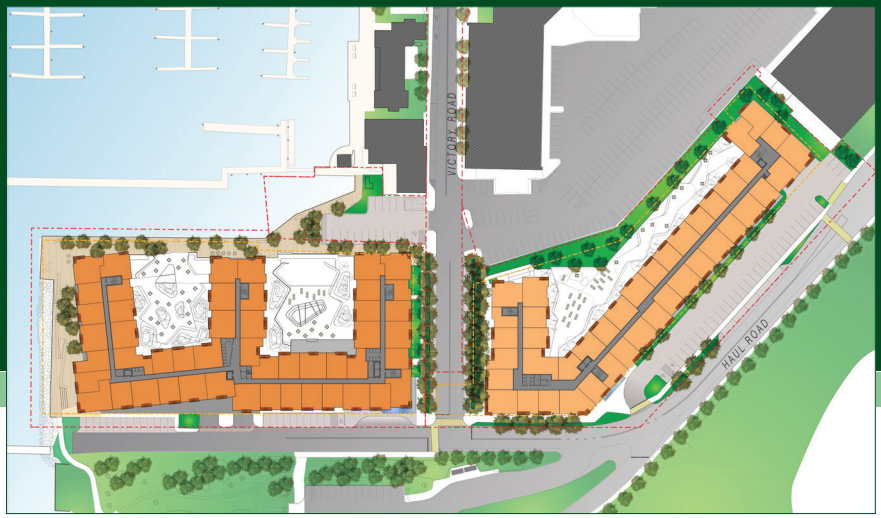

Boardwalk Residences at Marina Bay

Technical Appendices

Prepared for

Flagship Marina Bay LLC

Prepared by

Howard/Stein-Hudson Associates, Inc.

January 29, 2013

Howard/Stein-Hudson Associates, Inc.

CREATIVE SOLUTIONS • EFFECTIVE PARTNERING ®

Appendix A. Traffic Count Data

N/S: Mirwa Haul Road
E: Victory Road Extension
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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

File Name : 122931 A
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Mirwa Haul Road From North			Victory Road Extension From East			Mirwa Haul Road From South			
Start Time	Thru	Left	U-Turn	Right	Left	U-Turn	Right	Thru	U-Turn	Int. Total
07:00 AM	0	1	0	0	1	0	1	0	0	3
07:15 AM	0	1	0	1	2	0	1	1	0	6
07:30 AM	0	0	0	0	3	0	0	2	0	5
07:45 AM	3	0	0	0	1	0	2	3	0	9
Total	3	2	0	1	7	0	4	6	0	23
08:00 AM	1	0	0	0	1	0	0	0	0	2
08:15 AM	2	0	0	1	1	0	1	2	0	7
08:30 AM	3	0	0	1	4	0	1	2	0	11
08:45 AM	3	0	1	0	3	0	3	3	0	13
Total	9	0	1	2	9	0	5	7	0	33
Grand Total	12	2	1	3	16	0	9	13	0	56
Apprch %	80	13.3	6.7	15.8	84.2	0	40.9	59.1	0	
Total %	21.4	3.6	1.8	5.4	28.6	0	16.1	23.2	0	
Cars	9	2	1	2	16	0	8	11	0	49
% Cars	75	100	100	66.7	100	0	88.9	84.6	0	87.5
Heavy Vehicles	3	0	0	1	0	0	1	2	0	7
% Heavy Vehicles	25	0	0	33.3	0	0	11.1	15.4	0	12.5

	Mirwa Haul Road From North				Victory Road Extension From East				Mirwa Haul Road From South				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total

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

Peak Hour for Entire Intersection Begins at 08:00 AM

08:00 AM	1	0	0	1	0	1	0	1	0	0	0	0	2
08:15 AM	2	0	0	2	**1**	1	0	2	1	2	0	3	7
08:30 AM	**3**	0	0	3	1	**4**	0	**5**	1	2	0	3	11
08:45 AM	3	0	**1**	**4**	0	3	0	3	**3**	**3**		**6**	**13**
Total Volume	9	0	1	10	2	9	0	11	5	7	0	12	33
% App. Total	90	0	10		18.2	81.8	0		41.7	58.3	0		
PHF	.750	.000	.250	.625	.500	.563	.000	.550	.417	.583	.000	.500	.635
Cars	8	0	1	9	2	9	0	11	5	7	0	12	32
% Cars	88.9	0	100	90.0	100	100	0	100	100	100	0	100	97.0
Heavy Vehicles	1	0	0	1	0	0	0	0	0	0	0	0	1
% Heavy Vehicles	11.1	0	0	10.0	0	0	0	0	0	0	0	0	3.0

N/S: Mirwa Haul Road
E: Victory Road Extension
City, State: Quincy, MA
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Groups Printed- Cars

	Mirwa Haul Road From North			Victory Road Extension From East			Mirwa Haul Road From South			
Start Time	Thru	Left	U-Turn	Right	Left	U-Turn	Right	Thru	U-Turn	Int. Total
07:00 AM	0	1	0	0	1	0	0	0	0	2
07:15 AM	0	1	0	0	2	0	1	0	0	4
07:30 AM	0	0	0	0	3	0	0	2	0	5
07:45 AM	1	0	0	0	1	0	2	2	0	6
Total	1	2	0	0	7	0	3	4	0	17
08:00 AM	1	0	0	0	1	0	0	0	0	2
08:15 AM	2	0	0	1	1	0	1	2	0	7
08:30 AM	2	0	0	1	4	0	1	2	0	10
08:45 AM	3	0	1	0	3	0	3	3	0	13
Total	8	0	1	2	9	0	5	7	0	32
Grand Total	9	2	1	2	16	0	8	11	0	49
Apprch %	75	16.7	8.3	11.1	88.9	0	42.1	57.9	0	
Total %	18.4	4.1	2	4.1	32.7	0	16.3	22.4	0	

	Mirwa Haul Road From North				Victory Road Extension From East				Mirwa Haul Road From South				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	1	0	0	1	0	1	0	1	0	0	0	0	2
08:15 AM	2	0	0	2	**1**	1	0	2	1	2	0	3	7
08:30 AM	2	0	0	2	1	**4**	0	**5**	1	2	0	3	10
08:45 AM	**3**	0	**1**	**4**	0	3	0	3	**3**	**3**		**6**	**13**
Total Volume	8	0	1	9	2	9	0	11	5	7	0	12	32
% App. Total	88.9	0	11.1		18.2	81.8	0		41.7	58.3	0		
PHF	.667	.000	.250	.563	.500	.563	.000	.550	.417	.583	.000	.500	.615

N/S: Mirwa Haul Road
E: Victory Road Extension
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Page No : 1

Groups Printed- Heavy Vehicles

	Mirwa Haul Road From North			Victory Road Extension From East			Mirwa Haul Road From South			
Start Time	Thru	Left	U-Turn	Right	Left	U-Turn	Right	Thru	U-Turn	Int. Total
07:00 AM	0	0	0	0	0	0	1	0	0	1
07:15 AM	0	0	0	1	0	0	0	1	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	2	0	0	0	0	0	0	1	0	3
Total	2	0	0	1	0	0	1	2	0	6
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	1	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	0	0	0	0	0	1
Grand Total	3	0	0	1	0	0	1	2	0	7
Apprch %	100	0	0	100	0	0	33.3	66.7	0	
Total %	42.9	0	0	14.3	0	0	14.3	28.6	0	

	Mirwa Haul Road From North				Victory Road Extension From East				Mirwa Haul Road From South				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	0	0	0	0	0	0	0	**1**	0	0	**1**	1
07:15 AM	0	0	0	0	**1**	0	0	**1**	0	**1**			
07:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
07:45 AM	**2**	0	0	**2**	0	0	0	0	0	1	0	1	**3**
Total Volume	2	0	0	2	1	0	0	1	1	2	0	3	6
% App. Total	100	0	0		100	0	0		33.3	66.7	0		
PHF	.250	.000	.000	.250	.250	.000	.000	.250	.250	.500	.000	.750	.500

N/S: Mirwa Haul Road
E: Victory Road Extension
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Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Peds and Bicycles

	Mirwa Haul Road From North			Victory Road Extension From East			Mirwa Haul Road From South			
Start Time	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	1	0	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	1	0	0	0	0	0	2
Apprch %	0	100	0	100	0	0	0	0	0	
Total %	0	50	0	50	0	0	0	0	0	

	Mirwa Haul Road From North				Victory Road Extension From East				Mirwa Haul Road From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	**1**	**0**	**1**	0	0	0	0	0	0	0	0	**1**
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	1
Total Volume	0	1	0	1	1	0	0	1	0	0	0	0	2
% App. Total	0	100	0		100	0	0		0	0	0		
PHF	.000	.250	.000	.250	.250	.000	.000	.250	.000	.000	.000	.000	.500

N/S: Mirwa Haul Road
E: Victory Road Extension
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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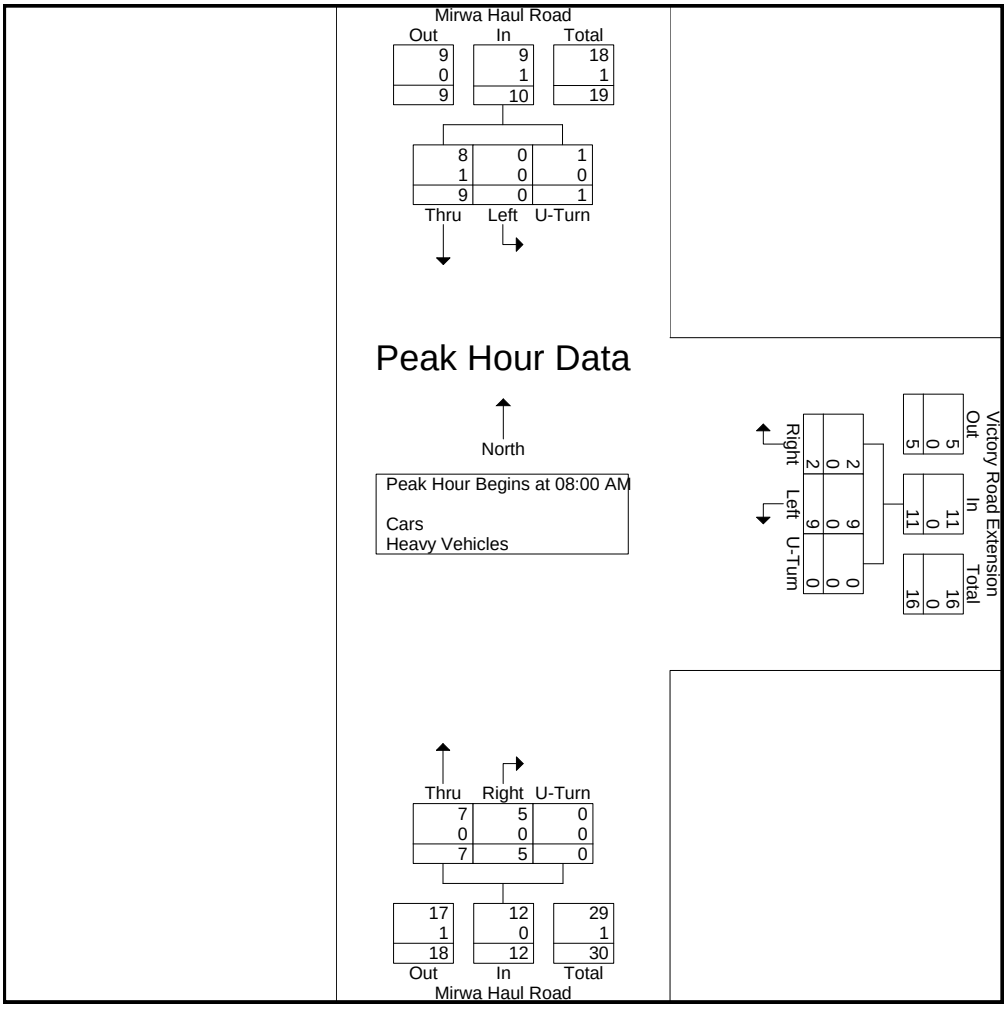
	Mirwa Haul Road From North				Victory Road Extension From East				Mirwa Haul Road From South				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	1	0	0	1	0	1	0	1	0	0	0	0	2
08:15 AM	2	0	0	2	**1**	1	0	2	1	2	0	3	7
08:30 AM	**3**	0	0	3	1	**4**	0	**5**	1	2	0	3	11
08:45 AM	3	0	**1**	**4**	0	3	0	3	**3**	**3**		**6**	**13**
Total Volume	9	0	1	10	2	9	0	11	5	7	0	12	33
% App. Total	90	0	10		18.2	81.8	0		41.7	58.3	0		
PHF	.750	.000	.250	.625	.500	.563	.000	.550	.417	.583	.000	.500	.635
Cars	8	0	1	9	2	9	0	11	5	7	0	12	32
% Cars	88.9	0	100	90.0	100	100	0	100	100	100	0	100	97.0
Heavy Vehicles	1	0	0	1	0	0	0	0	0	0	0	0	1
% Heavy Vehicles	11.1	0	0	10.0	0	0	0	0	0	0	0	0	3.0



N/S: Mirwa Haul Road
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City, State: Quincy, MA
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Groups Printed- Cars - Heavy Vehicles

	Mirwa Haul Road From North			Victory Road Extension From East			Mirwa Haul Road From South			
Start Time	Thru	Left	U-Turn	Right	Left	U-Turn	Right	Thru	U-Turn	Int. Total
04:00 PM	7	0	0	3	3	0	3	6	0	22
04:15 PM	7	3	0	2	3	0	1	6	0	22
04:30 PM	5	1	0	0	6	0	0	6	0	18
04:45 PM	3	1	1	1	4	0	2	4	0	16
Total	22	5	1	6	16	0	6	22	0	78
05:00 PM	8	0	0	0	12	0	1	3	0	24
05:15 PM	4	1	0	4	5	0	1	4	0	19
05:30 PM	3	1	0	0	5	0	1	5	0	15
05:45 PM	1	0	0	0	4	0	3	2	0	10
Total	16	2	0	4	26	0	6	14	0	68
Grand Total	38	7	1	10	42	0	12	36	0	146
Apprch %	82.6	15.2	2.2	19.2	80.8	0	25	75	0	
Total %	26	4.8	0.7	6.8	28.8	0	8.2	24.7	0	
Cars	38	7	1	10	42	0	12	36	0	146
% Cars	100	100	100	100	100	0	100	100	0	100
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0

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

Peak Hour for Entire Intersection Begins at 04:15 PM

	Mirwa Haul Road From North				Victory Road Extension From East				Mirwa Haul Road From South				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
04:15 PM	7	**3**	**0**	**10**	**2**	3	0	5	1	**6**	**0**	**7**	22
04:30 PM	5	1	0	6	0	6	0	6	0	6	0	6	18
04:45 PM	3	1	**1**						**2**	4	0	6	16
05:00 PM	**8**	0	0	8	0	**12**	0	**12**	1	3	0	4	**24**
Total Volume	23	5	1	29	3	25	0	28	4	19	0	23	80
% App. Total	79.3	17.2	3.4		10.7	89.3	0		17.4	82.6	0		
PHF	.719	.417	.250	.725	.375	.521	.000	.583	.500	.792	.000	.821	.833
Cars	23	5	1	29	3	25	0	28	4	19	0	23	80
% Cars	100	100	100	100	100	100	0	100	100	100	0	100	100
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0

N/S: Mirwa Haul Road
E: Victory Road Extension
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Cars

	Mirwa Haul Road From North			Victory Road Extension From East			Mirwa Haul Road From South			
Start Time	Thru	Left	U-Turn	Right	Left	U-Turn	Right	Thru	U-Turn	Int. Total
04:00 PM	7	0	0	3	3	0	3	6	0	22
04:15 PM	7	3	0	2	3	0	1	6	0	22
04:30 PM	5	1	0	0	6	0	0	6	0	18
04:45 PM	3	1	1	1	4	0	2	4	0	16
Total	22	5	1	6	16	0	6	22	0	78
05:00 PM	8	0	0	0	12	0	1	3	0	24
05:15 PM	4	1	0	4	5	0	1	4	0	19
05:30 PM	3	1	0	0	5	0	1	5	0	15
05:45 PM	1	0	0	0	4	0	3	2	0	10
Total	16	2	0	4	26	0	6	14	0	68
Grand Total	38	7	1	10	42	0	12	36	0	146
Apprch %	82.6	15.2	2.2	19.2	80.8	0	25	75	0	
Total %	26	4.8	0.7	6.8	28.8	0	8.2	24.7	0	

	Mirwa Haul Road From North				Victory Road Extension From East				Mirwa Haul Road From South				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	7	**3**	**0**	**10**	**2**	3	0	5	1	**6**	**0**	**7**	22
04:30 PM	5	1	0	6	0	6	0	6	0	6	0	6	18
04:45 PM	3	1	**1**						**2**	4	0	6	16
05:00 PM	**8**	0	0	8	0	**12**	0	**12**	1	3	0	4	**24**
Total Volume	23	5	1	29	3	25	0	28	4	19	0	23	80
% App. Total	79.3	17.2	3.4		10.7	89.3	0		17.4	82.6	0		
PHF	.719	.417	.250	.725	.375	.521	.000	.583	.500	.792	.000	.821	.833

N/S: Mirwa Haul Road
E: Victory Road Extension
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Heavy Vehicles

	Mirwa Haul Road From North			Victory Road Extension From East			Mirwa Haul Road From South			
Start Time	Thru	Left	U-Turn	Right	Left	U-Turn	Right	Thru	U-Turn	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	0	0	0	
Total %										

	Mirwa Haul Road From North				Victory Road Extension From East				Mirwa Haul Road From South				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S: Mirwa Haul Road
E: Victory Road Extension
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Peds and Bicycles

	Mirwa Haul Road From North			Victory Road Extension From East			Mirwa Haul Road From South			
Start Time	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	0	0	0	
Total %										

	Mirwa Haul Road From North				Victory Road Extension From East				Mirwa Haul Road From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S: Mirwa Haul Road
E: Victory Road Extension
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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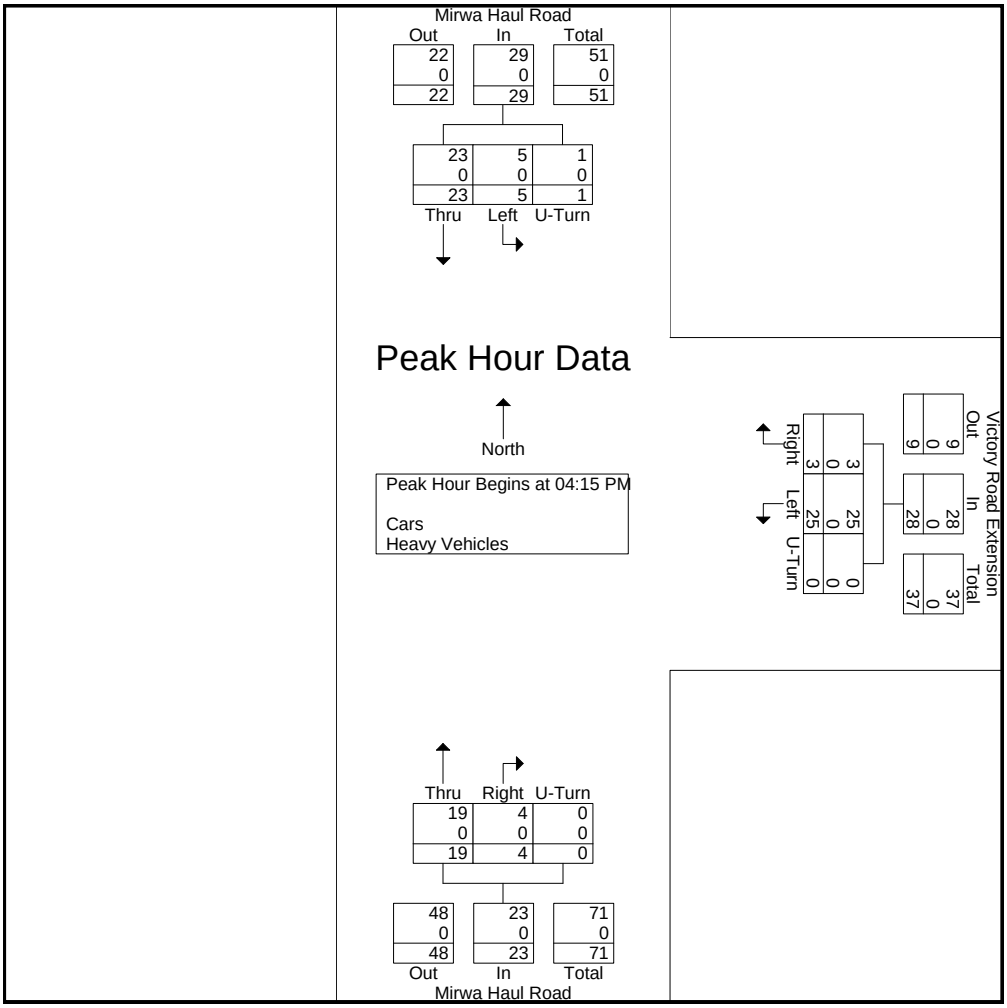
	Mirwa Haul Road From North				Victory Road Extension From East				Mirwa Haul Road From South				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	7	**3**	**0**	**10**	**2**	3	0	5	1	**6**	**0**	**7**	22
04:30 PM	5	1	0	6	0	6	0	6	0	6	0	6	18
04:45 PM	3	1	**1**						**2**	4	0	6	16
05:00 PM	**8**	0	0	8	0	**12**	0	**12**	1	3	0	4	**24**
Total Volume	23	5	1	29	3	25	0	28	4	19	0	23	80
% App. Total	79.3	17.2	3.4		10.7	89.3	0		17.4	82.6	0		
PHF	.719	.417	.250	.725	.375	.521	.000	.583	.500	.792	.000	.821	.833
Cars	23	5	1	29	3	25	0	28	4	19	0	23	80
% Cars	100	100	100	100	100	100	0	100	100	100	0	100	100
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0



N/S: Victory Road
E/W: Tilden Commons Drive/ Mirwa Haul Rd
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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File Name : 122931 B
Site Code : 2011140.
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Groups Printed- Cars - Heavy Vehicles

	Victory Road From North				Tilden Commons Drive From East				Victory Road From South				Mirwa Haul Road From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	12	0	0	1	0	22	0	1	20	2	2	0	0	0	0	60
07:15 AM	0	12	0	0	1	0	11	0	1	27	1	0	0	0	0	0	53
07:30 AM	0	11	0	0	0	0	11	0	2	35	4	0	1	0	0	0	64
07:45 AM	0	13	0	0	0	0	5	0	1	28	4	1	5	0	0	0	57
Total	0	48	0	0	2	0	49	0	5	110	11	3	6	0	0	0	234
08:00 AM	0	7	0	0	1	0	8	0	0	40	2	0	1	1	0	0	60
08:15 AM	0	10	0	0	0	0	6	0	2	30	5	0	2	0	0	0	55
08:30 AM	0	17	0	0	0	0	3	0	0	58	3	0	7	0	0	0	88
08:45 AM	0	12	0	0	0	0	8	0	4	44	6	0	6	0	0	0	80
Total	0	46	0	0	1	0	25	0	6	172	16	0	16	1	0	0	283
Grand Total	0	94	0	0	3	0	74	0	11	282	27	3	22	1	0	0	517
Apprch %	0	100	0	0	3.9	0	96.1	0	3.4	87.3	8.4	0.9	95.7	4.3	0	0	
Total %	0	18.2	0	0	0.6	0	14.3	0	2.1	54.5	5.2	0.6	4.3	0.2	0	0	
Cars	0	84	0	0	3	0	74	0	9	277	23	2	18	1	0	0	491
% Cars	0	89.4	0	0	100	0	100	0	81.8	98.2	85.2	66.7	81.8	100	0	0	95
Heavy Vehicles	0	10	0	0	0	0	0	0	2	5	4	1	4	0	0	0	26
% Heavy Vehicles	0	10.6	0	0	0	0	0	0	18.2	1.8	14.8	33.3	18.2	0	0	0	5

	Victory Road From North					Tilden Commons Drive From East					Victory Road From South					Mirwa Haul Road From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	7	0	0	7	**1**	0	**8**	**0**	**9**	0	40	2	0	42	1	**1**	0	0	2	60
08:15 AM	0	10	0	0	10	0	0	6	0	6	2	30	5	0	37	2	0	0	0	2	55
08:30 AM	0	**17**	0	0	**17**	0	0	3	0	3	0	**58**			**61**	**7**				**7**	**88**
08:45 AM	0	12	0	0	12	0	0	8	0	8	**4**		**6**	0	54	6	0	0	0	6	80
Total Volume	0	46	0	0	46	1	0	25	0	26	6	172	16	0	194	16	1	0	0	17	283
% App. Total	0	100	0	0		3.8	0	96.2	0		3.1	88.7	8.2	0		94.1	5.9	0	0		
PHF	.000	.676	.000	.000	.676	.250	.000	.781	.000	.722	.375	.741	.667	.000	.795	.571	.250	.000	.000	.607	.804
Cars	0	42	0	0	42	1	0	25	0	26	4	170	16	0	190	15	1	0	0	16	274
% Cars	0	91.3	0	0	91.3	100	0	100	0	100	66.7	98.8	100	0	97.9	93.8	100	0	0	94.1	96.8
Heavy Vehicles	0	4	0	0	4	0	0	0	0	0	2	2	0	0	4	1	0	0	0	1	9
% Heavy Vehicles	0	8.7	0	0	8.7	0	0	0	0	0	33.3	1.2	0	0	2.1	6.3	0	0	0	5.9	3.2

N/S: Victory Road
E/W: Tilden Commons Drive/ Mirwa Haul Rd
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Site Code : 2011140.
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Groups Printed- Cars

	Victory Road From North				Tilden Commons Drive From East				Victory Road From South				Mirwa Haul Road From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	10	0	0	1	0	22	0	1	19	1	1	0	0	0	0	55
07:15 AM	0	12	0	0	1	0	11	0	1	26	0	0	0	0	0	0	51
07:30 AM	0	9	0	0	0	0	11	0	2	35	3	0	1	0	0	0	61
07:45 AM	0	11	0	0	0	0	5	0	1	27	3	1	2	0	0	0	50
Total	0	42	0	0	2	0	49	0	5	107	7	2	3	0	0	0	217
08:00 AM	0	7	0	0	1	0	8	0	0	39	2	0	1	1	0	0	59
08:15 AM	0	9	0	0	0	0	6	0	1	29	5	0	2	0	0	0	52
08:30 AM	0	16	0	0	0	0	3	0	0	58	3	0	6	0	0	0	86
08:45 AM	0	10	0	0	0	0	8	0	3	44	6	0	6	0	0	0	77
Total	0	42	0	0	1	0	25	0	4	170	16	0	15	1	0	0	274
Grand Total	0	84	0	0	3	0	74	0	9	277	23	2	18	1	0	0	491
Apprch %	0	100	0	0	3.9	0	96.1	0	2.9	89.1	7.4	0.6	94.7	5.3	0	0	
Total %	0	17.1	0	0	0.6	0	15.1	0	1.8	56.4	4.7	0.4	3.7	0.2	0	0	

	Victory Road From North					Tilden Commons Drive From East					Victory Road From South					Mirwa Haul Road From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	7	0	0	7	**1**	0	**8**	**0**	**9**	0	39	2	0	41	1	**1**	0	0	2	59
08:15 AM	0	9	0	0	9	0	0	6	0	6	1	29	5	0	35	2	0	0	0	2	52
08:30 AM	0	**16**	0	0	**16**	0	0	3	0	3	0	**58**			**61**	**6**				**6**	**86**
08:45 AM	0	10	0	0	10	0	0	8	0	8	**3**		**6**	0	53	6	0	0	0	6	77
Total Volume	0	42	0	0	42	1	0	25	0	26	4	170	16	0	190	15	1	0	0	16	274
% App. Total	0	100	0	0		3.8	0	96.2	0		2.1	89.5	8.4	0		93.8	6.2	0	0		
PHF	.000	.656	.000	.000	.656	.250	.000	.781	.000	.722	.333	.733	.667	.000	.779	.625	.250	.000	.000	.667	.797

N/S: Victory Road
E/W: Tilden Commons Drive/ Mirwa Haul Rd
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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File Name : 122931 B
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Heavy Vehicles

	Victory Road From North				Tilden Commons Drive From East				Victory Road From South				Mirwa Haul Road From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	2	0	0	0	0	0	0	0	1	1	1	0	0	0	0	5
07:15 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
07:30 AM	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3
07:45 AM	0	2	0	0	0	0	0	0	0	1	1	0	3	0	0	0	7
Total	0	6	0	0	0	0	0	0	0	3	4	1	3	0	0	0	17
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
08:15 AM	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3
08:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
08:45 AM	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
Total	0	4	0	0	0	0	0	0	2	2	0	0	1	0	0	0	9
Grand Total	0	10	0	0	0	0	0	0	2	5	4	1	4	0	0	0	26
Apprch %	0	100	0	0	0	0	0	0	16.7	41.7	33.3	8.3	100	0	0	0	
Total %	0	38.5	0	0	0	0	0	0	7.7	19.2	15.4	3.8	15.4	0	0	0	

	Victory Road From North					Tilden Commons Drive From East					Victory Road From South					Mirwa Haul Road From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	**2**	0	0	**2**	0	0	0	0	0	0	**1**	**1**	**1**	**3**	0	0	0	0	0	5
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2
07:30 AM	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
07:45 AM	0	2	0	0	2	0	0	0	0	0	0	1	1	0	2	**3**				**3**	**7**
Total Volume	0	6	0	0	6	0	0	0	0	0	0	3	4	1	8	3	0	0	0	3	17
% App. Total	0	100	0	0		0	0	0	0		0	37.5	50	12.5		100	0	0	0		
PHF	.000	.750	.000	.000	.750	.000	.000	.000	.000	.000	.000	.750	1.00	.250	.667	.250	.000	.000	.000	.250	.607

N/S: Victory Road
E/W: Tilden Commons Drive/ Mirwa Haul Rd
City, State: Quincy, MA
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Site Code : 2011140.
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Groups Printed- Peds and Bicycles

	Victory Road From North				Tilden Commons Drive From East				Victory Road From South				Mirwa Haul Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	4
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	4
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	3	5
Apprch %	0	0	0	0	0	0	0	100	0	0	0	100	0	0	0	100	
Total %	0	0	0	0	0	0	0	20	0	0	0	20	0	0	0	60	

	Victory Road From North					Tilden Commons Drive From East					Victory Road From South					Mirwa Haul Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	**3**	**3**	**4**
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	3	3	4
% App. Total	0	0	0	0		0	0	0	100		0	0	0	0		0	0	0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250

N/S: Victory Road
E/W: Tilden Commons Drive/ Mirwa Haul Rd
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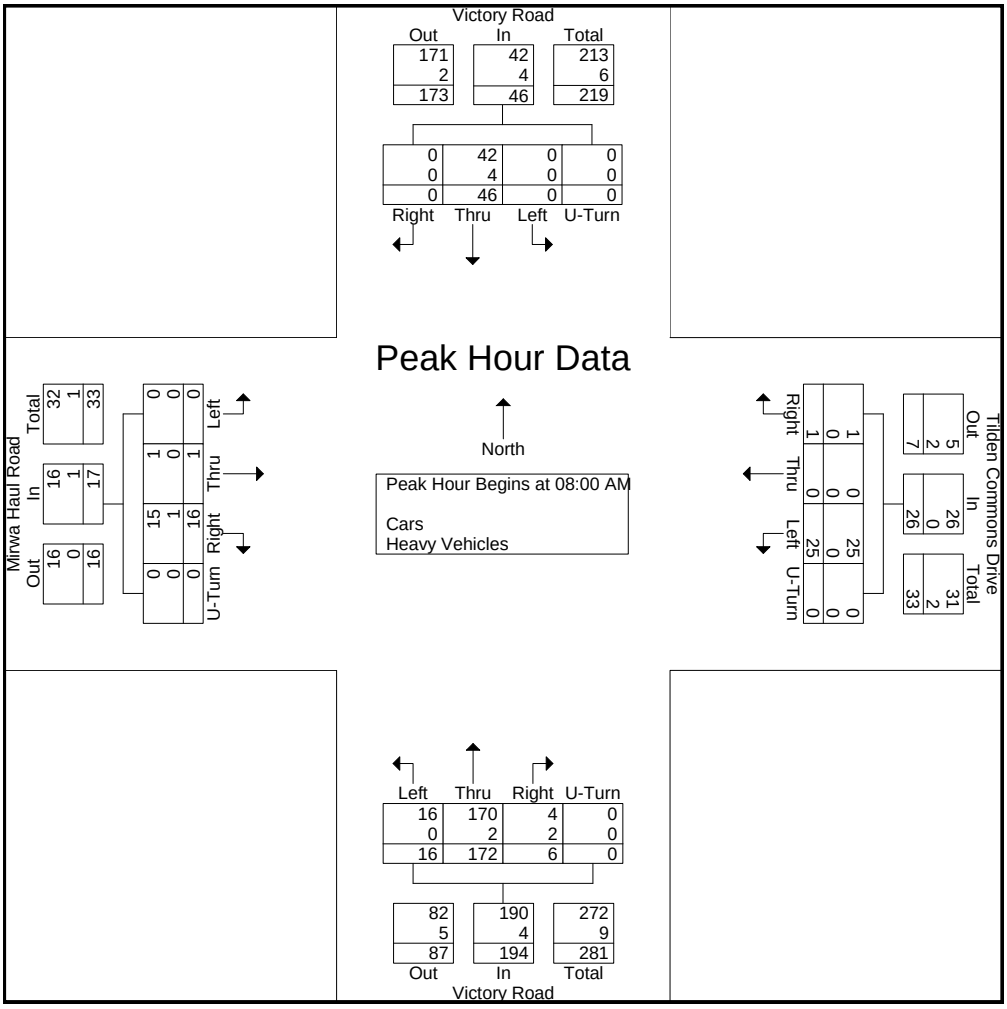
	Victory Road From North					Tilden Commons Drive From East					Victory Road From South					Mirwa Haul Road From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	7	0	0	7	**1**	0	**8**	**0**	**9**	0	40	2	0	42	1	**1**	0	0	2	60
08:15 AM	0	10	0	0	10	0	0	6	0	6	2	30	5	0	37	2	0	0	0	2	55
08:30 AM	0	**17**	0	0	**17**	0	0	3	0	3	0	**58**			**61**	**7**				**7**	**88**
08:45 AM	0	12	0	0	12	0	0	8	0	8	**4**		**6**	0	54	6	0	0	0	6	80
Total Volume	0	46	0	0	46	1	0	25	0	26	6	172	16	0	194	16	1	0	0	17	283
% App. Total	0	100	0	0		3.8	0	96.2	0		3.1	88.7	8.2	0		94.1	5.9	0	0		
PHF	.000	.676	.000	.000	.676	.250	.000	.781	.000	.722	.375	.741	.667	.000	.795	.571	.250	.000	.000	.607	.804
Cars	0	42	0	0	42	1	0	25	0	26	4	170	16	0	190	15	1	0	0	16	274
% Cars	0	91.3	0	0	91.3	100	0	100	0	100	66.7	98.8	100	0	97.9	93.8	100	0	0	94.1	96.8
Heavy Vehicles	0	4	0	0	4	0	0	0	0	0	2	2	0	0	4	1	0	0	0	1	9
% Heavy Vehicles	0	8.7	0	0	8.7	0	0	0	0	0	33.3	1.2	0	0	2.1	6.3	0	0	0	5.9	3.2



N/S: Victory Road
E/W: Tilden Commons Drive/ Mirwa Haul Rd
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Cars - Heavy Vehicles

	Victory Road From North				Tilden Commons Drive From East				Victory Road From South				Mirwa Haul Road From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	1	40	2	0	0	0	4	0	2	23	8	0	10	0	1	0	91
04:15 PM	1	25	1	0	1	0	4	0	4	24	7	1	9	0	2	0	79
04:30 PM	0	42	0	0	1	0	4	0	4	31	6	0	10	1	2	0	101
04:45 PM	0	37	0	1	0	0	0	0	1	26	6	0	6	0	1	0	78
Total	2	144	3	1	2	0	12	0	11	104	27	1	35	1	6	0	349
05:00 PM	0	70	0	0	0	0	4	0	9	31	5	0	17	0	0	0	136
05:15 PM	0	49	0	0	0	0	4	0	11	31	5	0	12	0	0	0	112
05:30 PM	0	48	0	0	0	0	3	0	6	35	6	0	7	0	2	0	107
05:45 PM	0	22	1	0	0	0	4	0	5	33	7	0	9	0	0	0	81
Total	0	189	1	0	0	0	15	0	31	130	23	0	45	0	2	0	436
Grand Total	2	333	4	1	2	0	27	0	42	234	50	1	80	1	8	0	785
Apprch %	0.6	97.9	1.2	0.3	6.9	0	93.1	0	12.8	71.6	15.3	0.3	89.9	1.1	9	0	
Total %	0.3	42.4	0.5	0.1	0.3	0	3.4	0	5.4	29.8	6.4	0.1	10.2	0.1	1	0	
Cars	2	324	4	1	1	0	25	0	42	228	50	1	80	1	8	0	767
% Cars	100	97.3	100	100	50	0	92.6	0	100	97.4	100	100	100	100	100	0	97.7
Heavy Vehicles	0	9	0	0	1	0	2	0	0	6	0	0	0	0	0	0	18
% Heavy Vehicles	0	2.7	0	0	50	0	7.4	0	0	2.6	0	0	0	0	0	0	2.3

	Victory Road From North					Tilden Commons Drive From East					Victory Road From South					Mirwa Haul Road From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	**70**	0	0	**70**	0	0	**4**	**0**	**4**	9	31	5	0	45	**17**	**0**	**0**	**0**	**17**	**136**
05:15 PM	0	49	0	0	49	0	0	4	0	4	**11**				**47**	12	0	0	0	12	112
05:30 PM	0	48	0	0	48	0	0	3	0	3	6	**35**						**2**			
05:45 PM	**0**	**22**	**1**	**0**	**23**	**0**	**0**	**4**	**0**	**4**	**5**	**33**	**7**	0	45	9	0	0	0	9	81
Total Volume	0	189	1	0	190	0	0	15	0	15	31	130	23	0	184	45	0	2	0	47	436
% App. Total	0	99.5	0.5	0		0	0	100	0		16.8	70.7	12.5	0		95.7	0	4.3	0		
PHF	.000	.675	.250	.000	.679	.000	.000	.938	.000	.938	.705	.929	.821	.000	.979	.662	.000	.250	.000	.691	.801
Cars	0	181	1	0	182	0	0	15	0	15	31	124	23	0	178	45	0	2	0	47	422
% Cars	0	95.8	100	0	95.8	0	0	100	0	100	100	95.4	100	0	96.7	100	0	100	0	100	96.8
Heavy Vehicles	0	8	0	0	8	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	14
% Heavy Vehicles	0	4.2	0	0	4.2	0	0	0	0	0	0	4.6	0	0	3.3	0	0	0	0	0	3.2

N/S: Victory Road
E/W: Tilden Commons Drive/ Mirwa Haul Rd
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

PRECISION DATA INDUSTRIES, LLC
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File Name : 122931 BB
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Cars

	Victory Road From North				Tilden Commons Drive From East				Victory Road From South				Mirwa Haul Road From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	1	40	2	0	0	0	3	0	2	23	8	0	10	0	1	0	90
04:15 PM	1	24	1	0	0	0	4	0	4	24	7	1	9	0	2	0	77
04:30 PM	0	42	0	0	1	0	3	0	4	31	6	0	10	1	2	0	100
04:45 PM	0	37	0	1	0	0	0	0	1	26	6	0	6	0	1	0	78
Total	2	143	3	1	1	0	10	0	11	104	27	1	35	1	6	0	345
05:00 PM	0	69	0	0	0	0	4	0	9	29	5	0	17	0	0	0	133
05:15 PM	0	46	0	0	0	0	4	0	11	31	5	0	12	0	0	0	109
05:30 PM	0	46	0	0	0	0	3	0	6	33	6	0	7	0	2	0	103
05:45 PM	0	20	1	0	0	0	4	0	5	31	7	0	9	0	0	0	77
Total	0	181	1	0	0	0	15	0	31	124	23	0	45	0	2	0	422
Grand Total	2	324	4	1	1	0	25	0	42	228	50	1	80	1	8	0	767
Apprch %	0.6	97.9	1.2	0.3	3.8	0	96.2	0	13.1	71	15.6	0.3	89.9	1.1	9	0	
Total %	0.3	42.2	0.5	0.1	0.1	0	3.3	0	5.5	29.7	6.5	0.1	10.4	0.1	1	0	

	Victory Road From North					Tilden Commons Drive From East					Victory Road From South					Mirwa Haul Road From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	37	0	**1**	**38**	**0**	**0**	**0**	**0**	**0**	**1**	**26**	**6**	0	33	6	0	1	0	7	78
05:00 PM	0	**69**	0	0	**69**	0	0	**4**		**4**	9	29	5	0	43	**17**				**17**	**133**
05:15 PM	0	46	0	0	46	0	0	4	0	4	**11**				**47**	12	0	0	0	12	109
05:30 PM	0	46	0	0	46	0	0	3	0	3	6	**33**						**2**			
Total Volume	0	198	0	1	199	0	0	11	0	11	27	119	22	0	168	42	0	3	0	45	423
% App. Total	0	99.5	0	0.5		0	0	100	0		16.1	70.8	13.1	0		93.3	0	6.7	0		
PHF	.000	.717	.000	.250	.721	.000	.000	.688	.000	.688	.614	.902	.917	.000	.894	.618	.000	.375	.000	.662	.795

N/S: Victory Road
E/W: Tilden Commons Drive/ Mirwa Haul Rd
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

PRECISION DATA INDUSTRIES, LLC
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Groups Printed- Heavy Vehicles

	Victory Road From North				Tilden Commons Drive From East				Victory Road From South				Mirwa Haul Road From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	2	0	0	0	0	0	0	0	0	0	4
05:00 PM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
05:15 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:30 PM	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4
05:45 PM	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4
Total	0	8	0	0	0	0	0	0	0	6	0	0	0	0	0	0	14
Grand Total	0	9	0	0	1	0	2	0	0	6	0	0	0	0	0	0	18
Apprch %	0	100	0	0	33.3	0	66.7	0	0	100	0	0	0	0	0	0	
Total %	0	50	0	0	5.6	0	11.1	0	0	33.3	0	0	0	0	0	0	

	Victory Road From North					Tilden Commons Drive From East					Victory Road From South					Mirwa Haul Road From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	**2**	**0**	**0**	**2**	0	0	0	0	0	3
05:15 PM	0	**3**	0	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:30 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	**4**
05:45 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
Total Volume	0	8	0	0	8	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	14
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
PHF	.000	.667	.000	.000	.667	.000	.000	.000	.000	.000	.000	.750	.000	.000	.750	.000	.000	.000	.000	.000	.875

N/S: Victory Road
E/W: Tilden Commons Drive/ Mirwa Haul Rd
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Peds and Bicycles

	Victory Road From North				Tilden Commons Drive From East				Victory Road From South				Mirwa Haul Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
04:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	2	5
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Total	0	3	0	0	0	0	0	2	0	0	0	0	0	0	0	5	10
05:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	5
Grand Total	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	9	15
Apprch %	0	100	0	0	0	0	0	100	0	0	0	0	0	0	0	100	
Total %	0	20	0	0	0	0	0	20	0	0	0	0	0	0	0	60	

	Victory Road From North					Tilden Commons Drive From East					Victory Road From South					Mirwa Haul Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
04:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	1	0	0	1	0	0	0	**2**	**2**	0	0	0	0	0	0	0	0	**2**	**2**	**5**
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
Total Volume	0	3	0	0	3	0	0	0	2	2	0	0	0	0	0	0	0	0	5	5	10
% App. Total	0	100	0	0		0	0	0	100		0	0	0	0		0	0	0	100		
PHF	.000	.750	.000	.000	.750	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.625	.625	.500

N/S: Victory Road
E/W: Tilden Commons Drive/ Mirwa Haul Rd
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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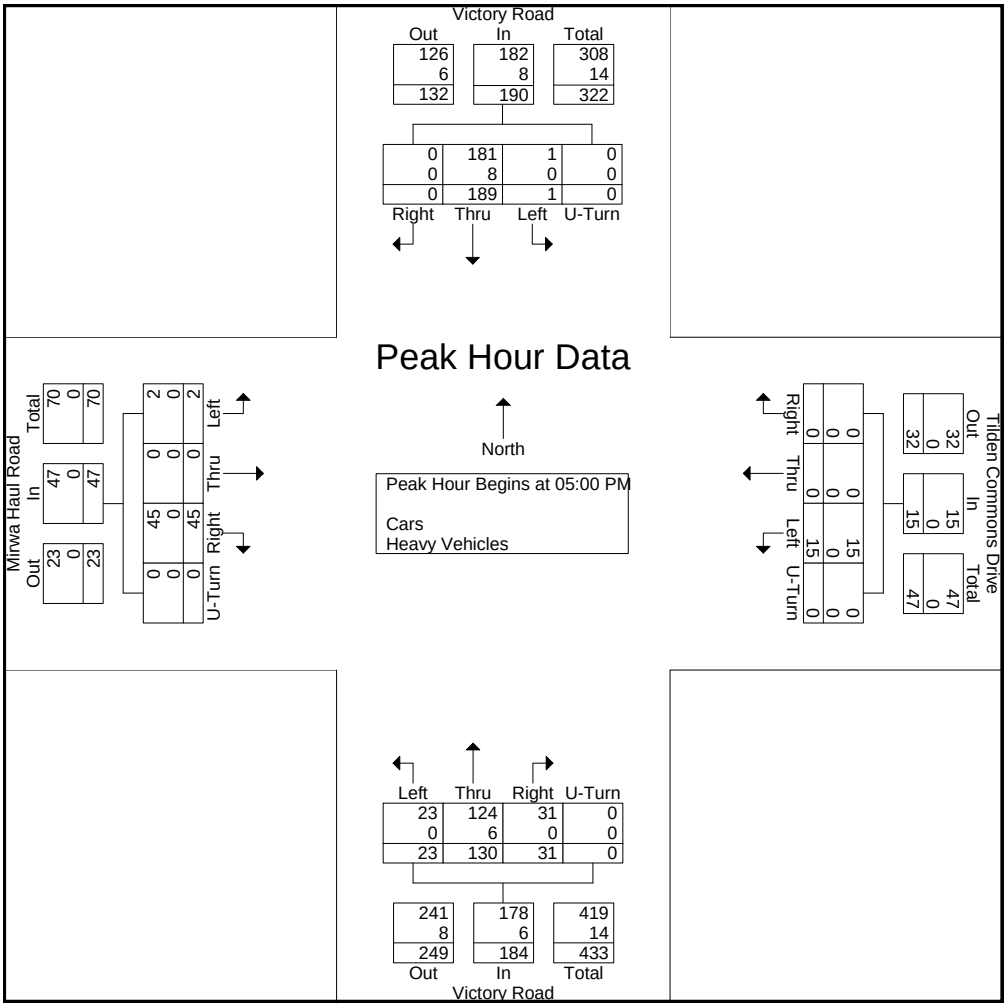
	Victory Road From North					Tilden Commons Drive From East					Victory Road From South					Mirwa Haul Road From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	**70**	0	0	**70**	0	0	**4**	**0**	**4**	9	31	5	0	45	**17**	**0**	**0**	**0**	**17**	**136**
05:15 PM	0	49	0	0	49	0	0	4	0	4	**11**				**47**	12	0	0	0	12	112
05:30 PM	0	48	0	0	48	0	0	3	0	3	6	**35**						**2**			
05:45 PM	**0**	**22**	**1**	**0**	**23**	**0**	**0**	**4**	**0**	**4**	**5**	**33**	**7**	0	45	9	0	0	0	9	81
Total Volume	0	189	1	0	190	0	0	15	0	15	31	130	23	0	184	45	0	2	0	47	436
% App. Total	0	99.5	0.5	0		0	0	100	0		16.8	70.7	12.5	0		95.7	0	4.3	0		
PHF	.000	.675	.250	.000	.679	.000	.000	.938	.000	.938	.705	.929	.821	.000	.979	.662	.000	.250	.000	.691	.801
Cars	0	181	1	0	182	0	0	15	0	15	31	124	23	0	178	45	0	2	0	47	422
% Cars	0	95.8	100	0	95.8	0	0	100	0	100	100	95.4	100	0	96.7	100	0	100	0	100	96.8
Heavy Vehicles	0	8	0	0	8	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	14
% Heavy Vehicles	0	4.2	0	0	4.2	0	0	0	0	0	0	4.6	0	0	3.3	0	0	0	0	0	3.2



N/S: Commander Shea Drive
E/W: Seaport Drive/ Driveway
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Cars - Heavy Vehicles

	Commander Shea Drive From North				Seaport Drive From East				Commander Shea Drive From South				Driveway From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	2	1	0	3	1	128	0	20	13	0	0	1	0	0	0	169
07:15 AM	0	1	0	0	3	0	143	0	23	6	0	0	0	0	0	0	176
07:30 AM	0	1	2	0	4	1	114	17	25	6	0	0	0	1	0	0	171
07:45 AM	0	0	3	0	7	1	72	23	21	11	0	0	0	0	0	0	138
Total	0	4	6	0	17	3	457	40	89	36	0	0	1	1	0	0	654
08:00 AM	0	0	1	0	6	0	76	11	18	9	0	0	0	1	0	0	122
08:15 AM	0	0	2	0	15	0	62	15	19	13	0	0	0	1	0	0	127
08:30 AM	0	1	0	0	5	1	47	15	12	11	0	0	0	0	0	0	92
08:45 AM	0	0	2	0	5	0	45	1	32	18	0	0	0	0	0	0	103
Total	0	1	5	0	31	1	230	42	81	51	0	0	0	2	0	0	444
Grand Total	0	5	11	0	48	4	687	82	170	87	0	0	1	3	0	0	1098
Apprch %	0	31.2	68.8	0	5.8	0.5	83.7	10	66.1	33.9	0	0	25	75	0	0	
Total %	0	0.5	1	0	4.4	0.4	62.6	7.5	15.5	7.9	0	0	0.1	0.3	0	0	
Cars	0	5	4	0	47	2	675	79	156	77	0	0	1	3	0	0	1049
% Cars	0	100	36.4	0	97.9	50	98.3	96.3	91.8	88.5	0	0	100	100	0	0	95.5
Heavy Vehicles	0	0	7	0	1	2	12	3	14	10	0	0	0	0	0	0	49
% Heavy Vehicles	0	0	63.6	0	2.1	50	1.7	3.7	8.2	11.5	0	0	0	0	0	0	4.5

	Commander Shea Drive From North					Seaport Drive From East					Commander Shea Drive From South					Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	**2**	1	0	**3**	3	**1**	**128**	**0**	**132**	**20**	**13**	**0**	**0**	**33**	**1**	**0**	**0**	**0**	**1**	169
07:15 AM	0	1	0	0	1	3	0	**143**		**146**	23	6	0	0	29	0	0	0	0	0	**176**
07:30 AM	0	1	2	0	3	4	1	114	17	136	**25**						**1**	0	0	1	171
07:45 AM	0	0	**3**			**7**	1	72	**23**	103	21	11	0	0	32	0	0	0	0	0	138
Total Volume	0	4	6	0	10	17	3	457	40	517	89	36	0	0	125	1	1	0	0	2	654
% App. Total	0	40	60	0		3.3	0.6	88.4	7.7		71.2	28.8	0	0		50	50	0	0		
PHF	.000	.500	.500	.000	.833	.607	.750	.799	.435	.885	.890	.692	.000	.000	.947	.250	.250	.000	.000	.500	.929
Cars	0	4	1	0	5	16	2	450	38	506	85	31	0	0	116	1	1	0	0	2	629
% Cars	0	100	16.7	0	50.0	94.1	66.7	98.5	95.0	97.9	95.5	86.1	0	0	92.8	100	100	0	0	100	96.2
Heavy Vehicles	0	0	5	0	5	1	1	7	2	11	4	5	0	0	9	0	0	0	0	0	25
% Heavy Vehicles	0	0	83.3	0	50.0	5.9	33.3	1.5	5.0	2.1	4.5	13.9	0	0	7.2	0	0	0	0	0	3.8

N/S: Commander Shea Drive
E/W: Seaport Drive/ Driveway
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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

File Name : 122931 C
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Cars

	Commander Shea Drive From North				Seaport Drive From East				Commander Shea Drive From South				Driveway From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	2	0	0	3	0	126	0	19	11	0	0	1	0	0	0	162
07:15 AM	0	1	0	0	3	0	142	0	22	4	0	0	0	0	0	0	172
07:30 AM	0	1	0	0	3	1	113	17	23	6	0	0	0	1	0	0	165
07:45 AM	0	0	1	0	7	1	69	21	21	10	0	0	0	0	0	0	130
Total	0	4	1	0	16	2	450	38	85	31	0	0	1	1	0	0	629
08:00 AM	0	0	1	0	6	0	74	11	15	9	0	0	0	1	0	0	117
08:15 AM	0	0	1	0	15	0	62	15	15	12	0	0	0	1	0	0	121
08:30 AM	0	1	0	0	5	0	45	14	11	11	0	0	0	0	0	0	87
08:45 AM	0	0	1	0	5	0	44	1	30	14	0	0	0	0	0	0	95
Total	0	1	3	0	31	0	225	41	71	46	0	0	0	2	0	0	420
Grand Total	0	5	4	0	47	2	675	79	156	77	0	0	1	3	0	0	1049
Apprch %	0	55.6	44.4	0	5.9	0.2	84.1	9.8	67	33	0	0	25	75	0	0	
Total %	0	0.5	0.4	0	4.5	0.2	64.3	7.5	14.9	7.3	0	0	0.1	0.3	0	0	

	Commander Shea Drive From North					Seaport Drive From East					Commander Shea Drive From South					Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	**2**	0	0	**2**	3	0	126	0	129	19	**11**	**0**	**0**	**30**	**1**	**0**	**0**	**0**	**1**	162
07:15 AM	0	1	0	0	1	3	0	**142**		**145**	22	4	0	0	26	0	0	0	0	0	**172**
07:30 AM	0	1	0	0	1	3	**1**				**23**						**1**	0	0	1	165
07:45 AM	0	0	**1**			**7**	1	69	**21**	98	21	10	0	0	**31**	0	0	0	0	0	130
Total Volume	0	4	1	0	5	16	2	450	38	506	85	31	0	0	116	1	1	0	0	2	629
% App. Total	0	80	20	0		3.2	0.4	88.9	7.5		73.3	26.7	0	0		50	50	0	0		
PHF	.000	.500	.250	.000	.625	.571	.500	.792	.452	.872	.924	.705	.000	.000	.935	.250	.250	.000	.000	.500	.914

N/S: Commander Shea Drive
E/W: Seaport Drive/ Driveway
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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File Name : 122931 C
Site Code : 2011140.
Start Date : 6/5/2012
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Groups Printed- Heavy Vehicles

	Commander Shea Drive From North				Seaport Drive From East				Commander Shea Drive From South				Driveway From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	0	1	0	0	1	2	0	1	2	0	0	0	0	0	0	7
07:15 AM	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	4
07:30 AM	0	0	2	0	1	0	1	0	2	0	0	0	0	0	0	0	6
07:45 AM	0	0	2	0	0	0	3	2	0	1	0	0	0	0	0	0	8
Total	0	0	5	0	1	1	7	2	4	5	0	0	0	0	0	0	25
08:00 AM	0	0	0	0	0	0	2	0	3	0	0	0	0	0	0	0	5
08:15 AM	0	0	1	0	0	0	0	0	4	1	0	0	0	0	0	0	6
08:30 AM	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	5
08:45 AM	0	0	1	0	0	0	1	0	2	4	0	0	0	0	0	0	8
Total	0	0	2	0	0	1	5	1	10	5	0	0	0	0	0	0	24
Grand Total	0	0	7	0	1	2	12	3	14	10	0	0	0	0	0	0	49
Apprch %	0	0	100	0	5.6	11.1	66.7	16.7	58.3	41.7	0	0	0	0	0	0	
Total %	0	0	14.3	0	2	4.1	24.5	6.1	28.6	20.4	0	0	0	0	0	0	

	Commander Shea Drive From North					Seaport Drive From East					Commander Shea Drive From South					Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	1	0	1	0	**1**	**2**	**0**	**3**	**1**	**2**	**0**	**0**	**3**	0	0	0	0	0	7
07:15 AM	0	0	0	0	0	0	0	1	0	1	1	2	0	0	3	0	0	0	0	0	4
07:30 AM	0	0	**2**		**2**	**1**	0	1	0	2	**2**										
07:45 AM	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**3**	**2**	**5**	0	1	0	0	1	0	0	0	0	0	**8**
Total Volume	0	0	5	0	5	1	1	7	2	11	4	5	0	0	9	0	0	0	0	0	25
% App. Total	0	0	100	0		9.1	9.1	63.6	18.2		44.4	55.6	0	0		0	0	0	0		
PHF	.000	.000	.625	.000	.625	.250	.250	.583	.250	.550	.500	.625	.000	.000	.750	.000	.000	.000	.000	.000	.781

N/S: Commander Shea Drive
E/W: Seaport Drive/ Driveway
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File Name : 122931 C
Site Code : 2011140.
Start Date : 6/5/2012
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Groups Printed- Peds and Bicycles

	Commander Shea Drive From North				Seaport Drive From East				Commander Shea Drive From South				Driveway From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
Apprch %	0	0	0	0	50	0	0	50	0	0	0	0	0	0	0	0	
Total %	0	0	0	0	50	0	0	50	0	0	0	0	0	0	0	0	

	Commander Shea Drive From North					Seaport Drive From East					Commander Shea Drive From South					Driveway From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	**1**	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	**1**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	2
% App. Total	0	0	0	0		50	0	0	50		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.000	.250	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500

N/S: Commander Shea Drive
E/W: Seaport Drive/ Driveway
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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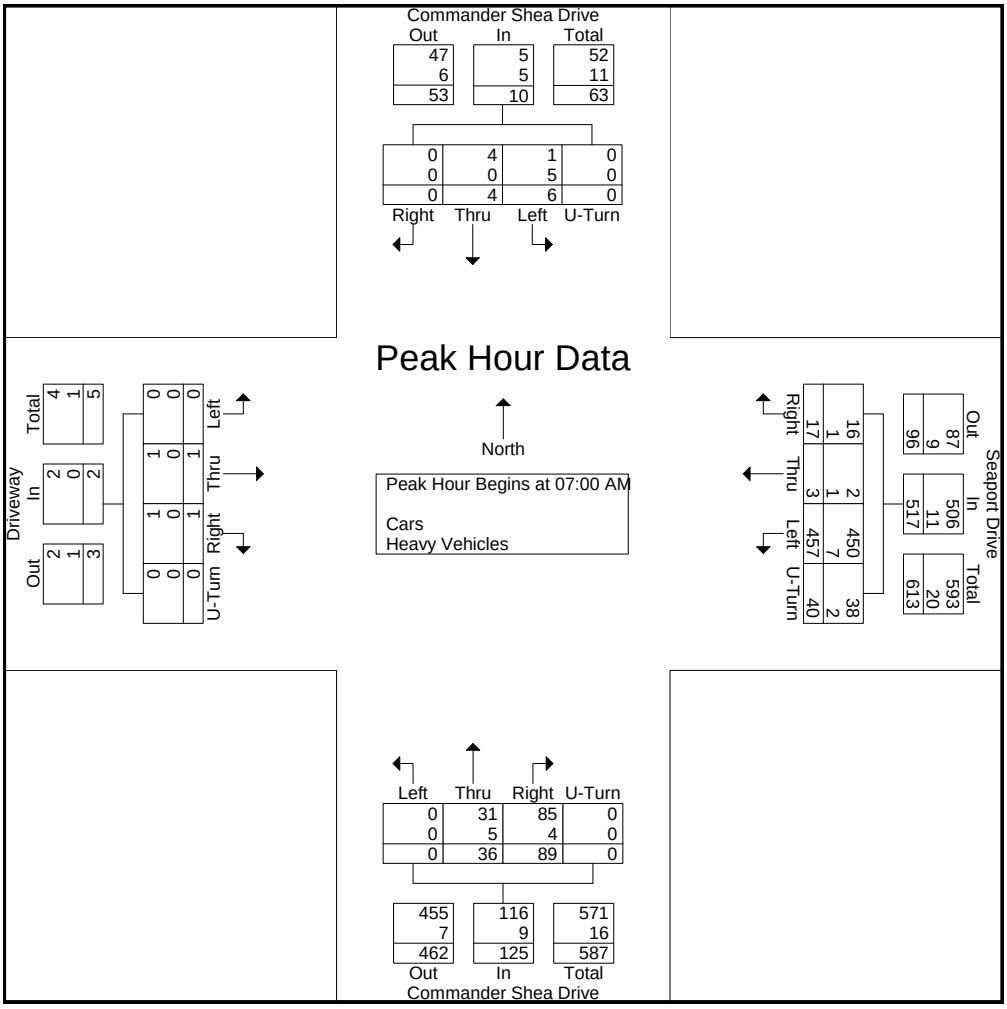
	Commander Shea Drive From North					Seaport Drive From East					Commander Shea Drive From South					Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	**2**	1	0	**3**	3	**1**	**128**	**0**	**132**	**20**	**13**	**0**	**0**	**33**	**1**	**0**	**0**	**0**	**1**	169
07:15 AM	0	1	0	0	1	3	0	**143**		**146**	23	6	0	0	29	0	0	0	0	0	**176**
07:30 AM	0	1	2	0	3	4	1	114	17	136	**25**						**1**	0	0	1	171
07:45 AM	0	0	**3**			**7**	1	72	**23**	103	21	11	0	0	32	0	0	0	0	0	138
Total Volume	0	4	6	0	10	17	3	457	40	517	89	36	0	0	125	1	1	0	0	2	654
% App. Total	0	40	60	0		3.3	0.6	88.4	7.7		71.2	28.8	0	0		50	50	0	0		
PHF	.000	.500	.500	.000	.833	.607	.750	.799	.435	.885	.890	.692	.000	.000	.947	.250	.250	.000	.000	.500	.929
Cars	0	4	1	0	5	16	2	450	38	506	85	31	0	0	116	1	1	0	0	2	629
% Cars	0	100	16.7	0	50.0	94.1	66.7	98.5	95.0	97.9	95.5	86.1	0	0	92.8	100	100	0	0	100	96.2
Heavy Vehicles	0	0	5	0	5	1	1	7	2	11	4	5	0	0	9	0	0	0	0	0	25
% Heavy Vehicles	0	0	83.3	0	50.0	5.9	33.3	1.5	5.0	2.1	4.5	13.9	0	0	7.2	0	0	0	0	0	3.8



N/S: Commander Shea Drive
E/W: Seaport Drive/ Driveway
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

PRECISION DATA INDUSTRIES, LLC
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File Name : 122931 CC
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Commander Shea Drive From North				Seaport Drive From East				Commander Shea Drive From South				Driveway From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	0	16	1	0	1	0	28	0	29	4	0	1	0	0	0	0	80
04:15 PM	0	8	3	0	0	0	19	0	26	6	0	0	0	0	0	0	62
04:30 PM	0	16	6	0	1	0	34	0	32	3	0	1	0	0	0	0	93
04:45 PM	0	9	1	0	1	0	30	0	32	3	0	0	0	0	0	0	76
Total	0	49	11	0	3	0	111	0	119	16	0	2	0	0	0	0	311
05:00 PM	0	27	9	0	1	0	39	0	29	4	2	0	1	0	0	0	112
05:15 PM	0	16	2	0	1	0	32	1	52	2	1	0	0	0	0	0	107
05:30 PM	1	17	2	0	1	0	35	0	50	6	0	0	1	0	0	0	113
05:45 PM	0	12	3	0	2	0	25	0	33	3	0	0	0	0	0	0	78
Total	1	72	16	0	5	0	131	1	164	15	3	0	2	0	0	0	410
Grand Total	1	121	27	0	8	0	242	1	283	31	3	2	2	0	0	0	721
Apprch %	0.7	81.2	18.1	0	3.2	0	96.4	0.4	88.7	9.7	0.9	0.6	100	0	0	0	
Total %	0.1	16.8	3.7	0	1.1	0	33.6	0.1	39.3	4.3	0.4	0.3	0.3	0	0	0	
Cars	1	106	27	0	0	0	238	1	274	21	3	2	2	0	0	0	675
% Cars	100	87.6	100	0	0	0	98.3	100	96.8	67.7	100	100	100	0	0	0	93.6
Heavy Vehicles	0	15	0	0	8	0	4	0	9	10	0	0	0	0	0	0	46
% Heavy Vehicles	0	12.4	0	0	100	0	1.7	0	3.2	32.3	0	0	0	0	0	0	6.4

	Commander Shea Drive From North					Seaport Drive From East					Commander Shea Drive From South					Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	**27**	**9**	**0**	**36**	1	0	**39**	**0**	**40**	29	4	**2**	0	35	**1**	**0**	**0**	**0**	**1**	112
05:15 PM	0	16	2	0	18	1	0	32	**1**	34	**52**										
05:30 PM	**1**	**17**	**2**	**0**	**20**	**1**	**0**	**35**	**0**	**36**	**50**	**6**	**0**	**0**	**56**	1	0	0	0	1	**113**
05:45 PM	0	12	3	0	15	**2**	0	25	0	27	33	3	0	0	36	0	0	0	0	0	78
Total Volume	1	72	16	0	89	5	0	131	1	137	164	15	3	0	182	2	0	0	0	2	410
% App. Total	1.1	80.9	18	0		3.6	0	95.6	0.7		90.1	8.2	1.6	0		100	0	0	0		
PHF	.250	.667	.444	.000	.618	.625	.000	.840	.250	.856	.788	.625	.375	.000	.813	.500	.000	.000	.000	.500	.907
Cars	1	64	16	0	81	0	0	127	1	128	159	10	3	0	172	2	0	0	0	2	383
% Cars	100	88.9	100	0	91.0	0	0	96.9	100	93.4	97.0	66.7	100	0	94.5	100	0	0	0	100	93.4
Heavy Vehicles	0	8	0	0	8	5	0	4	0	9	5	5	0	0	10	0	0	0	0	0	27
% Heavy Vehicles	0	11.1	0	0	9.0	100	0	3.1	0	6.6	3.0	33.3	0	0	5.5	0	0	0	0	0	6.6

N/S: Commander Shea Drive
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Page No : 1

Groups Printed- Cars

	Commander Shea Drive From North				Seaport Drive From East				Commander Shea Drive From South				Driveway From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	0	16	1	0	0	0	28	0	28	3	0	1	0	0	0	0	77
04:15 PM	0	6	3	0	0	0	19	0	25	6	0	0	0	0	0	0	59
04:30 PM	0	14	6	0	0	0	34	0	31	2	0	1	0	0	0	0	88
04:45 PM	0	6	1	0	0	0	30	0	31	0	0	0	0	0	0	0	68
Total	0	42	11	0	0	0	111	0	115	11	0	2	0	0	0	0	292
05:00 PM	0	26	9	0	0	0	38	0	29	3	2	0	1	0	0	0	108
05:15 PM	0	12	2	0	0	0	32	1	51	0	1	0	0	0	0	0	99
05:30 PM	1	15	2	0	0	0	34	0	47	4	0	0	1	0	0	0	104
05:45 PM	0	11	3	0	0	0	23	0	32	3	0	0	0	0	0	0	72
Total	1	64	16	0	0	0	127	1	159	10	3	0	2	0	0	0	383
Grand Total	1	106	27	0	0	0	238	1	274	21	3	2	2	0	0	0	675
Apprch %	0.7	79.1	20.1	0	0	0	99.6	0.4	91.3	7	1	0.7	100	0	0	0	
Total %	0.1	15.7	4	0	0	0	35.3	0.1	40.6	3.1	0.4	0.3	0.3	0	0	0	

	Commander Shea Drive From North					Seaport Drive From East					Commander Shea Drive From South					Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	**26**	**9**	**0**	**35**	0	0	**38**	**0**	**38**	29	3	**2**	0	34	**1**	**0**	**0**	**0**	**1**	**108**
05:15 PM	0	12	2	0	14	0	0	32	**1**	33	**51**				**52**	0	0	0	0	0	99
05:30 PM	**1**											**4**									
05:45 PM	**0**	**11**	**3**	**0**	**14**	**0**	**0**	**23**	**0**	**23**	**32**	**3**	**0**	**0**	**35**	**0**	**0**	**0**	**0**	**0**	**72**
Total Volume	1	64	16	0	81	0	0	127	1	128	159	10	3	0	172	2	0	0	0	2	383
% App. Total	1.2	79	19.8	0		0	0	99.2	0.8		92.4	5.8	1.7	0		100	0	0	0		
PHF	.250	.615	.444	.000	.579	.000	.000	.836	.250	.842	.779	.625	.375	.000	.827	.500	.000	.000	.000	.500	.887

N/S: Commander Shea Drive
E/W: Seaport Drive/ Driveway
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

PRECISION DATA INDUSTRIES, LLC
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File Name : 122931 CC
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Heavy Vehicles

	Commander Shea Drive From North				Seaport Drive From East				Commander Shea Drive From South				Driveway From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	3
04:15 PM	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
04:30 PM	0	2	0	0	1	0	0	0	1	1	0	0	0	0	0	0	5
04:45 PM	0	3	0	0	1	0	0	0	1	3	0	0	0	0	0	0	8
Total	0	7	0	0	3	0	0	0	4	5	0	0	0	0	0	0	19
05:00 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	4
05:15 PM	0	4	0	0	1	0	0	0	1	2	0	0	0	0	0	0	8
05:30 PM	0	2	0	0	1	0	1	0	3	2	0	0	0	0	0	0	9
05:45 PM	0	1	0	0	2	0	2	0	1	0	0	0	0	0	0	0	6
Total	0	8	0	0	5	0	4	0	5	5	0	0	0	0	0	0	27
Grand Total	0	15	0	0	8	0	4	0	9	10	0	0	0	0	0	0	46
Apprch %	0	100	0	0	66.7	0	33.3	0	47.4	52.6	0	0	0	0	0	0	
Total %	0	32.6	0	0	17.4	0	8.7	0	19.6	21.7	0	0	0	0	0	0	

	Commander Shea Drive From North					Seaport Drive From East					Commander Shea Drive From South					Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	3	0	0	3	**1**	0	0	0	1	1	**3**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**8**
05:00 PM	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**2**	0	1	0	0	1	0	0	0	0	0	4
05:15 PM	0	**4**	0	0	**4**	1	0	0	0	1	1	2	0	0	3	0	0	0	0	0	8
05:30 PM	0	2	0	0	2	1	0	1	0	2	**3**				**5**	0	0	0	0	0	**9**
Total Volume	0	10	0	0	10	4	0	2	0	6	5	8	0	0	13	0	0	0	0	0	29
% App. Total	0	100	0	0		66.7	0	33.3	0		38.5	61.5	0	0		0	0	0	0		
PHF	.000	.625	.000	.000	.625	1.00	.000	.500	.000	.750	.417	.667	.000	.000	.650	.000	.000	.000	.000	.000	.806

N/S: Commander Shea Drive
E/W: Seaport Drive/ Driveway
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Groups Printed- Peds and Bicycles

	Commander Shea Drive From North				Seaport Drive From East				Commander Shea Drive From South				Driveway From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	1	6
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	1	7
Apprch %	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	
Total %	0	0	0	0	0	0	0	85.7	0	0	0	0	0	0	0	14.3	

	Commander Shea Drive From North					Seaport Drive From East					Commander Shea Drive From South					Driveway From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	**2**	**2**	0	0	0	0	0	0	0	0	0	0	**2**
04:30 PM	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	1
Total Volume	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	1	1	6
% App. Total	0	0	0	0		0	0	0	100		0	0	0	0		0	0	0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.625	.625	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.750

N/S: Commander Shea Drive
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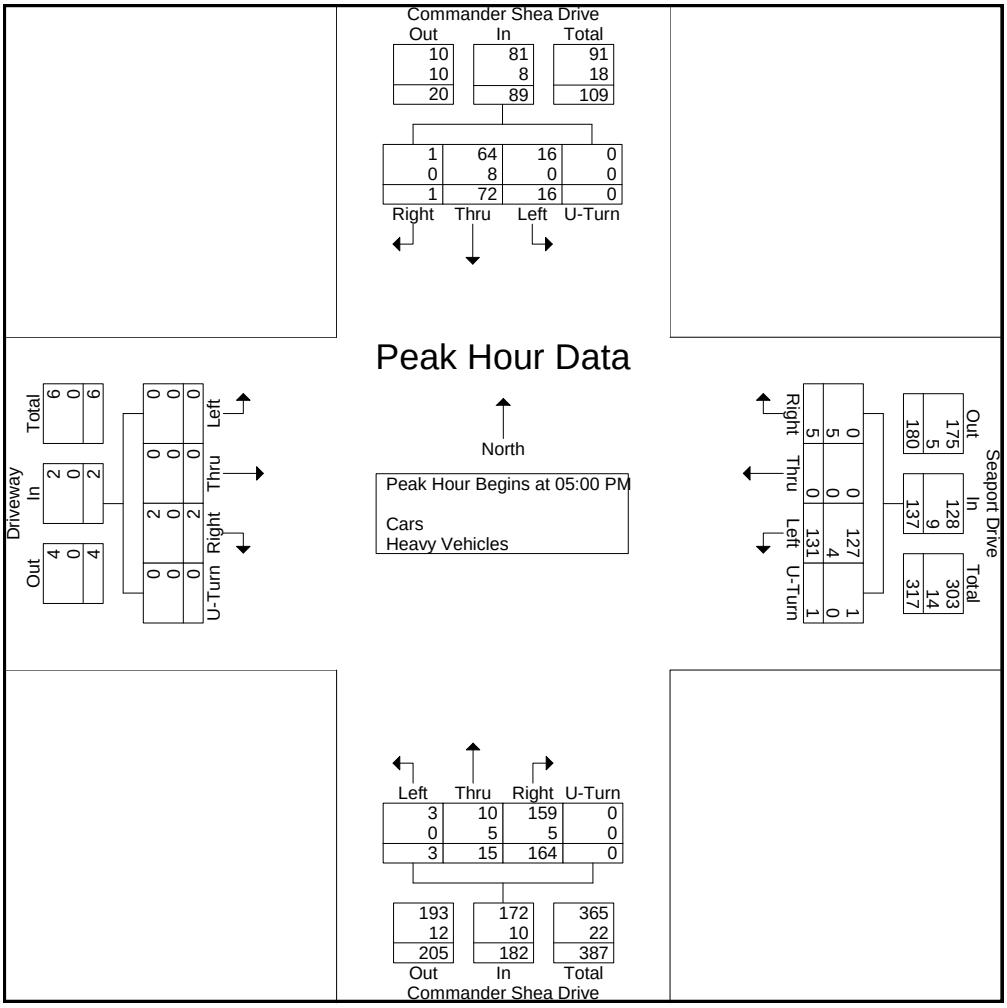
	Commander Shea Drive From North					Seaport Drive From East					Commander Shea Drive From South					Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	**27**	**9**	**0**	**36**	1	0	**39**	**0**	**40**	29	4	**2**	0	35	**1**	**0**	**0**	**0**	**1**	112
05:15 PM	0	16	2	0	18	1	0	32	**1**	34	**52**										
05:30 PM	**1**	**17**	**2**	**0**	**20**	**1**	**0**	**35**	**0**	**36**	**50**	**6**	**0**	**0**	**56**	1	0	0	0	1	**113**
05:45 PM	0	12	3	0	15	**2**	0	25	0	27	33	3	0	0	36	0	0	0	0	0	78
Total Volume	1	72	16	0	89	5	0	131	1	137	164	15	3	0	182	2	0	0	0	2	410
% App. Total	1.1	80.9	18	0		3.6	0	95.6	0.7		90.1	8.2	1.6	0		100	0	0	0		
PHF	.250	.667	.444	.000	.618	.625	.000	.840	.250	.856	.788	.625	.375	.000	.813	.500	.000	.000	.000	.500	.907
Cars	1	64	16	0	81	0	0	127	1	128	159	10	3	0	172	2	0	0	0	2	383
% Cars	100	88.9	100	0	91.0	0	0	96.9	100	93.4	97.0	66.7	100	0	94.5	100	0	0	0	100	93.4
Heavy Vehicles	0	8	0	0	8	5	0	4	0	9	5	5	0	0	10	0	0	0	0	0	27
% Heavy Vehicles	0	11.1	0	0	9.0	100	0	3.1	0	6.6	3.0	33.3	0	0	5.5	0	0	0	0	0	6.6



N/S: East Squantum Street
W: Victory Road
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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File Name : 122931 D
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	East Squantum Street From North			East Squantum Street From South			Victory Road From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
07:00 AM	47	67	0	43	79	0	21	1	1	259
07:15 AM	19	67	0	41	104	0	32	0	0	263
07:30 AM	34	78	0	54	94	0	59	3	0	322
07:45 AM	26	80	0	59	79	0	69	5	0	318
Total	126	292	0	197	356	0	181	9	1	1162
08:00 AM	18	83	0	81	111	0	51	4	0	348
08:15 AM	17	123	0	96	95	0	56	3	0	390
08:30 AM	16	86	0	61	99	0	58	2	0	322
08:45 AM	15	51	0	48	82	0	46	1	0	243
Total	66	343	0	286	387	0	211	10	0	1303
Grand Total	192	635	0	483	743	0	392	19	1	2465
Apprch %	23.2	76.8	0	39.4	60.6	0	95.1	4.6	0.2	
Total %	7.8	25.8	0	19.6	30.1	0	15.9	0.8	0	
Cars	191	604	0	447	731	0	376	17	1	2367
% Cars	99.5	95.1	0	92.5	98.4	0	95.9	89.5	100	96
Heavy Vehicles	1	31	0	36	12	0	16	2	0	98
% Heavy Vehicles	0.5	4.9	0	7.5	1.6	0	4.1	10.5	0	4

	East Squantum Street From North				East Squantum Street From South				Victory Road From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	**34**	78	0	112	54	94	0	148	59	3	0	62	322
07:45 AM	26	80	0	106	59	79	0	138	**69**	**5**		**74**	318
08:00 AM	18	83	0	101	81	**111**	0	**192**	51	4	0	55	348
08:15 AM	17	**123**		**140**	**96**	95	0	191	56	3	0	59	**390**
Total Volume	95	364	0	459	290	379	0	669	235	15	0	250	1378
% App. Total	20.7	79.3	0		43.3	56.7	0		94	6	0		
PHF	.699	.740	.000	.820	.755	.854	.000	.871	.851	.750	.000	.845	.883
Cars	94	345	0	439	270	372	0	642	225	13	0	238	1319
% Cars	98.9	94.8	0	95.6	93.1	98.2	0	96.0	95.7	86.7	0	95.2	95.7
Heavy Vehicles	1	19	0	20	20	7	0	27	10	2	0	12	59
% Heavy Vehicles	1.1	5.2	0	4.4	6.9	1.8	0	4.0	4.3	13.3	0	4.8	4.3

N/S: East Squantum Street
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File Name : 122931 D
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Groups Printed- Cars

	East Squantum Street From North			East Squantum Street From South			Victory Road From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
07:00 AM	47	65	0	39	77	0	20	1	1	250
07:15 AM	19	66	0	34	104	0	32	0	0	255
07:30 AM	34	73	0	49	93	0	57	3	0	309
07:45 AM	26	75	0	54	75	0	67	5	0	302
Total	126	279	0	176	349	0	176	9	1	1116
08:00 AM	17	82	0	76	110	0	48	3	0	336
08:15 AM	17	115	0	91	94	0	53	2	0	372
08:30 AM	16	80	0	58	97	0	56	2	0	309
08:45 AM	15	48	0	46	81	0	43	1	0	234
Total	65	325	0	271	382	0	200	8	0	1251
Grand Total	191	604	0	447	731	0	376	17	1	2367
Apprch %	24	76	0	37.9	62.1	0	95.4	4.3	0.3	
Total %	8.1	25.5	0	18.9	30.9	0	15.9	0.7	0	

	East Squantum Street From North				East Squantum Street From South				Victory Road From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	**34**	73	0	107	49	93	0	142	57	3	0	60	309
07:45 AM	26	75	0	101	54	75	0	129	**67**	**5**		**72**	302
08:00 AM	17	82	0	99	76	**110**	0	**186**	48	3	0	51	336
08:15 AM	17	**115**		**132**	**91**	94	0	185	53	2	0	55	**372**
Total Volume	94	345	0	439	270	372	0	642	225	13	0	238	1319
% App. Total	21.4	78.6	0		42.1	57.9	0		94.5	5.5	0		
PHF	.691	.750	.000	.831	.742	.845	.000	.863	.840	.650	.000	.826	.886

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Start Date : 6/5/2012
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Groups Printed- Heavy Vehicles

	East Squantum Street From North			East Squantum Street From South			Victory Road From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
07:00 AM	0	2	0	4	2	0	1	0	0	9
07:15 AM	0	1	0	7	0	0	0	0	0	8
07:30 AM	0	5	0	5	1	0	2	0	0	13
07:45 AM	0	5	0	5	4	0	2	0	0	16
Total	0	13	0	21	7	0	5	0	0	46
08:00 AM	1	1	0	5	1	0	3	1	0	12
08:15 AM	0	8	0	5	1	0	3	1	0	18
08:30 AM	0	6	0	3	2	0	2	0	0	13
08:45 AM	0	3	0	2	1	0	3	0	0	9
Total	1	18	0	15	5	0	11	2	0	52
Grand Total	1	31	0	36	12	0	16	2	0	98
Apprch %	3.1	96.9	0	75	25	0	88.9	11.1	0	
Total %	1	31.6	0	36.7	12.2	0	16.3	2	0	

	East Squantum Street From North				East Squantum Street From South				Victory Road From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	0	5	0	5	**5**	1	0	6	2	0	0	2	13
07:45 AM	0	5	0	5	5	**4**	0	**9**	2	0	0	2	16
08:00 AM	**1**	1	0	2	5	1	0	6	**3**	**1**		**4**	12
08:15 AM	0	**8**		**8**	5	1	0	6	3	1	0	4	**18**
Total Volume	1	19	0	20	20	7	0	27	10	2	0	12	59
% App. Total	5	95	0		74.1	25.9	0		83.3	16.7	0		
PHF	.250	.594	.000	.625	1.00	.438	.000	.750	.833	.500	.000	.750	.819

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Groups Printed- Peds and Bicycles

	East Squantum Street From North			East Squantum Street From South			Victory Road From West			
Start Time	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	Int. Total
07:00 AM	0	0	0	0	0	1	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	1	0	0	0	0	0	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	1	1
Total	0	1	0	0	0	0	0	0	2	3
Grand Total	0	1	0	0	0	1	0	0	2	4
Apprch %	0	100	0	0	0	100	0	0	100	
Total %	0	25	0	0	0	25	0	0	50	

	East Squantum Street From North				East Squantum Street From South				Victory Road From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	**1**	**0**	**1**	0	0	0	0	0	0	**1**	**1**	**2**
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	1
Total Volume	0	1	0	1	0	0	0	0	0	0	2	2	3
% App. Total	0	100	0		0	0	0		0	0	100		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.500	.500	.375

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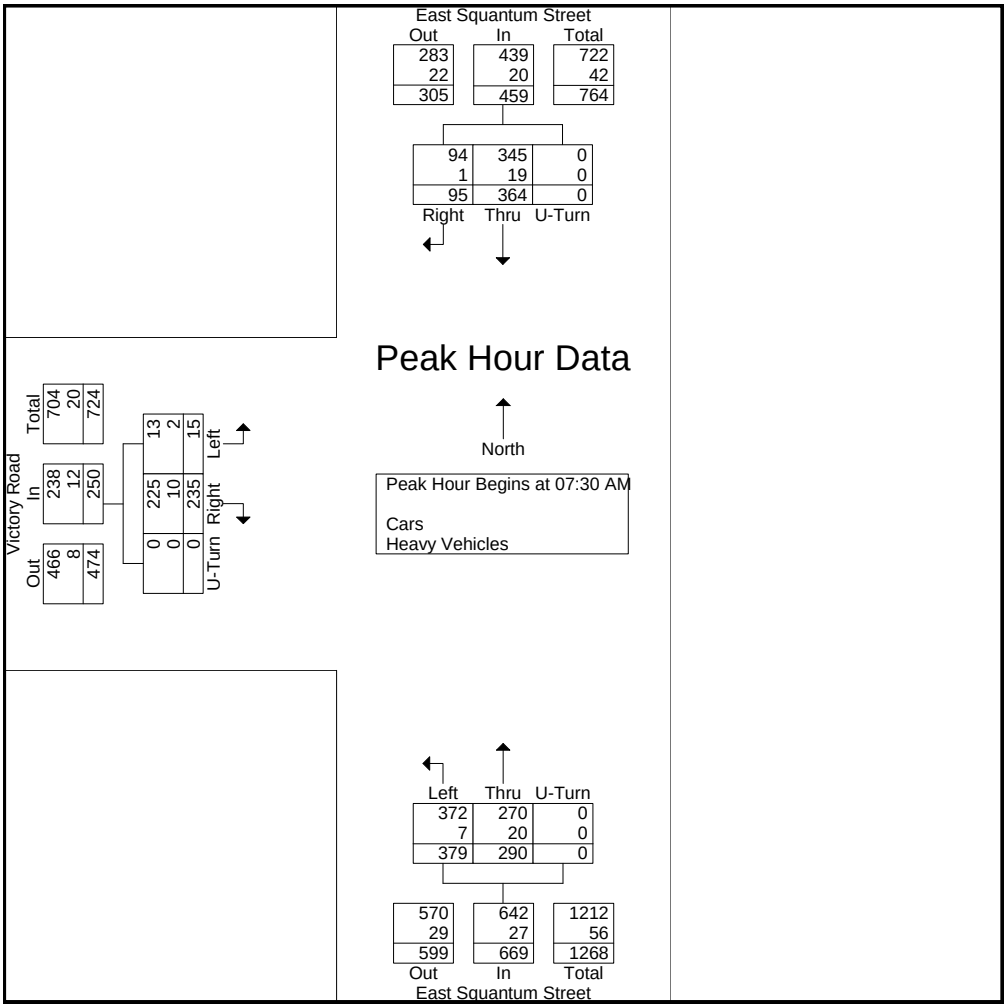
	East Squantum Street From North				East Squantum Street From South				Victory Road From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	**34**	78	0	112	54	94	0	148	59	3	0	62	322
07:45 AM	26	80	0	106	59	79	0	138	**69**	**5**		**74**	318
08:00 AM	18	83	0	101	81	**111**	0	**192**	51	4	0	55	348
08:15 AM	17	**123**		**140**	**96**	95	0	191	56	3	0	59	**390**
Total Volume	95	364	0	459	290	379	0	669	235	15	0	250	1378
% App. Total	20.7	79.3	0		43.3	56.7	0		94	6	0		
PHF	.699	.740	.000	.820	.755	.854	.000	.871	.851	.750	.000	.845	.883
Cars	94	345	0	439	270	372	0	642	225	13	0	238	1319
% Cars	98.9	94.8	0	95.6	93.1	98.2	0	96.0	95.7	86.7	0	95.2	95.7
Heavy Vehicles	1	19	0	20	20	7	0	27	10	2	0	12	59
% Heavy Vehicles	1.1	5.2	0	4.4	6.9	1.8	0	4.0	4.3	13.3	0	4.8	4.3



N/S: East Squantum Street
W: Victory Road
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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File Name : 122931 DD
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Groups Printed- Cars - Heavy Vehicles

	East Squantum Street From North			East Squantum Street From South			Victory Road From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
04:00 PM	6	71	0	83	34	0	36	20	0	250
04:15 PM	6	70	0	77	34	0	36	6	0	229
04:30 PM	10	80	0	74	37	0	63	8	0	272
04:45 PM	2	56	0	89	43	0	37	10	0	237
Total	24	277	0	323	148	0	172	44	0	988
05:00 PM	8	64	0	87	36	0	89	8	0	292
05:15 PM	6	71	0	84	38	0	63	8	0	270
05:30 PM	8	78	0	81	32	0	49	9	0	257
05:45 PM	5	55	0	77	51	0	35	7	0	230
Total	27	268	0	329	157	0	236	32	0	1049
Grand Total	51	545	0	652	305	0	408	76	0	2037
Apprch %	8.6	91.4	0	68.1	31.9	0	84.3	15.7	0	
Total %	2.5	26.8	0	32	15	0	20	3.7	0	
Cars	49	528	0	642	299	0	402	75	0	1995
% Cars	96.1	96.9	0	98.5	98	0	98.5	98.7	0	97.9
Heavy Vehicles	2	17	0	10	6	0	6	1	0	42
% Heavy Vehicles	3.9	3.1	0	1.5	2	0	1.5	1.3	0	2.1

	East Squantum Street From North				East Squantum Street From South				Victory Road From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	**10**	**80**	**0**	**90**	74	37	0	111	63	8	0	71	272
04:45 PM	2	56	0	58	**89**	**43**	0	**132**	37	**10**			
05:00 PM	**8**	**64**	**0**	**72**	**87**	**36**	**0**	**123**	**89**	8	0	**97**	**292**
05:15 PM	6	71	0	77	84	38	0	122	63	8	0	71	270
Total Volume	26	271	0	297	334	154	0	488	252	34	0	286	1071
% App. Total	8.8	91.2	0		68.4	31.6	0		88.1	11.9	0		
PHF	.650	.847	.000	.825	.938	.895	.000	.924	.708	.850	.000	.737	.917
Cars	24	266	0	290	328	152	0	480	248	33	0	281	1051
% Cars	92.3	98.2	0	97.6	98.2	98.7	0	98.4	98.4	97.1	0	98.3	98.1
Heavy Vehicles	2	5	0	7	6	2	0	8	4	1	0	5	20
% Heavy Vehicles	7.7	1.8	0	2.4	1.8	1.3	0	1.6	1.6	2.9	0	1.7	1.9

N/S: East Squantum Street
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Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Cars

	East Squantum Street From North			East Squantum Street From South			Victory Road From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
04:00 PM	6	66	0	82	33	0	35	20	0	242
04:15 PM	6	67	0	76	34	0	36	6	0	225
04:30 PM	10	79	0	73	37	0	61	8	0	268
04:45 PM	2	56	0	88	43	0	37	9	0	235
Total	24	268	0	319	147	0	169	43	0	970
05:00 PM	6	61	0	85	35	0	89	8	0	284
05:15 PM	6	70	0	82	37	0	61	8	0	264
05:30 PM	8	75	0	81	31	0	49	9	0	253
05:45 PM	5	54	0	75	49	0	34	7	0	224
Total	25	260	0	323	152	0	233	32	0	1025
Grand Total	49	528	0	642	299	0	402	75	0	1995
Apprch %	8.5	91.5	0	68.2	31.8	0	84.3	15.7	0	
Total %	2.5	26.5	0	32.2	15	0	20.2	3.8	0	

	East Squantum Street From North				East Squantum Street From South				Victory Road From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	**10**	**79**	**0**	**89**	73	37	0	110	61	8	0	69	268
04:45 PM	2	56	0	58	**88**	**43**	0	**131**	37	**9**			
05:00 PM	**6**	**61**	**0**	**67**	**85**	**35**	**0**	**120**	**89**	8	0	**97**	**284**
05:15 PM	6	70	0	76	82	37	0	119	61	8	0	69	264
Total Volume	24	266	0	290	328	152	0	480	248	33	0	281	1051
% App. Total	8.3	91.7	0		68.3	31.7	0		88.3	11.7	0		
PHF	.600	.842	.000	.815	.932	.884	.000	.916	.697	.917	.000	.724	.925

N/S: East Squantum Street
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Start Date : 6/5/2012
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Groups Printed- Heavy Vehicles

	East Squantum Street From North			East Squantum Street From South			Victory Road From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
04:00 PM	0	5	0	1	1	0	1	0	0	8
04:15 PM	0	3	0	1	0	0	0	0	0	4
04:30 PM	0	1	0	1	0	0	2	0	0	4
04:45 PM	0	0	0	1	0	0	0	1	0	2
Total	0	9	0	4	1	0	3	1	0	18
05:00 PM	2	3	0	2	1	0	0	0	0	8
05:15 PM	0	1	0	2	1	0	2	0	0	6
05:30 PM	0	3	0	0	1	0	0	0	0	4
05:45 PM	0	1	0	2	2	0	1	0	0	6
Total	2	8	0	6	5	0	3	0	0	24
Grand Total	2	17	0	10	6	0	6	1	0	42
Apprch %	10.5	89.5	0	62.5	37.5	0	85.7	14.3	0	
Total %	4.8	40.5	0	23.8	14.3	0	14.3	2.4	0	

	East Squantum Street From North				East Squantum Street From South				Victory Road From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	**2**	**3**	**0**	**5**	**2**	1	0	3	0	0	0	0	**8**
05:15 PM	0	1	0	1	2	1	0	3	**2**	0	0	**2**	6
05:30 PM	0	3	0	3	0	1	0	1	0	0	0	0	4
05:45 PM	0	1	0	1	2	**2**	0	**4**	1	0	0	1	6
Total Volume	2	8	0	10	6	5	0	11	3	0	0	3	24
% App. Total	20	80	0		54.5	45.5	0		100	0	0		
PHF	.250	.667	.000	.500	.750	.625	.000	.688	.375	.000	.000	.375	.750

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Groups Printed- Peds and Bicycles

	East Squantum Street From North			East Squantum Street From South			Victory Road From West			
Start Time	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	Int. Total
04:00 PM	0	0	1	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	1	1
Total	0	0	1	0	0	0	0	0	2	3
05:00 PM	0	0	0	1	0	0	1	0	0	2
05:15 PM	0	0	0	1	0	0	0	0	2	3
05:30 PM	0	0	0	0	0	0	0	0	5	5
05:45 PM	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	2	0	0	1	0	8	11
Grand Total	0	0	1	2	0	0	1	0	10	14
Apprch %	0	0	100	100	0	0	9.1	0	90.9	
Total %	0	0	7.1	14.3	0	0	7.1	0	71.4	

	East Squantum Street From North				East Squantum Street From South				Victory Road From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	1
05:00 PM	0	0	0	0	**1**	0	0	**1**	**1**	0	0	1	2
05:15 PM	0	0	0	0	1	0	0	1	0	0	2	2	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	**5**	**5**	**5**
Total Volume	0	0	0	0	2	0	0	2	1	0	8	9	11
% App. Total	0	0	0		100	0	0		11.1	0	88.9		
PHF	.000	.000	.000	.000	.500	.000	.000	.500	.250	.000	.400	.450	.550

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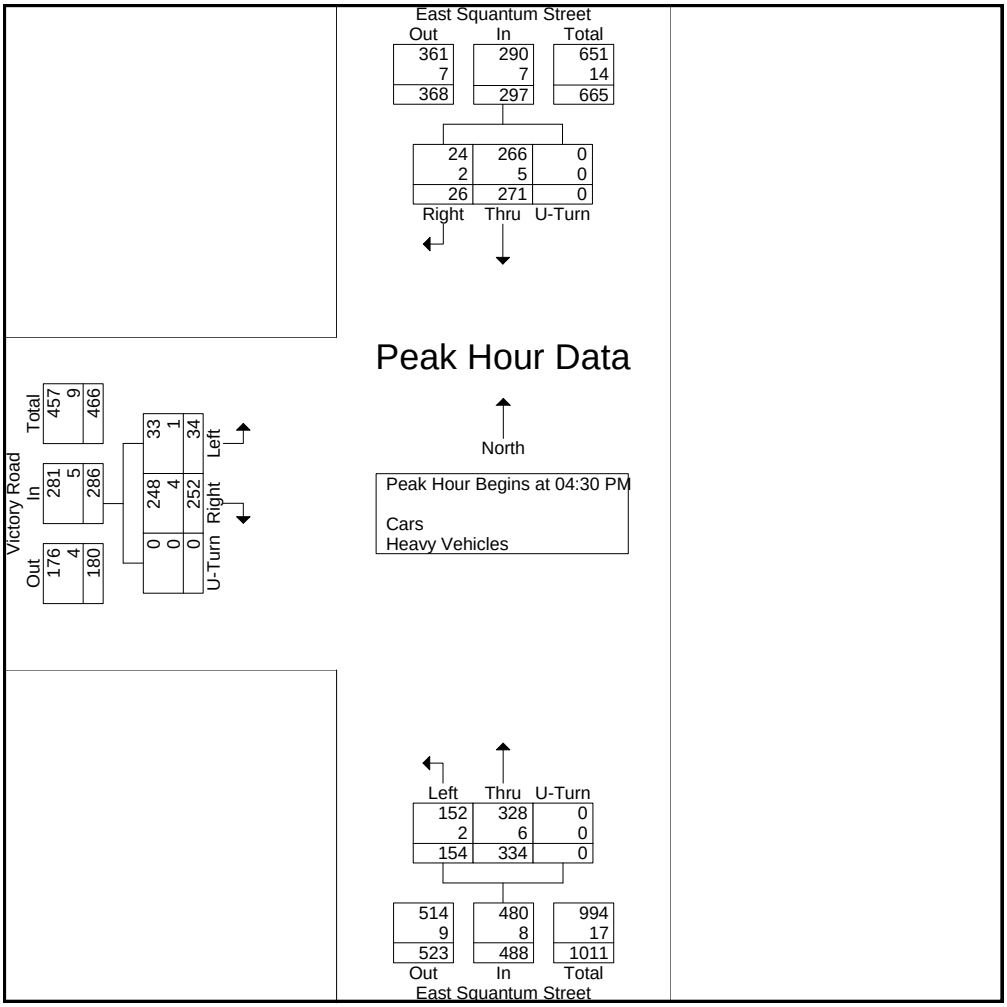
	East Squantum Street From North				East Squantum Street From South				Victory Road From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	**10**	**80**	**0**	**90**	74	37	0	111	63	8	0	71	272
04:45 PM	2	56	0	58	**89**	**43**	0	**132**	37	**10**			
05:00 PM	**8**	**64**	**0**	**72**	**87**	**36**	**0**	**123**	**89**	8	0	**97**	**292**
05:15 PM	6	71	0	77	84	38	0	122	63	8	0	71	270
Total Volume	26	271	0	297	334	154	0	488	252	34	0	286	1071
% App. Total	8.8	91.2	0		68.4	31.6	0		88.1	11.9	0		
PHF	.650	.847	.000	.825	.938	.895	.000	.924	.708	.850	.000	.737	.917
Cars	24	266	0	290	328	152	0	480	248	33	0	281	1051
% Cars	92.3	98.2	0	97.6	98.2	98.7	0	98.4	98.4	97.1	0	98.3	98.1
Heavy Vehicles	2	5	0	7	6	2	0	8	4	1	0	5	20
% Heavy Vehicles	7.7	1.8	0	2.4	1.8	1.3	0	1.6	1.6	2.9	0	1.7	1.9



N/S: East Squantum Street
E/W: Quincy Shore Drive
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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File Name : 122931 E
Site Code : 2011140.
Start Date : 6/5/2012
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Groups Printed- Cars - Heavy Vehicles

	East Squantum Street From North				Quincy Shore Drive From East				East Squantum Street From South				Quincy Shore Drive From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	12	49	32	0	93	266	20	2	2	21	16	0	2	68	16	2	601
07:15 AM	11	42	53	0	108	171	12	1	0	29	6	0	1	59	21	0	514
07:30 AM	10	61	63	0	111	168	18	0	1	21	6	0	10	47	26	0	542
07:45 AM	21	72	59	0	68	105	13	1	4	54	5	0	1	73	22	0	498
Total	54	224	207	0	380	710	63	4	7	125	33	0	14	247	85	2	2155
08:00 AM	4	56	55	0	98	133	18	1	0	45	9	0	4	64	35	2	524
08:15 AM	17	76	82	0	111	134	11	1	2	59	5	0	0	83	44	0	625
08:30 AM	8	57	93	0	88	125	35	0	3	46	5	0	1	86	26	0	573
08:45 AM	9	59	58	0	83	154	15	1	3	25	9	0	9	72	32	0	529
Total	38	248	288	0	380	546	79	3	8	175	28	0	14	305	137	2	2251
Grand Total	92	472	495	0	760	1256	142	7	15	300	61	0	28	552	222	4	4406
Apprch %	8.7	44.6	46.7	0	35.1	58	6.6	0.3	4	79.8	16.2	0	3.5	68.5	27.5	0.5	
Total %	2.1	10.7	11.2	0	17.2	28.5	3.2	0.2	0.3	6.8	1.4	0	0.6	12.5	5	0.1	
Cars	88	449	477	0	754	1245	142	7	15	269	61	0	28	541	217	4	4297
% Cars	95.7	95.1	96.4	0	99.2	99.1	100	100	100	89.7	100	0	100	98	97.7	100	97.5
Heavy Vehicles	4	23	18	0	6	11	0	0	0	31	0	0	0	11	5	0	109
% Heavy Vehicles	4.3	4.9	3.6	0	0.8	0.9	0	0	0	10.3	0	0	0	2	2.3	0	2.5

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

Peak Hour for Entire Intersection Begins at 08:00 AM

	East Squantum Street From North					Quincy Shore Drive From East					East Squantum Street From South					Quincy Shore Drive From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
08:00 AM	4	56	55	0	115	98	133	18	**1**	250	0	45	**9**	0	54	4	64	35	**2**	**105**	**524**
08:15 AM	**17**	**76**	82	0	**175**	**111**	134	11	1	**257**	2	**59**	**5**	**0**	**66**	0	83	**44**	**0**	**127**	**625**
08:30 AM	8	57	**93**					**35**			**3**						**86**	26	0	113	573
08:45 AM	9	59	58	0	126	83	**154**									**9**					
Total Volume	38	248	288	0	574	380	546	79	3	1008	8	175	28	0	211	14	305	137	2	458	2251
% App. Total	6.6	43.2	50.2	0		37.7	54.2	7.8	0.3		3.8	82.9	13.3	0		3.1	66.6	29.9	0.4		
PHF	.559	.816	.774	.000	.820	.856	.886	.564	.750	.981	.667	.742	.778	.000	.799	.389	.887	.778	.250	.902	.900
Cars	36	237	277	0	550	378	542	79	3	1002	8	162	28	0	198	14	299	133	2	448	2198
% Cars	94.7	95.6	96.2	0	95.8	99.5	99.3	100	100	99.4	100	92.6	100	0	93.8	100	98.0	97.1	100	97.8	97.6
Heavy Vehicles	2	11	11	0	24	2	4	0	0	6	0	13	0	0	13	0	6	4	0	10	53
% Heavy Vehicles	5.3	4.4	3.8	0	4.2	0.5	0.7	0	0	0.6	0	7.4	0	0	6.2	0	2.0	2.9	0	2.2	2.4

N/S: East Squantum Street
E/W: Quincy Shore Drive
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Start Date : 6/5/2012
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Groups Printed- Cars

	East Squantum Street From North				Quincy Shore Drive From East				East Squantum Street From South				Quincy Shore Drive From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	12	48	28	0	92	266	20	2	2	17	16	0	2	67	16	2	590
07:15 AM	10	41	52	0	107	169	12	1	0	21	6	0	1	57	21	0	498
07:30 AM	9	57	62	0	110	166	18	0	1	19	6	0	10	46	25	0	529
07:45 AM	21	66	58	0	67	102	13	1	4	50	5	0	1	72	22	0	482
Total	52	212	200	0	376	703	63	4	7	107	33	0	14	242	84	2	2099
08:00 AM	4	54	55	0	97	132	18	1	0	42	9	0	4	64	33	2	515
08:15 AM	15	72	80	0	111	133	11	1	2	52	5	0	0	81	43	0	606
08:30 AM	8	56	87	0	87	124	35	0	3	45	5	0	1	84	25	0	560
08:45 AM	9	55	55	0	83	153	15	1	3	23	9	0	9	70	32	0	517
Total	36	237	277	0	378	542	79	3	8	162	28	0	14	299	133	2	2198
Grand Total	88	449	477	0	754	1245	142	7	15	269	61	0	28	541	217	4	4297
Apprch %	8.7	44.3	47	0	35.1	58	6.6	0.3	4.3	78	17.7	0	3.5	68.5	27.5	0.5	
Total %	2	10.4	11.1	0	17.5	29	3.3	0.2	0.3	6.3	1.4	0	0.7	12.6	5.1	0.1	

	East Squantum Street From North					Quincy Shore Drive From East					East Squantum Street From South					Quincy Shore Drive From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	4	54	55	0	113	97	132	18	**1**	248	0	42	**9**	0	51	4	64	33	**2**	**103**	**515**
08:15 AM	**15**	**72**	80	0	**167**	**111**	133	11	1	**256**	2	**52**	**5**	**0**	**59**	0	81	**43**	**0**	**124**	**606**
08:30 AM	8	56	**87**					**35**			**3**						**84**	25	0	110	560
08:45 AM	9	55	55	0	119	83	**153**									**9**					
Total Volume	36	237	277	0	550	378	542	79	3	1002	8	162	28	0	198	14	299	133	2	448	2198
% App. Total	6.5	43.1	50.4	0		37.7	54.1	7.9	0.3		4	81.8	14.1	0		3.1	66.7	29.7	0.4		
PHF	.600	.823	.796	.000	.823	.851	.886	.564	.750	.979	.667	.779	.778	.000	.839	.389	.890	.773	.250	.903	.907

N/S: East Squantum Street
E/W: Quincy Shore Drive
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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

File Name : 122931 E
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Heavy Vehicles

	East Squantum Street From North				Quincy Shore Drive From East				East Squantum Street From South				Quincy Shore Drive From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	1	4	0	1	0	0	0	0	4	0	0	0	1	0	0	11
07:15 AM	1	1	1	0	1	2	0	0	0	8	0	0	0	2	0	0	16
07:30 AM	1	4	1	0	1	2	0	0	0	2	0	0	0	1	1	0	13
07:45 AM	0	6	1	0	1	3	0	0	0	4	0	0	0	1	0	0	16
Total	2	12	7	0	4	7	0	0	0	18	0	0	0	5	1	0	56
08:00 AM	0	2	0	0	1	1	0	0	0	3	0	0	0	0	2	0	9
08:15 AM	2	4	2	0	0	1	0	0	0	7	0	0	0	2	1	0	19
08:30 AM	0	1	6	0	1	1	0	0	0	1	0	0	0	2	1	0	13
08:45 AM	0	4	3	0	0	1	0	0	0	2	0	0	0	2	0	0	12
Total	2	11	11	0	2	4	0	0	0	13	0	0	0	6	4	0	53
Grand Total	4	23	18	0	6	11	0	0	0	31	0	0	0	11	5	0	109
Apprch %	8.9	51.1	40	0	35.3	64.7	0	0	0	100	0	0	0	68.8	31.2	0	
Total %	3.7	21.1	16.5	0	5.5	10.1	0	0	0	28.4	0	0	0	10.1	4.6	0	

	East Squantum Street From North					Quincy Shore Drive From East					East Squantum Street From South					Quincy Shore Drive From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	1	4	1	0	6	**1**	2	0	0	3	0	2	0	0	2	0	1	1	0	2	13
07:45 AM	0	**6**	1	0	7	1	**3**			**4**	0	4	0	0	4	0	1	0	0	1	16
08:00 AM	0	2	0	0	2	1	1	0	0	2	0	3	0	0	3	0	0	**2**			
08:15 AM	**2**	**4**	**2**	**0**	**8**	0	1	0	0	1	0	**7**	**0**	**0**	**7**	0	**2**	1	0	**3**	**19**
Total Volume	3	16	4	0	23	3	7	0	0	10	0	16	0	0	16	0	4	4	0	8	57
% App. Total	13	69.6	17.4	0		30	70	0	0		0	100	0	0		0	50	50	0		
PHF	.375	.667	.500	.000	.719	.750	.583	.000	.000	.625	.000	.571	.000	.000	.571	.000	.500	.500	.000	.667	.750

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File Name : 122931 E
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Peds and Bicycles

	East Squantum Street From North				Quincy Shore Drive From East				East Squantum Street From South				Quincy Shore Drive From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	3
07:45 AM	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0	1	5
Total	0	0	0	3	0	1	0	2	0	0	0	2	0	0	0	2	10
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
08:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4
Grand Total	1	0	0	3	0	1	0	2	0	0	0	2	0	0	0	5	14
Apprch %	25	0	0	75	0	33.3	0	66.7	0	0	0	100	0	0	0	100	
Total %	7.1	0	0	21.4	0	7.1	0	14.3	0	0	0	14.3	0	0	0	35.7	

	East Squantum Street From North					Quincy Shore Drive From East					East Squantum Street From South					Quincy Shore Drive From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	0	0	0	**1**	**1**	3
07:45 AM	0	0	0	**1**	**1**	0	0	0	**2**	**2**	0	0	0	1	1	0	0	0	1	1	**5**
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
08:15 AM	**1**																				
Total Volume	1	0	0	1	2	0	1	0	2	3	0	0	0	2	2	0	0	0	4	4	11
% App. Total	50	0	0	50		0	33.3	0	66.7		0	0	0	100		0	0	0	100		
PHF	.250	.000	.000	.250	.500	.000	.250	.000	.250	.375	.000	.000	.000	.500	.500	.000	.000	.000	1.00	1.00	.550

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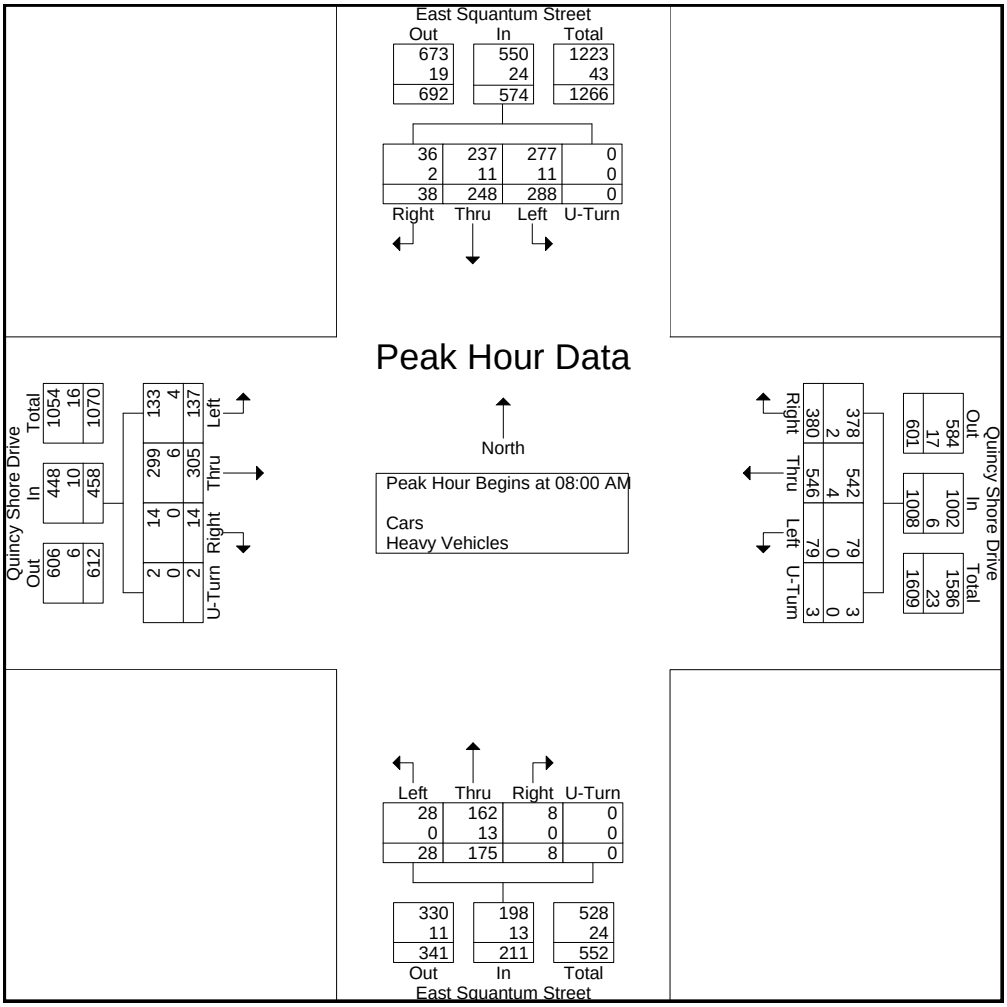
	East Squantum Street From North					Quincy Shore Drive From East					East Squantum Street From South					Quincy Shore Drive From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	4	56	55	0	115	98	133	18	**1**	250	0	45	**9**	0	54	4	64	35	**2**	**105**	**524**
08:15 AM	**17**	**76**	82	0	**175**	**111**	134	11	1	**257**	2	**59**	**5**	**0**	**66**	0	83	**44**	**0**	**127**	**625**
08:30 AM	8	57	**93**					**35**			**3**						**86**	26	0	113	573
08:45 AM	9	59	58	0	126	83	**154**									**9**					
Total Volume	38	248	288	0	574	380	546	79	3	1008	8	175	28	0	211	14	305	137	2	458	2251
% App. Total	6.6	43.2	50.2	0		37.7	54.2	7.8	0.3		3.8	82.9	13.3	0		3.1	66.6	29.9	0.4		
PHF	.559	.816	.774	.000	.820	.856	.886	.564	.750	.981	.667	.742	.778	.000	.799	.389	.887	.778	.250	.902	.900
Cars	36	237	277	0	550	378	542	79	3	1002	8	162	28	0	198	14	299	133	2	448	2198
% Cars	94.7	95.6	96.2	0	95.8	99.5	99.3	100	100	99.4	100	92.6	100	0	93.8	100	98.0	97.1	100	97.8	97.6
Heavy Vehicles	2	11	11	0	24	2	4	0	0	6	0	13	0	0	13	0	6	4	0	10	53
% Heavy Vehicles	5.3	4.4	3.8	0	4.2	0.5	0.7	0	0	0.6	0	7.4	0	0	6.2	0	2.0	2.9	0	2.2	2.4



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File Name : 122931 EE
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	East Squantum Street From North				Quincy Shore Drive From East				East Squantum Street From South				Quincy Shore Drive From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	27	32	68	0	48	132	6	0	5	36	9	0	3	235	37	1	639
04:15 PM	26	40	62	0	50	117	4	0	2	39	4	0	7	228	30	1	610
04:30 PM	23	42	88	0	42	131	8	0	6	35	6	0	7	246	32	1	667
04:45 PM	25	41	55	0	60	139	2	0	4	43	11	0	4	244	43	1	672
Total	101	155	273	0	200	519	20	0	17	153	30	0	21	953	142	4	2588
05:00 PM	38	39	103	0	59	130	5	0	4	45	9	0	10	246	28	0	716
05:15 PM	26	45	85	1	60	133	3	0	4	40	9	0	9	269	38	2	724
05:30 PM	26	36	71	0	41	104	4	0	3	41	18	0	5	220	36	1	606
05:45 PM	20	26	58	0	51	124	6	0	1	44	12	0	4	255	35	0	636
Total	110	146	317	1	211	491	18	0	12	170	48	0	28	990	137	3	2682
Grand Total	211	301	590	1	411	1010	38	0	29	323	78	0	49	1943	279	7	5270
Apprch %	19.1	27.3	53.5	0.1	28.2	69.2	2.6	0	6.7	75.1	18.1	0	2.2	85.3	12.2	0.3	
Total %	4	5.7	11.2	0	7.8	19.2	0.7	0	0.6	6.1	1.5	0	0.9	36.9	5.3	0.1	
Cars	208	286	589	1	407	1009	37	0	28	317	78	0	49	1938	274	7	5228
% Cars	98.6	95	99.8	100	99	99.9	97.4	0	96.6	98.1	100	0	100	99.7	98.2	100	99.2
Heavy Vehicles	3	15	1	0	4	1	1	0	1	6	0	0	0	5	5	0	42
% Heavy Vehicles	1.4	5	0.2	0	1	0.1	2.6	0	3.4	1.9	0	0	0	0.3	1.8	0	0.8

	East Squantum Street From North					Quincy Shore Drive From East					East Squantum Street From South					Quincy Shore Drive From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	23	42	88	0	153	42	131	**8**	**0**	**181**	**6**	**35**	**6**	**0**	**47**	**7**	**246**	**32**	**1**	**286**	**667**
04:45 PM	**25**	**41**	**55**	**0**	**121**	**60**	**139**	**2**	**0**	**201**	4	43	**11**	0	**58**	4	244	**43**	**1**	**292**	**672**
05:00 PM	**38**	**39**	**103**	**0**	**180**	59	130	5	0	194	4	**45**	**9**	**0**	**58**	**10**	**246**	**28**	**0**	**284**	**716**
05:15 PM	**26**	**45**	85	**1**	**157**	**60**	**133**	**3**	**0**	**196**	**4**	**40**	**9**	**0**	**53**	**9**	**269**	38	**2**	**318**	**724**
Total Volume	112	167	331	1	611	221	533	18	0	772	18	163	35	0	216	30	1005	141	4	1180	2779
% App. Total	18.3	27.3	54.2	0.2		28.6	69	2.3	0		8.3	75.5	16.2	0		2.5	85.2	11.9	0.3		
PHF	.737	.928	.803	.250	.849	.921	.959	.563	.000	.960	.750	.906	.795	.000	.931	.750	.934	.820	.500	.928	.960
Cars	111	160	331	1	603	217	532	17	0	766	17	161	35	0	213	30	1003	138	4	1175	2757
% Cars	99.1	95.8	100	100	98.7	98.2	99.8	94.4	0	99.2	94.4	98.8	100	0	98.6	100	99.8	97.9	100	99.6	99.2
Heavy Vehicles	1	7	0	0	8	4	1	1	0	6	1	2	0	0	3	0	2	3	0	5	22
% Heavy Vehicles	0.9	4.2	0	0	1.3	1.8	0.2	5.6	0	0.8	5.6	1.2	0	0	1.4	0	0.2	2.1	0	0.4	0.8

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Page No : 1

Groups Printed- Cars

	East Squantum Street From North				Quincy Shore Drive From East				East Squantum Street From South				Quincy Shore Drive From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	27	27	68	0	48	132	6	0	5	36	9	0	3	233	36	1	631
04:15 PM	24	38	62	0	50	117	4	0	2	38	4	0	7	227	30	1	604
04:30 PM	23	39	88	0	42	131	8	0	5	35	6	0	7	246	31	1	662
04:45 PM	25	41	55	0	60	139	2	0	4	42	11	0	4	243	43	1	670
Total	99	145	273	0	200	519	20	0	16	151	30	0	21	949	140	4	2567
05:00 PM	37	36	103	0	57	129	5	0	4	45	9	0	10	246	27	0	708
05:15 PM	26	44	85	1	58	133	2	0	4	39	9	0	9	268	37	2	717
05:30 PM	26	35	70	0	41	104	4	0	3	40	18	0	5	220	36	1	603
05:45 PM	20	26	58	0	51	124	6	0	1	42	12	0	4	255	34	0	633
Total	109	141	316	1	207	490	17	0	12	166	48	0	28	989	134	3	2661
Grand Total	208	286	589	1	407	1009	37	0	28	317	78	0	49	1938	274	7	5228
Apprch %	19.2	26.4	54.3	0.1	28	69.4	2.5	0	6.6	74.9	18.4	0	2.2	85.4	12.1	0.3	
Total %	4	5.5	11.3	0	7.8	19.3	0.7	0	0.5	6.1	1.5	0	0.9	37.1	5.2	0.1	

	East Squantum Street From North					Quincy Shore Drive From East					East Squantum Street From South					Quincy Shore Drive From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	23	39	88	0	150	42	131	**8**	**0**	**181**	**5**	**35**	**6**	**0**	**46**	**7**	**246**	**31**	**1**	**285**	**662**
04:45 PM	**25**	**41**	**55**	**0**	**121**	**60**	**139**	**2**	**0**	**201**	4	42	**11**	0	57	4	243	**43**	**1**	**291**	**670**
05:00 PM	**37**	**36**	**103**	**0**	**176**	57	129	5	0	191	4	**45**	**9**	**0**	**58**	**10**	**246**	**27**	**0**	**283**	**708**
05:15 PM	**26**	**44**	85	**1**	**156**	**58**	**133**	**2**	**0**	**193**	**4**	**39**	**9**	**0**	**52**	**9**	**268**	37	**2**	**316**	**717**
Total Volume	111	160	331	1	603	217	532	17	0	766	17	161	35	0	213	30	1003	138	4	1175	2757
% App. Total	18.4	26.5	54.9	0.2		28.3	69.5	2.2	0		8	75.6	16.4	0		2.6	85.4	11.7	0.3		
PHF	.750	.909	.803	.250	.857	.904	.957	.531	.000	.953	.850	.894	.795	.000	.918	.750	.936	.802	.500	.930	.961

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	East Squantum Street From North				Quincy Shore Drive From East				East Squantum Street From South				Quincy Shore Drive From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	0	5	0	0	0	0	0	0	0	0	0	0	0	2	1	0	8
04:15 PM	2	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	6
04:30 PM	0	3	0	0	0	0	0	0	1	0	0	0	0	0	1	0	5
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
Total	2	10	0	0	0	0	0	0	1	2	0	0	0	4	2	0	21
05:00 PM	1	3	0	0	2	1	0	0	0	0	0	0	0	0	1	0	8
05:15 PM	0	1	0	0	2	0	1	0	0	1	0	0	0	1	1	0	7
05:30 PM	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	3
05:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	3
Total	1	5	1	0	4	1	1	0	0	4	0	0	0	1	3	0	21
Grand Total	3	15	1	0	4	1	1	0	1	6	0	0	0	5	5	0	42
Apprch %	15.8	78.9	5.3	0	66.7	16.7	16.7	0	14.3	85.7	0	0	0	50	50	0	
Total %	7.1	35.7	2.4	0	9.5	2.4	2.4	0	2.4	14.3	0	0	0	11.9	11.9	0	

	East Squantum Street From North					Quincy Shore Drive From East					East Squantum Street From South					Quincy Shore Drive From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	**3**	0	0	3	0	0	0	0	0	**1**	**0**	**0**	**0**	**1**	0	0	**1**	**0**	**1**	**5**
04:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**1**	0	0	1	2
05:00 PM	**1**				**4**	**2**	**1**			**3**	0	0	0	0	0	0	0	1	0	1	**8**
05:15 PM	0	1	0	0	1	2	0	**1**												**2**	7
Total Volume	1	7	0	0	8	4	1	1	0	6	1	2	0	0	3	0	2	3	0	5	22
% App. Total	12.5	87.5	0	0		66.7	16.7	16.7	0		33.3	66.7	0	0		0	40	60	0		
PHF	.250	.583	.000	.000	.500	.500	.250	.250	.000	.500	.250	.500	.000	.000	.750	.000	.500	.750	.000	.625	.688

N/S: East Squantum Street
E/W: Quincy Shore Drive
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

PRECISION DATA INDUSTRIES, LLC
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File Name : 122931 EE
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Peds and Bicycles

	East Squantum Street From North				Quincy Shore Drive From East				East Squantum Street From South				Quincy Shore Drive From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2	4
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
04:30 PM	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	4	9
Total	0	0	0	3	0	0	0	1	0	0	0	5	0	0	1	7	17
05:00 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	4
05:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	3
05:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
Total	0	0	1	2	0	0	0	3	0	0	0	0	0	0	1	3	10
Grand Total	0	0	1	5	0	0	0	4	0	0	0	5	0	0	2	10	27
Apprch %	0	0	16.7	83.3	0	0	0	100	0	0	0	100	0	0	16.7	83.3	
Total %	0	0	3.7	18.5	0	0	0	14.8	0	0	0	18.5	0	0	7.4	37	

	East Squantum Street From North					Quincy Shore Drive From East					East Squantum Street From South					Quincy Shore Drive From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**2**	**3**	**4**
04:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**1**
04:30 PM	**0**	**0**	**0**	**2**	**2**	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**	**5**	0	0	0	**4**	**4**	**9**
Total Volume	0	0	0	3	3	0	0	0	1	1	0	0	0	5	5	0	0	1	7	8	17
% App. Total	0	0	0	100		0	0	0	100		0	0	0	100		0	0	12.5	87.5		
PHF	.000	.000	.000	.375	.375	.000	.000	.000	.250	.250	.000	.000	.000	.250	.250	.000	.000	.250	.438	.500	.472

N/S: East Squantum Street
E/W: Quincy Shore Drive
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Start Date : 6/5/2012
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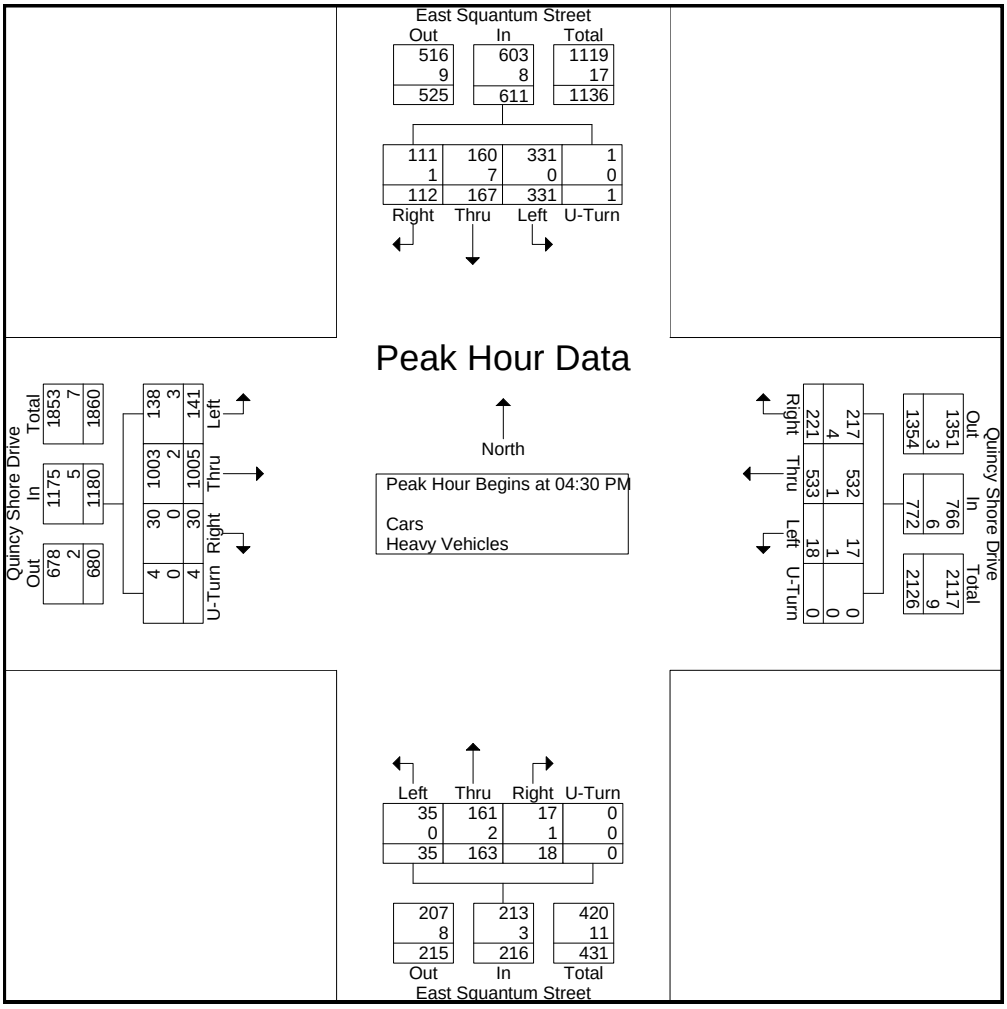
	East Squantum Street From North					Quincy Shore Drive From East					East Squantum Street From South					Quincy Shore Drive From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	23	42	88	0	153	42	131	**8**	**0**	**181**	**6**	**35**	**6**	**0**	**47**	**7**	**246**	**32**	**1**	**286**	**667**
04:45 PM	**25**	**41**	**55**	**0**	**121**	**60**	**139**	**2**	**0**	**201**	4	43	**11**	0	**58**	4	244	**43**	**1**	**292**	**672**
05:00 PM	**38**	**39**	**103**	**0**	**180**	59	130	5	0	194	4	**45**	**9**	**0**	**58**	**10**	**246**	**28**	**0**	**284**	**716**
05:15 PM	**26**	**45**	85	**1**	**157**	**60**	**133**	**3**	**0**	**196**	**4**	**40**	**9**	**0**	**53**	**9**	**269**	38	**2**	**318**	**724**
Total Volume	112	167	331	1	611	221	533	18	0	772	18	163	35	0	216	30	1005	141	4	1180	2779
% App. Total	18.3	27.3	54.2	0.2		28.6	69	2.3	0		8.3	75.5	16.2	0		2.5	85.2	11.9	0.3		
PHF	.737	.928	.803	.250	.849	.921	.959	.563	.000	.960	.750	.906	.795	.000	.931	.750	.934	.820	.500	.928	.960
Cars	111	160	331	1	603	217	532	17	0	766	17	161	35	0	213	30	1003	138	4	1175	2757
% Cars	99.1	95.8	100	100	98.7	98.2	99.8	94.4	0	99.2	94.4	98.8	100	0	98.6	100	99.8	97.9	100	99.6	99.2
Heavy Vehicles	1	7	0	0	8	4	1	1	0	6	1	2	0	0	3	0	2	3	0	5	22
% Heavy Vehicles	0.9	4.2	0	0	1.3	1.8	0.2	5.6	0	0.8	5.6	1.2	0	0	1.4	0	0.2	2.1	0	0.4	0.8



N/S: Commander Shea Blvd
E/SE: Quincy Shore Drive/Billings Street
City, State: Quincy, MA
Client: Howard Stein-Hudson/M. Tremblay

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File Name : 122931 F
Site Code : 2011140.
Start Date : 6/5/2012
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Groups Printed- Cars - Heavy Vehicles

	Commander Shea Boulevard From North				Quincy Shore Drive EB Offramp From Northeast				Quincy Shore Drive EB Onramp From East				Billings Street From Southeast				Commander Shea Boulevard From South				
Start Time	Thru	Bear Left	Left	Hard Left	Hard Right	Bear Left	Left	Hard Left	Hard Right	Right	Left	Hard Left	Hard Right	Right	Bear Right	Hard Left	Hard Right	Right	Bear Right	Thru	Int. Total
07:00 AM	16	0	3	0	20	2	0	0	0	2	0	0	0	0	0	4	6	0	0	92	145
07:15 AM	22	0	3	0	12	2	0	0	0	0	0	0	0	0	0	6	12	0	0	89	146
07:30 AM	23	0	1	0	12	1	0	0	0	1	0	0	0	0	0	5	7	0	0	93	143
07:45 AM	10	0	2	0	13	0	0	0	0	2	0	0	0	0	0	4	13	0	0	111	155
Total	71	0	9	0	57	5	0	0	0	5	0	0	0	0	0	19	38	0	0	385	589
08:00 AM	12	0	1	0	16	2	0	0	0	4	1	0	0	0	0	2	35	3	0	81	157
08:15 AM	15	0	1	0	18	3	0	0	0	0	0	0	0	0	0	1	19	1	0	104	162
08:30 AM	15	0	1	0	12	3	0	0	0	1	0	0	0	0	0	0	19	0	0	70	121
08:45 AM	5	0	2	0	25	0	0	0	0	3	0	0	0	0	0	0	10	1	0	76	122
Total	47	0	5	0	71	8	0	0	0	8	1	0	0	0	0	3	83	5	0	331	562
Grand Total	118	0	14	0	128	13	0	0	0	13	1	0	0	0	0	22	121	5	0	716	1151
Apprch %	89.4	0	10.6	0	90.8	9.2	0	0	0	92.9	7.1	0	0	0	0	100	14.4	0.6	0	85	
Total %	10.3	0	1.2	0	11.1	1.1	0	0	0	1.1	0.1	0	0	0	0	1.9	10.5	0.4	0	62.2	
Cars	111	0	12	0	124	12	0	0	0	13	1	0	0	0	0	22	117	5	0	697	1114
% Cars	94.1	0	85.7	0	96.9	92.3	0	0	0	100	100	0	0	0	0	100	96.7	100	0	97.3	96.8
Heavy Vehicles	7	0	2	0	4	1	0	0	0	0	0	0	0	0	0	0	4	0	0	19	37
% Heavy Vehicles	5.9	0	14.3	0	3.1	7.7	0	0	0	0	0	0	0	0	0	0	3.3	0	0	2.7	3.2

	Commander Shea Boulevard From North					Quincy Shore Drive EB Offramp From Northeast					Quincy Shore Drive EB Onramp From East					Billings Street From Southeast					Commander Shea Boulevard From South					
Start Time	Thru	Bear Left	Left	Hard Left	App. Total	Hard Right	Bear Left	Left	Hard Left	App. Total	Hard Right	Right	Left	Hard Left	App. Total	Hard Right	Right	Bear Right	Hard Left	App. Total	Hard Right	Right	Bear Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:30 AM																										
07:30 AM	**23**	**0**	**1**	**0**	**24**	12	1	0	0	13	0	1	0	0	1	0	0	0	**5**	**5**	7	0	0	93	100	143
07:45 AM	10	0	**2**																					**111**	**124**	
08:00 AM	12	0	1	0	13	16	2	0	0	18	0	**4**	**1**	**0**	**5**	**0**	**0**	**0**	**2**	**2**	**35**	**3**	**0**	**81**	**119**	**157**
08:15 AM	15	0	1	0	16	**18**	**3**	**0**	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**19**	**1**	**0**	104	124	**162**
Total Volume	60	0	5	0	65	59	6	0	0	65	0	7	1	0	8	0	0	0	12	12	74	4	0	389	467	617
% App. Total	92.3	0	7.7	0		90.8	9.2	0	0		0	87.5	12.5	0		0	0	0	100		15.8	0.9	0	83.3		
PHF	.652	.000	.625	.000	.677	.819	.500	.000	.000	.774	.000	.438	.250	.000		.000	.000	.000	.600	.600	.529	.333	.000	.876	.942	.952
Cars	57	0	5	0	62	57	6	0	0	63	0	7	1	0	8	0	0	0	12	12	72	4	0	382	458	603
% Cars	95.0	0	100	0	95.4	96.6	100	0	0	96.9	0	100	100	0	100	0	0	0	100	100	97.3	100	0	98.2	98.1	97.7
Heavy Vehicles																										
% Heavy Vehicles	5.0	0	0	0	4.6	3.4	0	0	0	3.1	0	0	0	0	0	0	0	0	0	0	2.7	0	0	1.8	1.9	2.3

N/S: Commander Shea Blvd
E/SE: Quincy Shore Drive/Billings Street
City, State: Quincy, MA
Client: Howard Stein-Hudson/M. Tremblay

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File Name : 122931 F
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Cars

	Commander Shea Boulevard From North				Quincy Shore Drive EB Offramp From Northeast				Quincy Shore Drive EB Onramp From East				Billings Street From Southeast				Commander Shea Boulevard From South				
Start Time	Thru	Bear Left	Left	Hard Left	Hard Right	Bear Left	Left	Hard Left	Hard Right	Right	Left	Hard Left	Hard Right	Right	Bear Right	Hard Left	Hard Right	Right	Bear Right	Thru	Int. Total
07:00 AM	16	0	3	0	20	2	0	0	0	2	0	0	0	0	0	4	6	0	0	88	141
07:15 AM	19	0	2	0	11	1	0	0	0	0	0	0	0	0	0	6	12	0	0	87	138
07:30 AM	23	0	1	0	12	1	0	0	0	1	0	0	0	0	0	5	7	0	0	93	143
07:45 AM	10	0	2	0	13	0	0	0	0	2	0	0	0	0	0	4	12	0	0	108	151
Total	68	0	8	0	56	4	0	0	0	5	0	0	0	0	0	19	37	0	0	376	573
08:00 AM	11	0	1	0	15	2	0	0	0	4	1	0	0	0	0	2	34	3	0	79	152
08:15 AM	13	0	1	0	17	3	0	0	0	0	0	0	0	0	0	1	19	1	0	102	157
08:30 AM	14	0	1	0	11	3	0	0	0	1	0	0	0	0	0	0	17	0	0	68	115
08:45 AM	5	0	1	0	25	0	0	0	0	3	0	0	0	0	0	0	10	1	0	72	117
Total	43	0	4	0	68	8	0	0	0	8	1	0	0	0	0	3	80	5	0	321	541
Grand Total	111	0	12	0	124	12	0	0	0	13	1	0	0	0	0	22	117	5	0	697	1114
Apprch %	90.2	0	9.8	0	91.2	8.8	0	0	0	92.9	7.1	0	0	0	0	100	14.3	0.6	0	85.1	
Total %	10	0	1.1	0	11.1	1.1	0	0	0	1.2	0.1	0	0	0	0	2	10.5	0.4	0	62.6	

	Commander Shea Boulevard From North					Quincy Shore Drive EB Offramp From Northeast					Quincy Shore Drive EB Onramp From East					Billings Street From Southeast					Commander Shea Boulevard From South					
Start Time	Thru	Bear Left	Left	Hard Left	App. Total	Hard Right	Bear Left	Left	Hard Left	App. Total	Hard Right	Right	Left	Hard Left	App. Total	Hard Right	Right	Bear Right	Hard Left	App. Total	Hard Right	Right	Bear Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:30 AM																										
07:30 AM	**23**	**0**	**1**	**0**	**24**	12	1	0	0	13	0	1	0	0	1	0	0	0	**5**	**5**	7	0	0	93	100	143
07:45 AM	10	0	**2**																					**108**	**120**	**151**
08:00 AM	11	0	1	0	12	15	2	0	0	17	0	**4**	**1**		**5**						**34**	**3**				
08:15 AM	13	0	1	0	14	**17**	**3**	**0**	**0**	**20**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**19**	**1**	**0**	102	**122**	**157**
Total Volume	57	0	5	0	62	57	6	0	0	63	0	7	1	0	8	0	0	0	12	12	72	4	0	382	458	603
% App. Total	91.9	0	8.1	0		90.5	9.5	0	0		0	87.5	12.5	0		0	0	0	100		15.7	0.9	0	83.4		
PHF	.620	.000	.625	.000	.646	.838	.500	.000	.000	.788	.000	.438	.250	.000		.000	.000	.000	.600	.600	.529	.333	.000	.884	.939	.960

N/S: Commander Shea Blvd
E/SE: Quincy Shore Drive/Billings Street
City, State: Quincy, MA
Client: Howard Stein-Hudson/M. Tremblay

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Groups Printed- Heavy Vehicles

	Commander Shea Boulevard From North				Quincy Shore Drive EB Offramp From Northeast				Quincy Shore Drive EB Onramp From East				Billings Street From Southeast				Commander Shea Boulevard From South				
Start Time	Thru	Bear Left	Left	Hard Left	Hard Right	Bear Left	Left	Hard Left	Hard Right	Right	Left	Hard Left	Hard Right	Right	Bear Right	Hard Left	Hard Right	Right	Bear Right	Thru	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
07:15 AM	3	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	4
Total	3	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	9	16
08:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	5
08:15 AM	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5
08:30 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	6
08:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5
Total	4	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0	0	10	21
Grand Total	7	0	2	0	4	1	0	0	0	0	0	0	0	0	0	0	4	0	0	19	37
Apprch %	77.8	0	22.2	0	80	20	0	0	0	0	0	0	0	0	0	0	17.4	0	0	82.6	
Total %	18.9	0	5.4	0	10.8	2.7	0	0	0	0	0	0	0	0	0	0	10.8	0	0	51.4	

	Commander Shea Boulevard From North					Quincy Shore Drive EB Offramp From Northeast					Quincy Shore Drive EB Onramp From East					Billings Street From Southeast					Commander Shea Boulevard From South					
Start Time	Thru	Bear Left	Left	Hard Left	App. Total	Hard Right	Bear Left	Left	Hard Left	App. Total	Hard Right	Right	Left	Hard Left	App. Total	Hard Right	Right	Bear Right	Hard Left	App. Total	Hard Right	Right	Bear Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 08:00 AM																										
08:00 AM	1	0	0	0	1	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**3**	**5**
08:15 AM	**2**	**0**	**0**	**0**	**2**	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	5
08:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**2**				**4**	**6**
08:45 AM	0	0	**1**																					**4**		
Total Volume	4	0	1	0	5	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3	0	0	10	13	21
% App. Total	80	0	20	0		100	0	0	0		0	0	0	0		0	0	0	0		23.1	0	0	76.9		
PHF	.500	.000	.250	.000	.625	.750	.000	.000	.000	.750	.000	.000	.000	.000		.000	.000	.000	.000	.000	.375	.000	.000	.625	.813	.875

N/S: Commander Shea Blvd
E/SE: Quincy Shore Drive/Billings Street
City, State: Quincy, MA
Client: Howard Stein-Hudson/M. Tremblay

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Groups Printed- Peds and Bicycles

	Commander Shea Boulevard From North					Quincy Shore Drive EB Offramp From Northeast					Quincy Shore Drive EB Onramp From East					Billings Street From Southeast					Commander Shea Boulevard From South					
Start Time	Thru	Bear Left	Left	Hard Left	Peds	Hard Right	Bear Left	Left	Hard Left	Peds	Hard Right	Right	Left	Hard Left	Peds	Hard Right	Right	Bear Right	Hard Left	Peds	Hard Right	Right	Bear Right	Thru	Peds	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	6
07:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	12
07:30 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	9
07:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	6
Total	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11	0	0	0	0	11	0	0	0	0	0	33
08:00 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	0	0	0	0	6	0	0	0	0	0	18
08:15 AM	0	0	0	0	0	0	0	0	0	12	0	0	0	0	12	0	0	0	0	12	0	0	0	0	0	36
08:30 AM	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	0	0	0	0	8	0	0	0	0	0	24
08:45 AM	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9	0	0	0	0	9	0	0	0	0	0	27
Total	0	0	0	0	0	0	0	0	0	35	0	0	0	0	35	0	0	0	0	35	0	0	0	0	0	105
Grand Total	0	0	0	0	0	0	0	0	0	46	0	0	0	0	46	0	0	0	0	46	0	0	0	0	0	138
Apprch %	0	0	0	0	0	0	0	0	0	100	0	0	0	0	100	0	0	0	0	100	0	0	0	0	0	
Total %	0	0	0	0	0	0	0	0	0	33.3	0	0	0	0	33.3	0	0	0	0	33.3	0	0	0	0	0	

	Commander Shea Boulevard From North						Quincy Shore Drive EB Offramp From Northeast						Quincy Shore Drive EB Onramp From East						Billings Street From Southeast						Commander Shea Boulevard From South						
Start Time	Thru	Bear Left	Left	Hard Left	Peds	App. Total	Hard Right	Bear Left	Left	Hard Left	Peds	App. Total	Hard Right	Right	Left	Hard Left	Peds	App. Total	Hard Right	Right	Bear Right	Hard Left	Peds	App. Total	Hard Right	Right	Bear Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 08:00 AM																															
08:00 AM	0	0	0	0	0	0	0	0	0	0	6	6	0	0	0	0	6	6	0	0	0	0	6	6	0	0	0	0	0	0	18
08:15 AM	0	0	0	0	0	0	0	0	0	0	**12**	**12**	0	0	0	0	**12**	**12**					**12**	**12**	0	0	0	0	0	0	**36**
08:30 AM	0	0	0	0	0	0	0	0	0	0	8	8	0	0	0	0	8	8	0	0	0	0	8	8	0	0	0	0	0	0	24
08:45 AM	0	0	0	0	0	0	0	0	0	0	9	9	0	0	0	0	9	9	0	0	0	0	9	9	0	0	0	0	0	0	27
Total Volume	0	0	0	0	0	0	0	0	0	0	35	35	0	0	0	0	35	35	0	0	0	0	35	35	0	0	0	0	0	0	105
% App. Total	0	0	0	0	0		0	0	0	0	100		0	0	0	0	100		0	0	0	0	100		0	0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.729	.729	.000	.000	.000	.000	.729	.729	.000	.000	.000	.000	.729	.729	.000	.000	.000	.000	.000	.000	.729

N/S: Commander Shea Blvd
E/SE: Quincy Shore Drive/Billings Street
City, State: Quincy, MA
Client: Howard Stein-Hudson/M. Tremblay

PRECISION DATA INDUSTRIES, LLC
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File Name : 122931 F
Site Code : 2011140.
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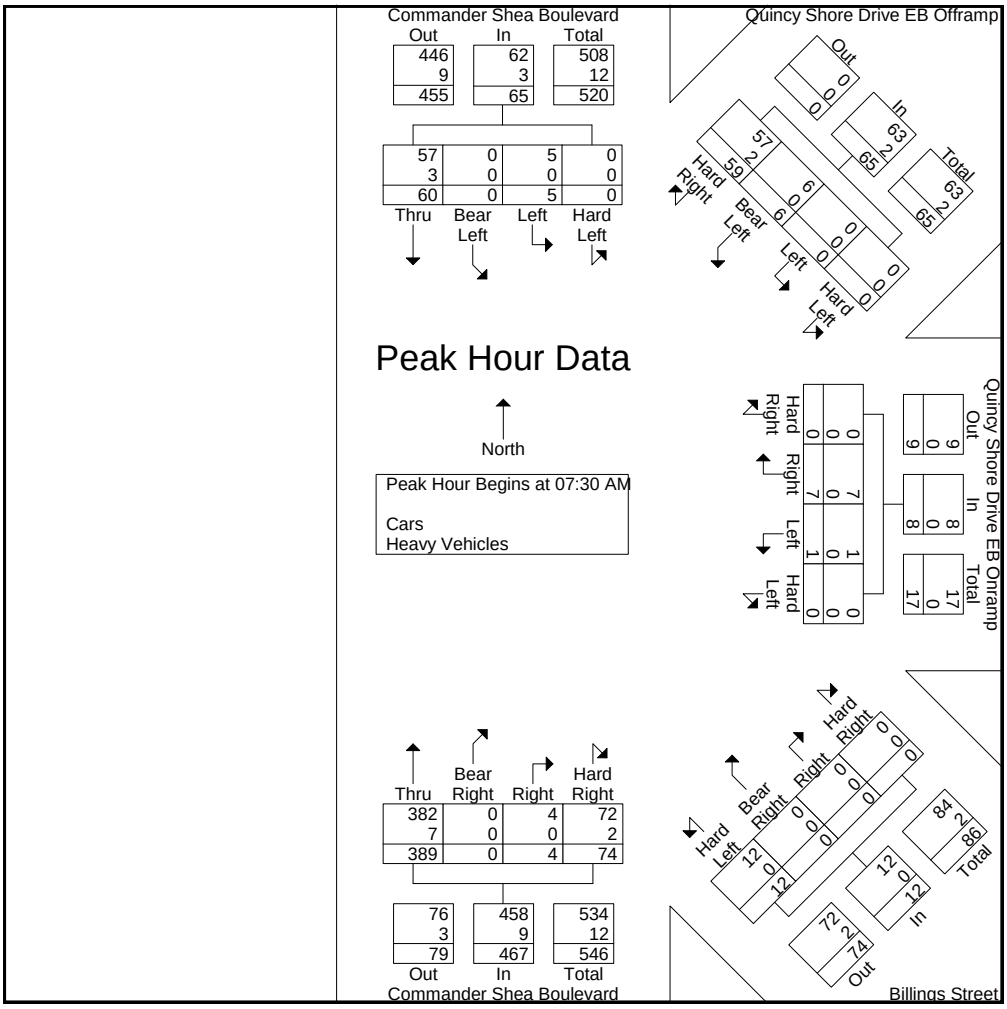
	Commander Shea Boulevard From North					Quincy Shore Drive EB Offramp From Northeast					Quincy Shore Drive EB Onramp From East					Billings Street From Southeast					Commander Shea Boulevard From South					
Start Time	Thru	Bear Left	Left	Hard Left	App. Total	Hard Right	Bear Left	Left	Hard Left	App. Total	Hard Right	Right	Left	Hard Left	App. Total	Hard Right	Right	Bear Right	Hard Left	App. Total	Hard Right	Right	Bear Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:30 AM																										
07:30 AM	**23**	**0**	**1**	**0**	**24**	12	1	0	0	13	0	1	0	0	1	0	0	0	**5**	**5**	7	0	0	93	100	143
07:45 AM	10	0	**2**																					**111**	**124**	
08:00 AM	12	0	1	0	13	16	2	0	0	18	0	**4**	**1**	**0**	**5**	**0**	**0**	**0**	**2**	**2**	**35**	**3**	**0**	**81**	**119**	**157**
08:15 AM	15	0	1	0	16	**18**	**3**	**0**	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**19**	**1**	**0**	104	124	**162**
Total Volume	60	0	5	0	65	59	6	0	0	65	0	7	1	0	8	0	0	0	12	12	74	4	0	389	467	617
% App. Total	92.3	0	7.7	0		90.8	9.2	0	0		0	87.5	12.5	0		0	0	0	100		15.8	0.9	0	83.3		
PHF	.652	.000	.625	.000	.677	.819	.500	.000	.000	.774	.000	.438	.250	.000		.000	.000	.000	.600	.600	.529	.333	.000	.876	.942	.952
Cars	57	0	5	0	62	57	6	0	0	63	0	7	1	0	8	0	0	0	12	12	72	4	0	382	458	603
% Cars	95.0	0	100	0	95.4	96.6	100	0	0	96.9	0	100	100	0	100	0	0	0	100	100	97.3	100	0	98.2	98.1	97.7
Heavy Vehicles																										
% Heavy Vehicles	5.0	0	0	0	4.6	3.4	0	0	0	3.1	0	0	0	0	0	0	0	0	0	0	2.7	0	0	1.8	1.9	2.3



N/S: Commander Shea Blvd
E/SE: Quincy Shore Drive/Billings Street
City, State: Quincy, MA
Client: Howard Stein-Hudson/M. Tremblay

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Groups Printed- Cars - Heavy Vehicles

	Commander Shea Boulevard From North				Quincy Shore Drive EB Offramp From Northeast				Quincy Shore Drive EB Onramp From East				Billings Street From Southeast				Commander Shea Boulevard From South				
Start Time	Thru	Bear Left	Left	Hard Left	Hard Right	Bear Left	Left	Hard Left	Hard Right	Right	Left	Hard Left	Hard Right	Right	Bear Right	Hard Left	Hard Right	Right	Bear Right	Thru	Int. Total
04:00 PM	29	0	2	0	17	5	0	0	0	0	0	0	0	0	0	1	25	0	0	22	101
04:15 PM	15	0	3	0	25	8	0	0	0	0	0	0	0	0	0	0	20	0	0	29	100
04:30 PM	30	0	3	0	20	7	0	0	0	0	0	0	0	0	0	2	23	0	0	36	121
04:45 PM	21	0	2	0	18	7	0	0	0	0	0	0	0	0	0	3	19	0	0	29	99
Total	95	0	10	0	80	27	0	0	0	0	0	0	0	0	0	6	87	0	0	116	421
05:00 PM	38	0	2	0	22	4	0	0	0	0	0	0	0	0	0	1	31	0	0	48	146
05:15 PM	19	0	2	0	34	4	0	0	0	0	0	0	0	0	0	0	18	0	0	45	122
05:30 PM	35	0	7	0	33	6	0	0	0	0	0	0	0	0	0	1	28	0	0	39	149
05:45 PM	20	0	5	0	19	14	0	0	0	0	0	0	0	0	0	0	20	0	0	38	116
Total	112	0	16	0	108	28	0	0	0	0	0	0	0	0	0	2	97	0	0	170	533
Grand Total	207	0	26	0	188	55	0	0	0	0	0	0	0	0	0	8	184	0	0	286	954
Apprch %	88.8	0	11.2	0	77.4	22.6	0	0	0	0	0	0	0	0	0	100	39.1	0	0	60.9	
Total %	21.7	0	2.7	0	19.7	5.8	0	0	0	0	0	0	0	0	0	0.8	19.3	0	0	30	
Cars	196	0	26	0	181	55	0	0	0	0	0	0	0	0	0	8	184	0	0	269	919
% Cars	94.7	0	100	0	96.3	100	0	0	0	0	0	0	0	0	0	100	100	0	0	94.1	96.3
Heavy Vehicles	11	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	35
% Heavy Vehicles	5.3	0	0	0	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.9	3.7

	Commander Shea Boulevard From North					Quincy Shore Drive EB Offramp From Northeast					Quincy Shore Drive EB Onramp From East					Billings Street From Southeast					Commander Shea Boulevard From South					
Start Time	Thru	Bear Left	Left	Hard Left	App. Total	Hard Right	Bear Left	Left	Hard Left	App. Total	Hard Right	Right	Left	Hard Left	App. Total	Hard Right	Right	Bear Right	Hard Left	App. Total	Hard Right	Right	Bear Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 05:00 PM																										
05:00 PM	**38**	**0**	**2**	**0**	**40**	**22**	**4**	**0**	**0**	**26**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**31**	**0**	**0**	**48**	**79**	**146**
05:15 PM	19	0	2	0	21	**34**	**4**	**0**	**0**	**38**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**0**	**0**	**45**	**63**	**122**
05:30 PM	35	0	**7**	**0**	**42**	33	6	0	0	**39**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**28**	**0**	**0**	**39**	**67**	**149**
05:45 PM	20	0	5	0	25	19	**14**																			
Total Volume	112	0	16	0	128	108	28	0	0	136	0	0	0	0	0	0	0	0	2	2	97	0	0	170	267	533
% App. Total	87.5	0	12.5	0		79.4	20.6	0	0		0	0	0	0		0	0	0	100		36.3	0	0	63.7		
PHF	.737	.000	.571	.000	.762	.794	.500	.000	.000	.872	.000	.000	.000	.000		.000	.000	.000	.500	.500	.782	.000	.000	.885	.845	.894
Cars	105	0	16	0	121	103	28	0	0	131	0	0	0	0	0	0	0	0	2	2	97	0	0	163	260	514
% Cars	93.8	0	100	0	94.5	95.4	100	0	0	96.3	0	0	0	0	0	0	0	0	100	100	100	0	0	95.9	97.4	96.4
Heavy Vehicles																										
% Heavy Vehicles	6.3	0	0	0	5.5	4.6	0	0	0	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	4.1	2.6	3.6

N/S: Commander Shea Blvd
E/SE: Quincy Shore Drive/Billings Street
City, State: Quincy, MA
Client: Howard Stein-Hudson/M. Tremblay

PRECISION DATA INDUSTRIES, LLC
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File Name : 122931 FF
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Cars

	Commander Shea Boulevard From North				Quincy Shore Drive EB Offramp From Northeast				Quincy Shore Drive EB Onramp From East				Billings Street From Southeast				Commander Shea Boulevard From South				
Start Time	Thru	Bear Left	Left	Hard Left	Hard Right	Bear Left	Left	Hard Left	Hard Right	Right	Left	Hard Left	Hard Right	Right	Bear Right	Hard Left	Hard Right	Right	Bear Right	Thru	Int. Total
04:00 PM	29	0	2	0	17	5	0	0	0	0	0	0	0	0	0	1	25	0	0	21	100
04:15 PM	14	0	3	0	24	8	0	0	0	0	0	0	0	0	0	0	20	0	0	26	95
04:30 PM	29	0	3	0	20	7	0	0	0	0	0	0	0	0	0	2	23	0	0	34	118
04:45 PM	19	0	2	0	17	7	0	0	0	0	0	0	0	0	0	3	19	0	0	25	92
Total	91	0	10	0	78	27	0	0	0	0	0	0	0	0	0	6	87	0	0	106	405
05:00 PM	37	0	2	0	22	4	0	0	0	0	0	0	0	0	0	1	31	0	0	46	143
05:15 PM	17	0	2	0	32	4	0	0	0	0	0	0	0	0	0	0	18	0	0	43	116
05:30 PM	32	0	7	0	30	6	0	0	0	0	0	0	0	0	0	1	28	0	0	37	141
05:45 PM	19	0	5	0	19	14	0	0	0	0	0	0	0	0	0	0	20	0	0	37	114
Total	105	0	16	0	103	28	0	0	0	0	0	0	0	0	0	2	97	0	0	163	514
Grand Total	196	0	26	0	181	55	0	0	0	0	0	0	0	0	0	8	184	0	0	269	919
Apprch %	88.3	0	11.7	0	76.7	23.3	0	0	0	0	0	0	0	0	0	100	40.6	0	0	59.4	
Total %	21.3	0	2.8	0	19.7	6	0	0	0	0	0	0	0	0	0	0.9	20	0	0	29.3	

	Commander Shea Boulevard From North					Quincy Shore Drive EB Offramp From Northeast					Quincy Shore Drive EB Onramp From East					Billings Street From Southeast					Commander Shea Boulevard From South					
Start Time	Thru	Bear Left	Left	Hard Left	App. Total	Hard Right	Bear Left	Left	Hard Left	App. Total	Hard Right	Right	Left	Hard Left	App. Total	Hard Right	Right	Bear Right	Hard Left	App. Total	Hard Right	Right	Bear Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 05:00 PM																										
05:00 PM	**37**	**0**	**2**	**0**	**39**	22	4	0	0	26	0	0	0	0	0	0	0	0	**1**	**1**	**31**	**0**	**0**	**46**	**77**	**143**
05:15 PM	17	0	2	0	19	**32**				**36**																
05:30 PM	32	0	**7**	**0**	**39**	**30**	**6**	**0**	**0**	**36**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**28**	**0**	**0**	**37**	**65**	**141**
05:45 PM	19	0	5	0	24	19	**14**	**0**	**0**	**33**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**0**	**0**	**37**	**57**	**114**
Total Volume	105	0	16	0	121	103	28	0	0	131	0	0	0	0	0	0	0	0	2	2	97	0	0	163	260	514
% App. Total	86.8	0	13.2	0		78.6	21.4	0	0		0	0	0	0		0	0	0	100		37.3	0	0	62.7		
PHF	.709	.000	.571	.000	.776	.805	.500	.000	.000	.910	.000	.000	.000	.000		.000	.000	.000	.500	.500	.782	.000	.000	.886	.844	.899

N/S: Commander Shea Blvd
E/SE: Quincy Shore Drive/Billings Street
City, State: Quincy, MA
Client: Howard Stein-Hudson/M. Tremblay

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Groups Printed- Heavy Vehicles

	Commander Shea Boulevard From North				Quincy Shore Drive EB Offramp From Northeast				Quincy Shore Drive EB Onramp From East				Billings Street From Southeast				Commander Shea Boulevard From South				
Start Time	Thru	Bear Left	Left	Hard Left	Hard Right	Bear Left	Left	Hard Left	Hard Right	Right	Left	Hard Left	Hard Right	Right	Bear Right	Hard Left	Hard Right	Right	Bear Right	Thru	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
04:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5
04:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3
04:45 PM	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	7
Total	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	16
05:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3
05:15 PM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6
05:30 PM	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8
05:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Total	7	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	19
Grand Total	11	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	35
Apprch %	100	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	
Total %	31.4	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48.6	

	Commander Shea Boulevard From North					Quincy Shore Drive EB Offramp From Northeast					Quincy Shore Drive EB Onramp From East					Billings Street From Southeast					Commander Shea Boulevard From South					
Start Time	Thru	Bear Left	Left	Hard Left	App. Total	Hard Right	Bear Left	Left	Hard Left	App. Total	Hard Right	Right	Left	Hard Left	App. Total	Hard Right	Right	Bear Right	Hard Left	App. Total	Hard Right	Right	Bear Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 04:45 PM																										
04:45 PM	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**	**4**	**7**
05:00 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3
05:15 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	6
05:30 PM	**3**				**3**	**3**				**3**																**8**
Total Volume	8	0	0	0	8	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10	24
% App. Total	100	0	0	0		100	0	0	0		0	0	0	0		0	0	0	0		0	0	0	100		
PHF	.667	.000	.000	.000	.667	.500	.000	.000	.000	.500	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.625	.625	.750

N/S: Commander Shea Blvd
E/SE: Quincy Shore Drive/Billings Street
City, State: Quincy, MA
Client: Howard Stein-Hudson/M. Tremblay

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Groups Printed- Peds and Bicycles

	Commander Shea Boulevard From North					Quincy Shore Drive EB Offramp From Northeast					Quincy Shore Drive EB Onramp From East					Billings Street From Southeast					Commander Shea Boulevard From South					
Start Time	Thru	Bear Left	Left	Hard Left	Peds	Hard Right	Bear Left	Left	Hard Left	Peds	Hard Right	Right	Left	Hard Left	Peds	Hard Right	Right	Bear Right	Hard Left	Peds	Hard Right	Right	Bear Right	Thru	Peds	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	9
04:15 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	15
04:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	12
04:45 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	9
Total	0	0	0	0	0	0	0	0	0	15	0	0	0	0	15	0	0	0	0	15	0	0	0	0	0	45
05:00 PM	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	0	0	0	0	7	0	0	0	0	0	21
05:15 PM	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9	0	0	0	0	9	0	0	0	0	0	27
05:30 PM	0	0	0	0	0	0	0	0	0	10	0	0	0	0	10	0	0	0	0	10	0	0	0	0	0	30
05:45 PM	0	0	0	0	0	0	0	0	0	15	0	0	0	0	15	0	0	0	0	15	0	0	0	0	0	45
Total	0	0	0	0	0	0	0	0	0	41	0	0	0	0	41	0	0	0	0	41	0	0	0	0	0	123
Grand Total	0	0	0	0	0	0	0	0	0	56	0	0	0	0	56	0	0	0	0	56	0	0	0	0	0	168
Apprch %	0	0	0	0	0	0	0	0	0	100	0	0	0	0	100	0	0	0	0	100	0	0	0	0	0	
Total %	0	0	0	0	0	0	0	0	0	33.3	0	0	0	0	33.3	0	0	0	0	33.3	0	0	0	0	0	

	Commander Shea Boulevard From North						Quincy Shore Drive EB Offramp From Northeast						Quincy Shore Drive EB Onramp From East						Billings Street From Southeast						Commander Shea Boulevard From South						
Start Time	Thru	Bear Left	Left	Hard Left	Peds	App. Total	Hard Right	Bear Left	Left	Hard Left	Peds	App. Total	Hard Right	Right	Left	Hard Left	Peds	App. Total	Hard Right	Right	Bear Right	Hard Left	Peds	App. Total	Hard Right	Right	Bear Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 05:00 PM																															
05:00 PM	0	0	0	0	0	0	0	0	0	0	7	7	0	0	0	0	7	7	0	0	0	0	7	7	0	0	0	0	0	0	21
05:15 PM	0	0	0	0	0	0	0	0	0	0	9	9	0	0	0	0	9	9	0	0	0	0	9	9	0	0	0	0	0	0	27
05:30 PM	0	0	0	0	0	0	0	0	0	0	10	10	0	0	0	0	10	10	0	0	0	0	10	10	0	0	0	0	0	0	30
05:45 PM	0	0	0	0	0	0	0	0	0	0	**15**	**15**	0	0	0	0	**15**	**15**					**15**	**15**	0	0	0	0	0	0	**45**
Total Volume	0	0	0	0	0	0	0	0	0	0	41	41	0	0	0	0	41	41	0	0	0	0	41	41	0	0	0	0	0	0	123
% App. Total	0	0	0	0	0		0	0	0	0	100		0	0	0	0	100		0	0	0	0	100		0	0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.683	.683	.000	.000	.000	.000	.683	.683	.000	.000	.000	.000	.683	.683	.000	.000	.000	.000	.000	.000	.683

N/S: Commander Shea Blvd
E/SE: Quincy Shore Drive/Billings Street
City, State: Quincy, MA
Client: Howard Stein-Hudson/M. Tremblay

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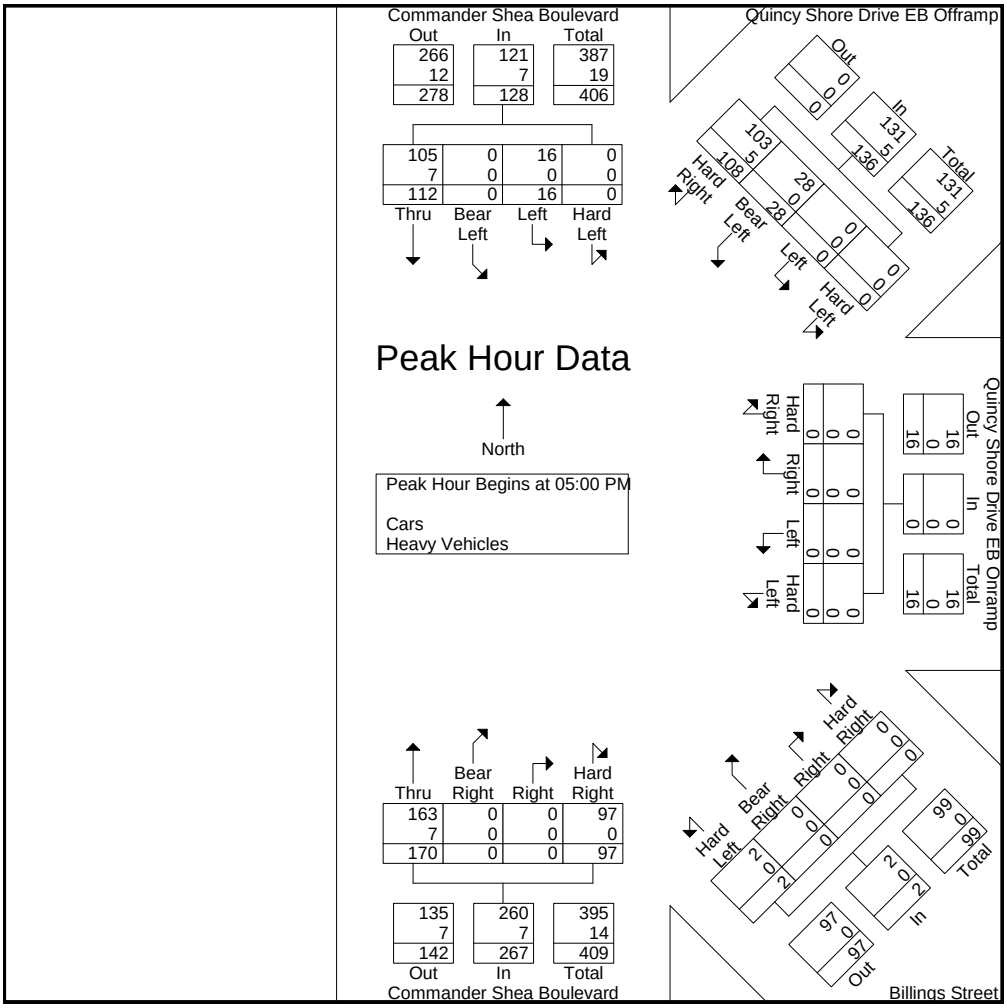
	Commander Shea Boulevard From North					Quincy Shore Drive EB Offramp From Northeast					Quincy Shore Drive EB Onramp From East					Billings Street From Southeast					Commander Shea Boulevard From South					
Start Time	Thru	Bear Left	Left	Hard Left	App. Total	Hard Right	Bear Left	Left	Hard Left	App. Total	Hard Right	Right	Left	Hard Left	App. Total	Hard Right	Right	Bear Right	Hard Left	App. Total	Hard Right	Right	Bear Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 05:00 PM																										
05:00 PM	**38**	**0**	**2**	**0**	**40**	**22**	**4**	**0**	**0**	**26**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**31**	**0**	**0**	**48**	**79**	**146**
05:15 PM	19	0	2	0	21	**34**	**4**	**0**	**0**	**38**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**0**	**0**	**45**	**63**	**122**
05:30 PM	35	0	**7**	**0**	**42**	33	6	0	0	**39**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**28**	**0**	**0**	**39**	**67**	**149**
05:45 PM	20	0	5	0	25	19	**14**																			
Total Volume	112	0	16	0	128	108	28	0	0	136	0	0	0	0	0	0	0	0	2	2	97	0	0	170	267	533
% App. Total	87.5	0	12.5	0		79.4	20.6	0	0		0	0	0	0		0	0	0	100		36.3	0	0	63.7		
PHF	.737	.000	.571	.000	.762	.794	.500	.000	.000	.872	.000	.000	.000	.000		.000	.000	.000	.500	.500	.782	.000	.000	.885	.845	.894
Cars	105	0	16	0	121	103	28	0	0	131	0	0	0	0	0	0	0	0	2	2	97	0	0	163	260	514
% Cars	93.8	0	100	0	94.5	95.4	100	0	0	96.3	0	0	0	0	0	0	0	0	100	100	100	0	0	95.9	97.4	96.4
Heavy Vehicles																										
% Heavy Vehicles	6.3	0	0	0	5.5	4.6	0	0	0	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	4.1	2.6	3.6



S: Quincy Shore Drive WB Ramps
E/W: Commander Shea Boulevard
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Cars - Heavy Vehicles

	Commander Shea Boulevard From East			Quincy Shore WB Ramps From South			Commander Shea Boulevard From West			
Start Time	Thru	Left	U-Turn	Right	Left	U-Turn	Right	Thru	U-Turn	Int. Total
07:00 AM	15	95	0	2	3	0	65	44	0	224
07:15 AM	17	94	0	2	9	0	94	25	0	241
07:30 AM	10	72	0	0	7	1	111	24	0	225
07:45 AM	4	67	0	2	7	0	80	33	0	193
Total	46	328	0	6	26	1	350	126	0	883
08:00 AM	3	73	0	1	13	1	93	31	0	215
08:15 AM	7	69	0	0	7	1	117	47	0	248
08:30 AM	5	70	0	2	9	1	120	29	0	236
08:45 AM	4	89	0	2	4	0	89	45	0	233
Total	19	301	0	5	33	3	419	152	0	932
Grand Total	65	629	0	11	59	4	769	278	0	1815
Apprch %	9.4	90.6	0	14.9	79.7	5.4	73.4	26.6	0	
Total %	3.6	34.7	0	0.6	3.3	0.2	42.4	15.3	0	
Cars	65	629	0	11	59	4	769	278	0	1815
% Cars	100	100	0	100	100	100	100	100	0	100
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0

	Commander Shea Boulevard From East				Quincy Shore WB Ramps From South				Commander Shea Boulevard From West				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total

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

Peak Hour for Entire Intersection Begins at 08:00 AM

08:00 AM	3	73	0	76	1	**13**	**1**	**15**	93	31	0	124	215
08:15 AM	**7**	69	0	76	0	7	1	8	117	**47**		**164**	**248**
08:30 AM	5	70	0	75	**2**	9	1	12	**120**	29	0	149	236
08:45 AM	4	**89**		**93**	2	4	0	6	89	45	0	134	233
Total Volume	19	301	0	320	5	33	3	41	419	152	0	571	932
% App. Total	5.9	94.1	0		12.2	80.5	7.3		73.4	26.6	0		
PHF	.679	.846	.000	.860	.625	.635	.750	.683	.873	.809	.000	.870	.940
Cars	19	301	0	320	5	33	3	41	419	152	0	571	932
% Cars	100	100	0	100	100	100	100	100	100	100	0	100	100
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0

S: Quincy Shore Drive WB Ramps
E/W: Commander Shea Boulevard
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Cars

	Commander Shea Boulevard From East			Quincy Shore WB Ramps From South			Commander Shea Boulevard From West			
Start Time	Thru	Left	U-Turn	Right	Left	U-Turn	Right	Thru	U-Turn	Int. Total
07:00 AM	15	95	0	2	3	0	65	44	0	224
07:15 AM	17	94	0	2	9	0	94	25	0	241
07:30 AM	10	72	0	0	7	1	111	24	0	225
07:45 AM	4	67	0	2	7	0	80	33	0	193
Total	46	328	0	6	26	1	350	126	0	883
08:00 AM	3	73	0	1	13	1	93	31	0	215
08:15 AM	7	69	0	0	7	1	117	47	0	248
08:30 AM	5	70	0	2	9	1	120	29	0	236
08:45 AM	4	89	0	2	4	0	89	45	0	233
Total	19	301	0	5	33	3	419	152	0	932
Grand Total	65	629	0	11	59	4	769	278	0	1815
Apprch %	9.4	90.6	0	14.9	79.7	5.4	73.4	26.6	0	
Total %	3.6	34.7	0	0.6	3.3	0.2	42.4	15.3	0	

	Commander Shea Boulevard From East				Quincy Shore WB Ramps From South				Commander Shea Boulevard From West				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	3	73	0	76	1	**13**	**1**	**15**	93	31	0	124	215
08:15 AM	**7**	69	0	76	0	7	1	8	117	**47**		**164**	**248**
08:30 AM	5	70	0	75	**2**	9	1	12	**120**	29	0	149	236
08:45 AM	4	**89**		**93**	2	4	0	6	89	45	0	134	233
Total Volume	19	301	0	320	5	33	3	41	419	152	0	571	932
% App. Total	5.9	94.1	0		12.2	80.5	7.3		73.4	26.6	0		
PHF	.679	.846	.000	.860	.625	.635	.750	.683	.873	.809	.000	.870	.940

S: Quincy Shore Drive WB Ramps
E/W: Commander Shea Boulevard
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Heavy Vehicles

	Commander Shea Boulevard From East			Quincy Shore WB Ramps From South			Commander Shea Boulevard From West			
Start Time	Thru	Left	U-Turn	Right	Left	U-Turn	Right	Thru	U-Turn	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	0	0	0	
Total %										

	Commander Shea Boulevard From East				Quincy Shore WB Ramps From South				Commander Shea Boulevard From West				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

S: Quincy Shore Drive WB Ramps
E/W: Commander Shea Boulevard
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Groups Printed- Peds and Bicycles

	Commander Shea Boulevard From East			Quincy Shore WB Ramps From South			Commander Shea Boulevard From West			
Start Time	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	3	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	3	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	1	0	0	0	1
08:30 AM	0	0	0	0	0	1	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	0	0	2
Grand Total	0	0	0	0	0	5	0	0	0	5
Apprch %	0	0	0	0	0	100	0	0	0	
Total %	0	0	0	0	0	100	0	0	0	

	Commander Shea Boulevard From East				Quincy Shore WB Ramps From South				Commander Shea Boulevard From West				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	0	0	0	0	0	0	**3**	**3**	0	0	0	0	**3**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	1
Total Volume	0	0	0	0	0	0	4	4	0	0	0	0	4
% App. Total	0	0	0		0	0	100		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.333	.333	.000	.000	.000	.000	.333

S: Quincy Shore Drive WB Ramps
E/W: Commander Shea Boulevard
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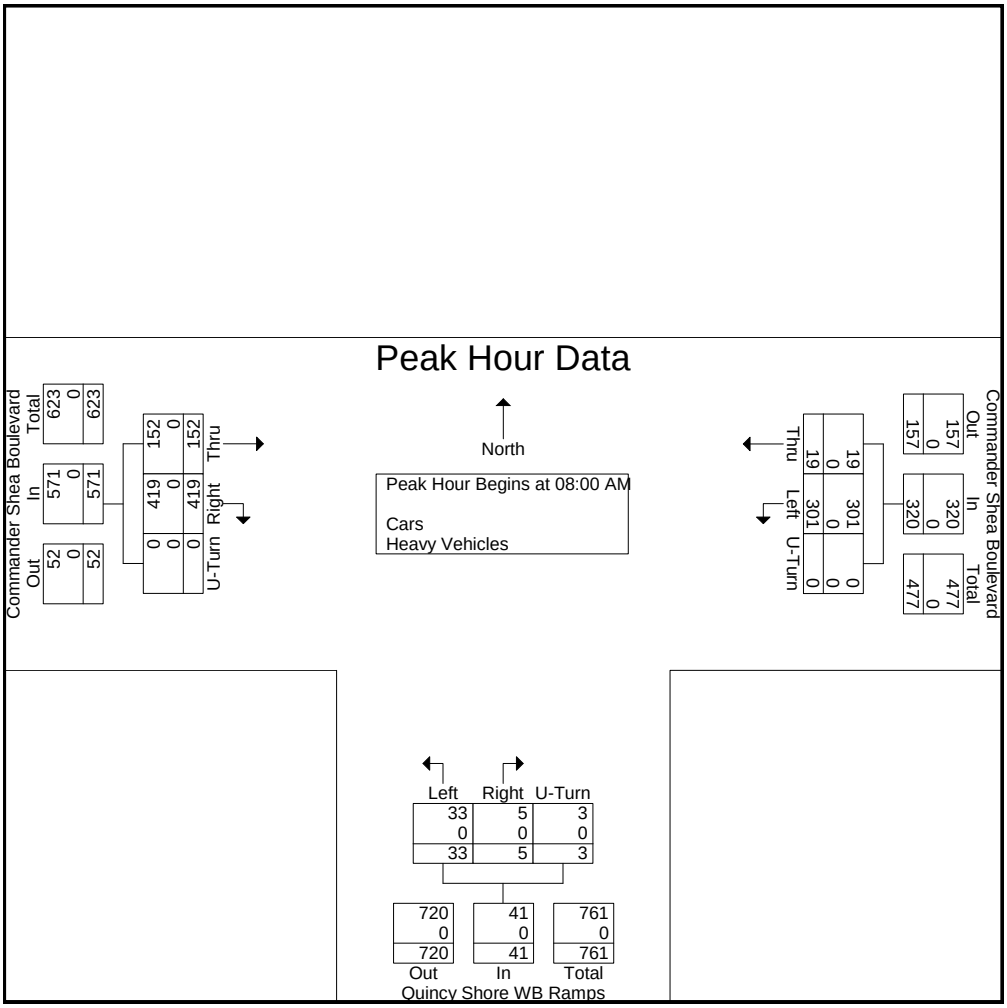
	Commander Shea Boulevard From East				Quincy Shore WB Ramps From South				Commander Shea Boulevard From West				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	3	73	0	76	1	**13**	**1**	**15**	93	31	0	124	215
08:15 AM	**7**	69	0	76	0	7	1	8	117	**47**		**164**	**248**
08:30 AM	5	70	0	75	**2**	9	1	12	**120**	29	0	149	236
08:45 AM	4	**89**		**93**	2	4	0	6	89	45	0	134	233
Total Volume	19	301	0	320	5	33	3	41	419	152	0	571	932
% App. Total	5.9	94.1	0		12.2	80.5	7.3		73.4	26.6	0		
PHF	.679	.846	.000	.860	.625	.635	.750	.683	.873	.809	.000	.870	.940
Cars	19	301	0	320	5	33	3	41	419	152	0	571	932
% Cars	100	100	0	100	100	100	100	100	100	100	0	100	100
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0



S: Quincy Shore Drive WB Ramps
E/W: Commander Shea Boulevard
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Groups Printed- Cars - Heavy Vehicles

	Commander Shea Boulevard From East			Quincy Shore Drive WB Ramps From South			Commander Shea Boulevard From West			
Start Time	Thru	Left	U-Turn	Right	Left	U-Turn	Right	Thru	U-Turn	Int. Total
04:00 PM	20	8	0	2	8	0	24	13	0	75
04:15 PM	15	8	0	2	3	1	26	17	0	72
04:30 PM	24	28	0	2	6	2	11	37	0	110
04:45 PM	19	20	0	7	4	1	19	33	0	103
Total	78	64	0	13	21	4	80	100	0	360
05:00 PM	32	50	0	1	10	1	20	39	0	153
05:15 PM	17	32	0	2	2	1	19	63	0	136
05:30 PM	33	20	0	5	10	0	21	44	0	133
05:45 PM	16	23	0	5	7	3	18	32	0	104
Total	98	125	0	13	29	5	78	178	0	526
Grand Total	176	189	0	26	50	9	158	278	0	886
Apprch %	48.2	51.8	0	30.6	58.8	10.6	36.2	63.8	0	
Total %	19.9	21.3	0	2.9	5.6	1	17.8	31.4	0	
Cars	166	180	0	25	50	9	158	257	0	845
% Cars	94.3	95.2	0	96.2	100	100	100	92.4	0	95.4
Heavy Vehicles	10	9	0	1	0	0	0	21	0	41
% Heavy Vehicles	5.7	4.8	0	3.8	0	0	0	7.6	0	4.6

	Commander Shea Boulevard From East				Quincy Shore Drive WB Ramps From South				Commander Shea Boulevard From West				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	32	**50**	**0**	**82**	1	**10**	1	12	20	39	0	59	**153**
05:15 PM	17	32	0	49	2	2	1	5	19	**63**		**82**	136
05:30 PM	**33**	20	0	53	**5**	10	0	**15**	**21**	44	0	65	133
05:45 PM	16	23	0	39	5	7	**3**	15	18	32	0	50	104
Total Volume	98	125	0	223	13	29	5	47	78	178	0	256	526
% App. Total	43.9	56.1	0		27.7	61.7	10.6		30.5	69.5	0		
PHF	.742	.625	.000	.680	.650	.725	.417	.783	.929	.706	.000	.780	.859
Cars	92	119	0	211	12	29	5	46	78	168	0	246	503
% Cars	93.9	95.2	0	94.6	92.3	100	100	97.9	100	94.4	0	96.1	95.6
Heavy Vehicles	6	6	0	12	1	0	0	1	0	10	0	10	23
% Heavy Vehicles	6.1	4.8	0	5.4	7.7	0	0	2.1	0	5.6	0	3.9	4.4

S: Quincy Shore Drive WB Ramps
E/W: Commander Shea Boulevard
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Site Code : 2011140.
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Groups Printed- Cars

	Commander Shea Boulevard From East			Quincy Shore Drive WB Ramps From South			Commander Shea Boulevard From West			
Start Time	Thru	Left	U-Turn	Right	Left	U-Turn	Right	Thru	U-Turn	Int. Total
04:00 PM	20	8	0	2	8	0	24	12	0	74
04:15 PM	14	7	0	2	3	1	26	13	0	66
04:30 PM	23	27	0	2	6	2	11	35	0	106
04:45 PM	17	19	0	7	4	1	19	29	0	96
Total	74	61	0	13	21	4	80	89	0	342
05:00 PM	31	48	0	1	10	1	20	37	0	148
05:15 PM	15	30	0	2	2	1	19	60	0	129
05:30 PM	31	19	0	5	10	0	21	41	0	127
05:45 PM	15	22	0	4	7	3	18	30	0	99
Total	92	119	0	12	29	5	78	168	0	503
Grand Total	166	180	0	25	50	9	158	257	0	845
Apprch %	48	52	0	29.8	59.5	10.7	38.1	61.9	0	
Total %	19.6	21.3	0	3	5.9	1.1	18.7	30.4	0	

	Commander Shea Boulevard From East				Quincy Shore Drive WB Ramps From South				Commander Shea Boulevard From West				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	**31**	**48**	**0**	**79**	1	**10**	1	12	20	37	0	57	**148**
05:15 PM	15	30	0	45	2	2	1	5	19	**60**		**79**	129
05:30 PM	31	19	0	50	**5**	10	0	**15**	**21**	41	0	62	127
05:45 PM	15	22	0	37	4	7	**3**	14	18	30	0	48	99
Total Volume	92	119	0	211	12	29	5	46	78	168	0	246	503
% App. Total	43.6	56.4	0		26.1	63	10.9		31.7	68.3	0		
PHF	.742	.620	.000	.668	.600	.725	.417	.767	.929	.700	.000	.778	.850

S: Quincy Shore Drive WB Ramps
E/W: Commander Shea Boulevard
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Heavy Vehicles

	Commander Shea Boulevard From East			Quincy Shore Drive WB Ramps From South			Commander Shea Boulevard From West			
Start Time	Thru	Left	U-Turn	Right	Left	U-Turn	Right	Thru	U-Turn	Int. Total
04:00 PM	0	0	0	0	0	0	0	1	0	1
04:15 PM	1	1	0	0	0	0	0	4	0	6
04:30 PM	1	1	0	0	0	0	0	2	0	4
04:45 PM	2	1	0	0	0	0	0	4	0	7
Total	4	3	0	0	0	0	0	11	0	18
05:00 PM	1	2	0	0	0	0	0	2	0	5
05:15 PM	2	2	0	0	0	0	0	3	0	7
05:30 PM	2	1	0	0	0	0	0	3	0	6
05:45 PM	1	1	0	1	0	0	0	2	0	5
Total	6	6	0	1	0	0	0	10	0	23
Grand Total	10	9	0	1	0	0	0	21	0	41
Apprch %	52.6	47.4	0	100	0	0	0	100	0	
Total %	24.4	22	0	2.4	0	0	0	51.2	0	

	Commander Shea Boulevard From East				Quincy Shore Drive WB Ramps From South				Commander Shea Boulevard From West				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	**2**	1	0	3	0	0	0	0	0	**4**	**0**	**4**	**7**
05:00 PM	1	**2**											
05:15 PM	**2**	**2**	**0**	**4**	0	0	0	0	0	3	0	3	7
05:30 PM	2	1	0	3	0	0	0	0	0	3	0	3	6
Total Volume	7	6	0	13	0	0	0	0	0	12	0	12	25
% App. Total	53.8	46.2	0		0	0	0		0	100	0		
PHF	.875	.750	.000	.813	.000	.000	.000	.000	.000	.750	.000	.750	.893

S: Quincy Shore Drive WB Ramps
E/W: Commander Shea Boulevard
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Peds and Bicycles

	Commander Shea Boulevard From East			Quincy Shore Drive WB Ramps From South			Commander Shea Boulevard From West			
Start Time	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	2	0	0	0	2
04:45 PM	0	0	0	0	0	4	0	0	0	4
Total	0	0	0	0	0	6	0	0	0	6
05:00 PM	0	0	0	0	0	2	0	0	0	2
05:15 PM	0	0	0	0	0	1	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	8	0	0	0	8
Total	0	0	0	0	0	11	0	0	0	11
Grand Total	0	0	0	0	0	17	0	0	0	17
Apprch %	0	0	0	0	0	100	0	0	0	
Total %	0	0	0	0	0	100	0	0	0	

	Commander Shea Boulevard From East				Quincy Shore Drive WB Ramps From South				Commander Shea Boulevard From West				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	0	0	0	0	0	2	2	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	**8**	**8**	0	0	0	0	**8**
Total Volume	0	0	0	0	0	0	11	11	0	0	0	0	11
% App. Total	0	0	0		0	0	100		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.344	.344	.000	.000	.000	.000	.344

S: Quincy Shore Drive WB Ramps
E/W: Commander Shea Boulevard
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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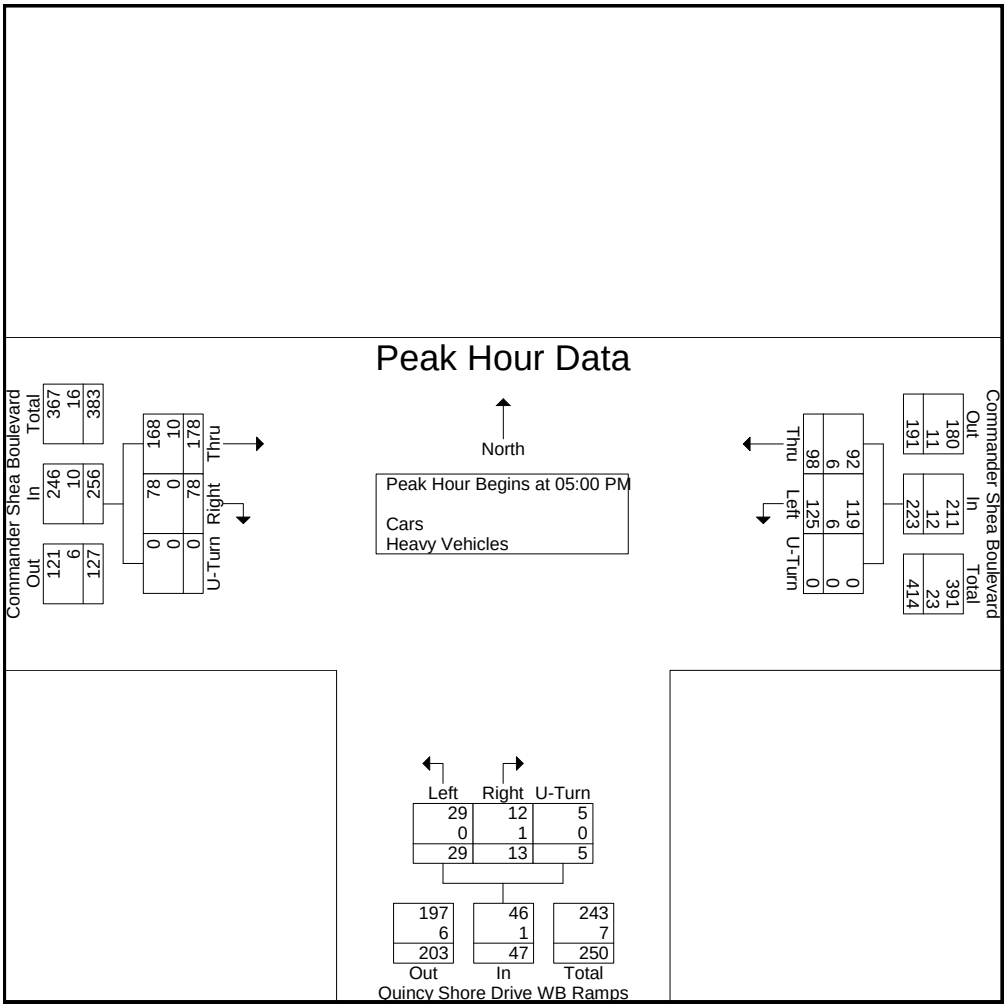
	Commander Shea Boulevard From East				Quincy Shore Drive WB Ramps From South				Commander Shea Boulevard From West				
Start Time	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	32	**50**	**0**	**82**	1	**10**	1	12	20	39	0	59	**153**
05:15 PM	17	32	0	49	2	2	1	5	19	**63**		**82**	136
05:30 PM	**33**	20	0	53	**5**	10	0	**15**	**21**	44	0	65	133
05:45 PM	16	23	0	39	5	7	**3**	15	18	32	0	50	104
Total Volume	98	125	0	223	13	29	5	47	78	178	0	256	526
% App. Total	43.9	56.1	0		27.7	61.7	10.6		30.5	69.5	0		
PHF	.742	.625	.000	.680	.650	.725	.417	.783	.929	.706	.000	.780	.859
Cars	92	119	0	211	12	29	5	46	78	168	0	246	503
% Cars	93.9	95.2	0	94.6	92.3	100	100	97.9	100	94.4	0	96.1	95.6
Heavy Vehicles	6	6	0	12	1	0	0	1	0	10	0	10	23
% Heavy Vehicles	6.1	4.8	0	5.4	7.7	0	0	2.1	0	5.6	0	3.9	4.4



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Traffic Counts with Precision

Client:	Engineer:	Site Code:	Date:	PDI Job Number:	City, State:
Howard Stein-Hudson	M. Tremblay	2011140	Tuesday 8/14/12	123014	Quincy, MA

N/S: Victory Road
W: Seaport Drive
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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File Name : 123014 A
Site Code : 2011140
Start Date : 8/14/2012
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Victory Road From North			Victory Road From South			Seaport Drive From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
07:00 AM	17	6	2	18	51	0	5	4	0	103
07:15 AM	19	6	1	20	85	0	2	10	3	146
07:30 AM	12	6	1	25	66	0	3	11	0	124
07:45 AM	14	8	0	27	59	0	2	5	0	115
Total	62	26	4	90	261	0	12	30	3	488
08:00 AM	14	8	3	33	74	0	12	12	1	157
08:15 AM	24	7	0	27	70	1	18	9	0	156
08:30 AM	14	21	0	58	55	0	15	19	1	183
08:45 AM	14	11	6	31	50	0	10	7	0	129
Total	66	47	9	149	249	1	55	47	2	625
Grand Total	128	73	13	239	510	1	67	77	5	1113
Apprch %	59.8	34.1	6.1	31.9	68	0.1	45	51.7	3.4	
Total %	11.5	6.6	1.2	21.5	45.8	0.1	6	6.9	0.4	
Cars	121	71	13	237	506	1	57	73	5	1084
% Cars	94.5	97.3	100	99.2	99.2	100	85.1	94.8	100	97.4
Heavy Vehicles	7	2	0	2	4	0	10	4	0	29
% Heavy Vehicles	5.5	2.7	0	0.8	0.8	0	14.9	5.2	0	2.6

	Victory Road From North				Victory Road From South				Seaport Drive From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	14	8	3	25	33	**74**	0	107	12	12	**1**	**25**	**157**
08:15 AM	**24**	7	0	31	27	70	**1**	98	**18**	9	0	27	156
08:30 AM	14	**21**		**35**	**58**	55	0	**113**	15	**19**		**35**	**183**
08:45 AM	14	11	**6**										
Total Volume	**66**	**47**	**9**	**122**	**149**	**249**	**1**	**399**	**55**	**47**	**2**	**104**	**625**
% App. Total	**54.1**	**38.5**	**7.4**		**37.3**	**62.4**	**0.3**		**52.9**	**45.2**	**1.9**		
PHF	**.688**	**.560**	**.375**	**.871**	**.642**	**.841**	**.250**	**.883**	**.764**	**.618**	**.500**	**.743**	**.854**
Cars	**62**	**46**	**9**	**117**	**148**	**245**	**1**	**394**	**48**	**44**	**2**	**94**	**605**
% Cars	**93.9**	**97.9**	**100**	**95.9**	**99.3**	**98.4**	**100**	**98.7**	**87.3**	**93.6**	**100**	**90.4**	**96.8**
Heavy Vehicles	**4**	**1**	**0**	**5**	**1**	**4**	**0**	**5**	**7**	**3**	**0**	**10**	**20**
% Heavy Vehicles	6.1	2.1	0	4.1	0.7	1.6	0	1.3	12.7	6.4	0	9.6	3.2

N/S: Victory Road
W: Seaport Drive
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Site Code : 2011140
Start Date : 8/14/2012
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Groups Printed- Cars

	Victory Road From North			Victory Road From South			Seaport Drive From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
07:00 AM	17	6	2	18	51	0	4	4	0	102
07:15 AM	18	5	1	20	85	0	1	9	3	142
07:30 AM	11	6	1	24	66	0	3	11	0	122
07:45 AM	13	8	0	27	59	0	1	5	0	113
Total	59	25	4	89	261	0	9	29	3	479
08:00 AM	13	8	3	32	74	0	10	11	1	152
08:15 AM	23	7	0	27	69	1	18	9	0	154
08:30 AM	14	20	0	58	54	0	12	17	1	176
08:45 AM	12	11	6	31	48	0	8	7	0	123
Total	62	46	9	148	245	1	48	44	2	605
Grand Total	121	71	13	237	506	1	57	73	5	1084
Apprch %	59	34.6	6.3	31.9	68	0.1	42.2	54.1	3.7	
Total %	11.2	6.5	1.2	21.9	46.7	0.1	5.3	6.7	0.5	

	Victory Road From North				Victory Road From South				Seaport Drive From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	13	8	3	24	32	**74**	0	106	10	11	**1**	**22**	**152**
08:15 AM	**23**	7	0	30	27	69	**1**	97	**18**	9	0	27	154
08:30 AM	14	**20**		**34**	**58**	54	0	**112**	12	**17**		**30**	**176**
08:45 AM	12	11	**6**										
Total Volume	**62**	**46**	**9**	**117**	**148**	**245**	**1**	**394**	**48**	**44**	**2**	**94**	**605**
% App. Total	**53**	**39.3**	**7.7**		**37.6**	**62.2**	**0.3**		**51.1**	**46.8**	**2.1**		
PHF	**.674**	**.575**	**.375**	**.860**	**.638**	**.828**	**.250**	**.879**	**.667**	**.647**	**.500**	**.783**	**.859**

N/S: Victory Road
W: Seaport Drive
City, State: Quincy, MA
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Groups Printed- Heavy Vehicles

	Victory Road From North			Victory Road From South			Seaport Drive From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
07:00 AM	0	0	0	0	0	0	1	0	0	1
07:15 AM	1	1	0	0	0	0	1	1	0	4
07:30 AM	1	0	0	1	0	0	0	0	0	2
07:45 AM	1	0	0	0	0	0	1	0	0	2
Total	3	1	0	1	0	0	3	1	0	9
08:00 AM	1	0	0	1	0	0	2	1	0	5
08:15 AM	1	0	0	0	1	0	0	0	0	2
08:30 AM	0	1	0	0	1	0	3	2	0	7
08:45 AM	2	0	0	0	2	0	2	0	0	6
Total	4	1	0	1	4	0	7	3	0	20
Grand Total	7	2	0	2	4	0	10	4	0	29
Apprch %	77.8	22.2	0	33.3	66.7	0	71.4	28.6	0	
Total %	24.1	6.9	0	6.9	13.8	0	34.5	13.8	0	

	Victory Road From North				Victory Road From South				Seaport Drive From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	1	0	0	1	**1**	0	0	1	2	1	0	3	5
08:15 AM	1	0	0	1	0	1	0	1	0	0	0	0	2
08:30 AM	0	**1**							**3**	**2**		**5**	**7**
08:45 AM	**2**	0	0	**2**	0	**2**	0	**2**	2	0	0	2	6
Total Volume	4	1	0	5	1	4	0	5	7	3	0	10	20
% App. Total	80	20	0		20	80	0		70	30	0		
PHF	.500	.250	.000	.625	.250	.500	.000	.625	.583	.375	.000	.500	.714

N/S: Victory Road
W: Seaport Drive
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Peds and Bicycles

	Victory Road From North			Victory Road From South			Seaport Drive From West			
Start Time	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	Int. Total
07:00 AM	0	0	2	0	0	1	0	0	0	3
07:15 AM	0	0	1	0	0	0	0	0	1	2
07:30 AM	1	2	1	2	0	1	0	0	0	7
07:45 AM	1	1	0	1	1	0	0	0	0	4
Total	2	3	4	3	1	2	0	0	1	16
08:00 AM	0	0	3	0	0	0	0	0	0	3
08:15 AM	1	1	0	0	0	0	0	1	0	3
08:30 AM	0	0	0	0	0	0	0	1	0	1
08:45 AM	0	0	6	0	0	0	0	0	0	6
Total	1	1	9	0	0	0	0	2	0	13
Grand Total	3	4	13	3	1	2	0	2	1	29
Apprch %	15	20	65	50	16.7	33.3	0	66.7	33.3	
Total %	10.3	13.8	44.8	10.3	3.4	6.9	0	6.9	3.4	

	Victory Road From North				Victory Road From South				Seaport Drive From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	**1**	**2**	**1**	**4**	**2**	0	**1**	**3**	0	0	0	0	**7**
07:45 AM	1	1	0	2	1	**1**	0	2	0	0	0	0	4
08:00 AM	0	0	**3**										
08:15 AM	**1**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	3
Total Volume	3	4	4	11	3	1	1	5	0	1	0	1	17
% App. Total	27.3	36.4	36.4		60	20	20		0	100	0		
PHF	.750	.500	.333	.688	.375	.250	.250	.417	.000	.250	.000	.250	.607

N/S: Victory Road
W: Seaport Drive
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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File Name : 123014 A
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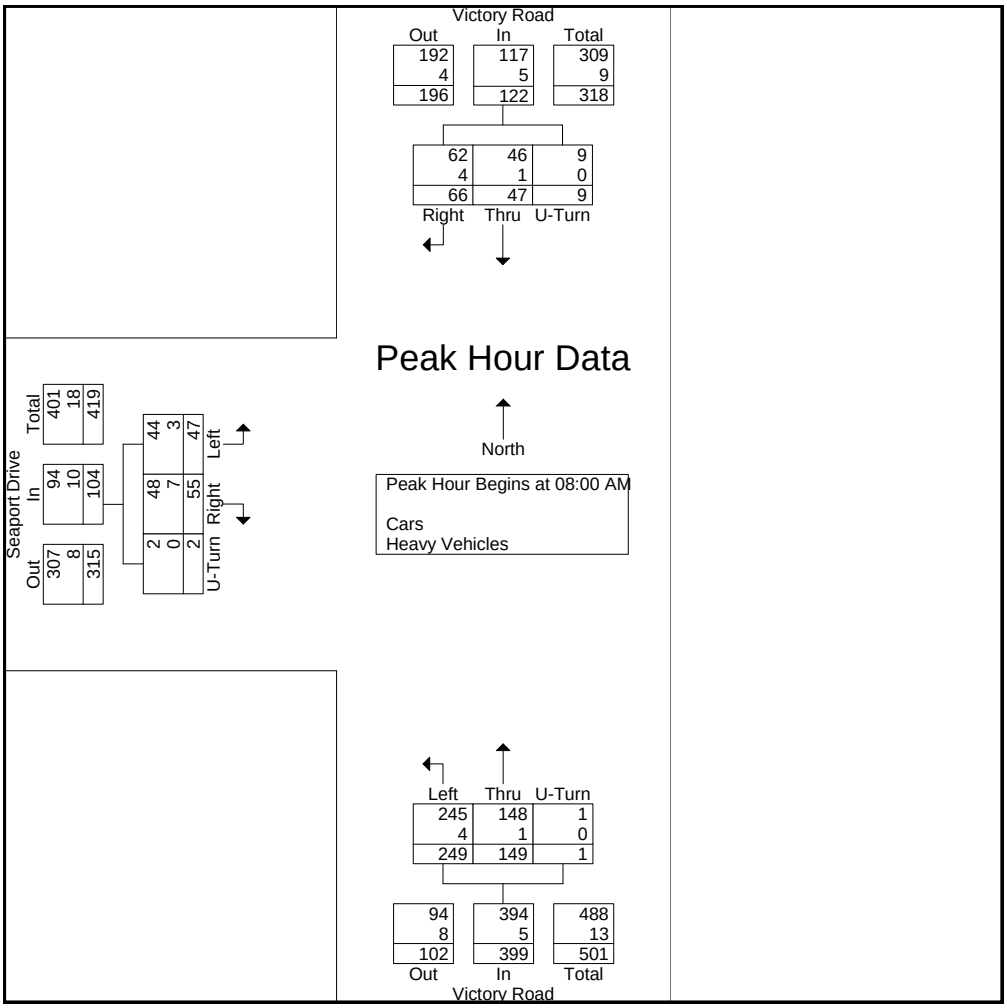
	Victory Road From North				Victory Road From South				Seaport Drive From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	14	8	3	25	33	**74**	0	107	12	12	**1**	**25**	**157**
08:15 AM	**24**	7	0	31	27	70	**1**	98	**18**	9	0	27	156
08:30 AM	14	**21**		**35**	**58**	55	0	**113**	15	**19**		**35**	**183**
08:45 AM	14	11	**6**										
Total Volume	**66**	**47**	**9**	**122**	**149**	**249**	**1**	**399**	**55**	**47**	**2**	**104**	**625**
% App. Total	**54.1**	**38.5**	**7.4**		**37.3**	**62.4**	**0.3**		**52.9**	**45.2**	**1.9**		
PHF	**.688**	**.560**	**.375**	**.871**	**.642**	**.841**	**.250**	**.883**	**.764**	**.618**	**.500**	**.743**	**.854**
Cars	**62**	**46**	**9**	**117**	**148**	**245**	**1**	**394**	**48**	**44**	**2**	**94**	**605**
% Cars	**93.9**	**97.9**	**100**	**95.9**	**99.3**	**98.4**	**100**	**98.7**	**87.3**	**93.6**	**100**	**90.4**	**96.8**
Heavy Vehicles	**4**	**1**	**0**	**5**	**1**	**4**	**0**	**5**	**7**	**3**	**0**	**10**	**20**
% Heavy Vehicles	6.1	2.1	0	4.1	0.7	1.6	0	1.3	12.7	6.4	0	9.6	3.2



N/S: Victory Road
W: Seaport Drive
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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File Name : 123014 AA
Site Code : 2011140
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Groups Printed- Cars - Heavy Vehicles

	Victory Road From North			Victory Road From South			Seaport Drive From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
04:00 PM	26	41	0	29	20	0	22	12	0	150
04:15 PM	10	42	0	38	9	1	22	14	1	137
04:30 PM	12	31	2	20	11	0	22	18	1	117
04:45 PM	22	31	0	32	13	0	17	25	2	142
Total	70	145	2	119	53	1	83	69	4	546
05:00 PM	27	61	2	28	10	0	21	21	0	170
05:15 PM	21	53	1	28	11	0	19	21	0	154
05:30 PM	14	37	0	24	13	0	21	21	1	131
05:45 PM	16	29	1	31	8	0	14	27	0	126
Total	78	180	4	111	42	0	75	90	1	581
Grand Total	148	325	6	230	95	1	158	159	5	1127
Apprch %	30.9	67.8	1.3	70.6	29.1	0.3	49.1	49.4	1.6	
Total %	13.1	28.8	0.5	20.4	8.4	0.1	14	14.1	0.4	
Cars	136	322	6	229	92	1	148	153	5	1092
% Cars	91.9	99.1	100	99.6	96.8	100	93.7	96.2	100	96.9
Heavy Vehicles	12	3	0	1	3	0	10	6	0	35
% Heavy Vehicles	8.1	0.9	0	0.4	3.2	0	6.3	3.8	0	3.1

	Victory Road From North				Victory Road From South				Seaport Drive From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	22	31	0	53	**32**	**13**	0	**45**	17	**25**	**2**	**44**	142
05:00 PM	**27**	**61**	**2**	**90**	28	10	0	38	**21**	21	0	42	**170**
05:15 PM	21	53	1	75	28	11	0	39	19	21	0	40	154
05:30 PM	14	37	0	51	24	13	0	37	21	21	1	43	131
Total Volume	84	182	3	269	112	47	0	159	78	88	3	169	597
% App. Total	31.2	67.7	1.1		70.4	29.6	0		46.2	52.1	1.8		
PHF	.778	.746	.375	.747	.875	.904	.000	.883	.929	.880	.375	.960	.878
Cars	77	181	3	261	112	45	0	157	73	86	3	162	580
% Cars	91.7	99.5	100	97.0	100	95.7	0	98.7	93.6	97.7	100	95.9	97.2
Heavy Vehicles	7	1	0	8	0	2	0	2	5	2	0	7	17
% Heavy Vehicles	8.3	0.5	0	3.0	0	4.3	0	1.3	6.4	2.3	0	4.1	2.8

N/S: Victory Road
W: Seaport Drive
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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File Name : 123014 AA
Site Code : 2011140
Start Date : 8/14/2012
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Groups Printed- Cars

	Victory Road From North			Victory Road From South			Seaport Drive From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
04:00 PM	24	41	0	29	20	0	21	11	0	146
04:15 PM	9	41	0	38	9	1	20	14	1	133
04:30 PM	11	30	2	19	11	0	21	17	1	112
04:45 PM	20	30	0	32	13	0	16	25	2	138
Total	64	142	2	118	53	1	78	67	4	529
05:00 PM	25	61	2	28	10	0	18	20	0	164
05:15 PM	19	53	1	28	10	0	19	21	0	151
05:30 PM	13	37	0	24	12	0	20	20	1	127
05:45 PM	15	29	1	31	7	0	13	25	0	121
Total	72	180	4	111	39	0	70	86	1	563
Grand Total	136	322	6	229	92	1	148	153	5	1092
Apprch %	29.3	69.4	1.3	71.1	28.6	0.3	48.4	50	1.6	
Total %	12.5	29.5	0.5	21	8.4	0.1	13.6	14	0.5	

	Victory Road From North				Victory Road From South				Seaport Drive From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	20	30	0	50	**32**	**13**	0	**45**	16	**25**	**2**	**43**	138
05:00 PM	**25**	**61**	**2**	**88**	28	10	0	38	18	20	0	38	**164**
05:15 PM	19	53	1	73	28	10	0	38	19	21	0	40	151
05:30 PM	13	37	0	50	24	12	0	36	**20**	20	1	41	127
Total Volume	77	181	3	261	112	45	0	157	73	86	3	162	580
% App. Total	29.5	69.3	1.1		71.3	28.7	0		45.1	53.1	1.9		
PHF	.770	.742	.375	.741	.875	.865	.000	.872	.913	.860	.375	.942	.884

N/S: Victory Road
W: Seaport Drive
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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File Name : 123014 AA
Site Code : 2011140
Start Date : 8/14/2012
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Groups Printed- Heavy Vehicles

	Victory Road From North			Victory Road From South			Seaport Drive From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
04:00 PM	2	0	0	0	0	0	1	1	0	4
04:15 PM	1	1	0	0	0	0	2	0	0	4
04:30 PM	1	1	0	1	0	0	1	1	0	5
04:45 PM	2	1	0	0	0	0	1	0	0	4
Total	6	3	0	1	0	0	5	2	0	17
05:00 PM	2	0	0	0	0	0	3	1	0	6
05:15 PM	2	0	0	0	1	0	0	0	0	3
05:30 PM	1	0	0	0	1	0	1	1	0	4
05:45 PM	1	0	0	0	1	0	1	2	0	5
Total	6	0	0	0	3	0	5	4	0	18
Grand Total	12	3	0	1	3	0	10	6	0	35
Apprch %	80	20	0	25	75	0	62.5	37.5	0	
Total %	34.3	8.6	0	2.9	8.6	0	28.6	17.1	0	

	Victory Road From North				Victory Road From South				Seaport Drive From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	1	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**4**
04:30 PM	**1**	**1**	**0**	**2**	**1**	0	0	**1**	1	**1**	**0**	**2**	**5**
04:45 PM	**2**	1	0	**3**	0	0	0	0	1	0	0	1	4
05:00 PM	2	0	0	2	0	0	0	0	**3**	1	0	**4**	**6**
Total Volume	6	3	0	9	1	0	0	1	7	2	0	9	19
% App. Total	66.7	33.3	0		100	0	0		77.8	22.2	0		
PHF	.750	.750	.000	.750	.250	.000	.000	.250	.583	.500	.000	.563	.792

N/S: Victory Road
W: Seaport Drive
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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File Name : 123014 AA
Site Code : 2011140
Start Date : 8/14/2012
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Groups Printed- Peds and Bicycles

	Victory Road From North			Victory Road From South			Seaport Drive From West			
Start Time	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	Int. Total
04:00 PM	0	0	0	0	0	0	2	0	0	2
04:15 PM	0	0	0	0	0	1	1	0	0	2
04:30 PM	2	0	0	0	0	0	0	1	1	4
04:45 PM	0	0	0	0	0	0	0	0	1	1
Total	2	0	0	0	0	1	3	1	2	9
05:00 PM	0	0	3	0	0	0	0	1	3	7
05:15 PM	0	0	0	0	0	0	0	0	3	3
05:30 PM	0	0	0	0	0	0	0	0	2	2
05:45 PM	0	0	0	1	0	0	0	0	6	7
Total	0	0	3	1	0	0	0	1	14	19
Grand Total	2	0	3	1	0	1	3	2	16	28
Apprch %	40	0	60	50	0	50	14.3	9.5	76.2	
Total %	7.1	0	10.7	3.6	0	3.6	10.7	7.1	57.1	

	Victory Road From North				Victory Road From South				Seaport Drive From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	0	**3**	**3**	0	0	0	0	0	**1**	**3**	**4**	**7**
05:15 PM	0	0	0	0	0	0	0	0	0	0	3	3	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	2	2	2
05:45 PM	0	0	0	0	**1**	0	0	**1**	0	0	**6**	**6**	7
Total Volume	0	0	3	3	1	0	0	1	0	1	14	15	19
% App. Total	0	0	100		100	0	0		0	6.7	93.3		
PHF	.000	.000	.250	.250	.250	.000	.000	.250	.000	.250	.583	.625	.679

N/S: Victory Road
W: Seaport Drive
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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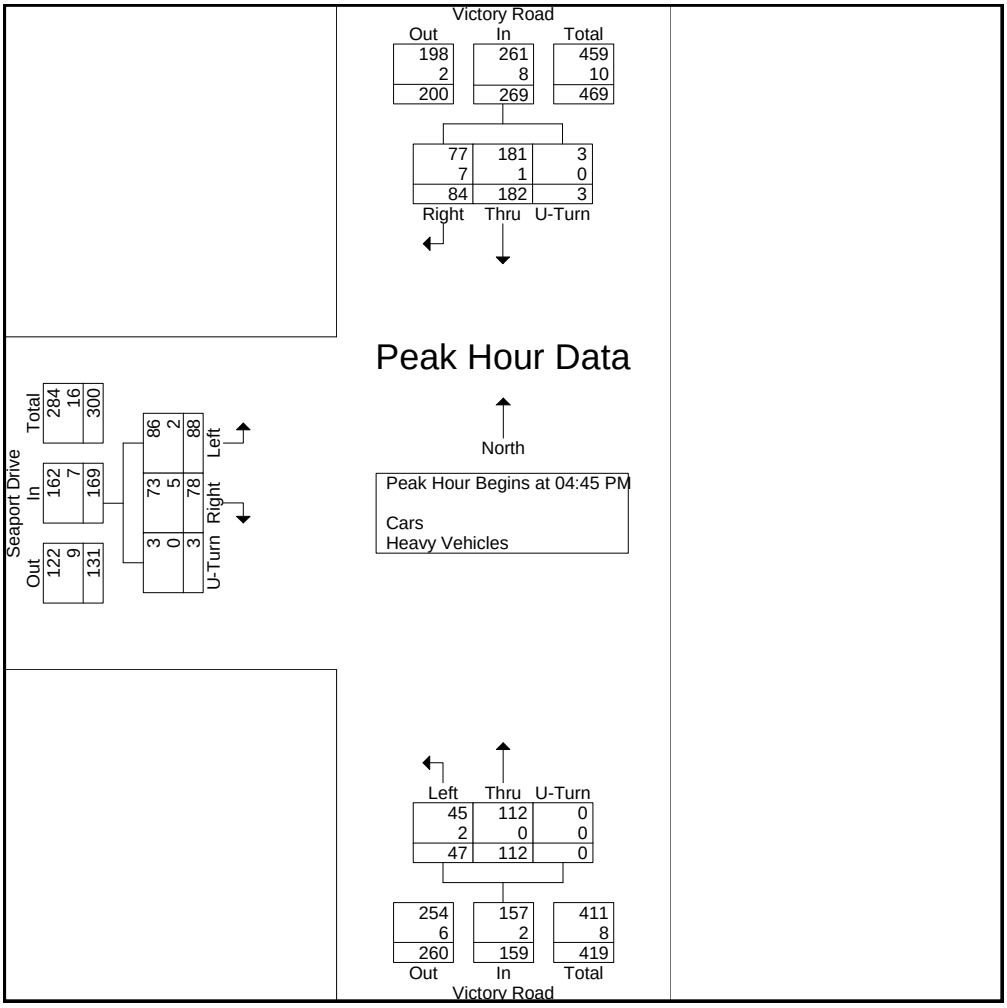
File Name : 123014 AA
Site Code : 2011140
Start Date : 8/14/2012
Page No : 1

	Victory Road From North				Victory Road From South				Seaport Drive From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	22	31	0	53	**32**	**13**	0	**45**	17	**25**	**2**	**44**	142
05:00 PM	**27**	**61**	**2**	**90**	28	10	0	38	**21**	21	0	42	**170**
05:15 PM	21	53	1	75	28	11	0	39	19	21	0	40	154
05:30 PM	14	37	0	51	24	13	0	37	21	21	1	43	131
Total Volume	84	182	3	269	112	47	0	159	78	88	3	169	597
% App. Total	31.2	67.7	1.1		70.4	29.6	0		46.2	52.1	1.8		
PHF	.778	.746	.375	.747	.875	.904	.000	.883	.929	.880	.375	.960	.878
Cars	77	181	3	261	112	45	0	157	73	86	3	162	580
% Cars	91.7	99.5	100	97.0	100	95.7	0	98.7	93.6	97.7	100	95.9	97.2
Heavy Vehicles	7	1	0	8	0	2	0	2	5	2	0	7	17
% Heavy Vehicles	8.3	0.5	0	3.0	0	4.3	0	1.3	6.4	2.3	0	4.1	2.8



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Traffic Counts with Precision

Client:	Engineer:	Site Code:	Date:	PDI Job Number:	City, State:
Howard/Stein-Hudson	M. Tremblay	TBA	Tuesday 1/8/2013	133174	Quincy, MA

S: Victory Road
E/W: Victory Road
City, State: Quincy, MA
Client: Howard/Stein-Hudson/ M. Tremblay

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File Name : 133174 A
Site Code : TBA
Start Date : 1/8/2013
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Victory Road From East			Victory Road From South			Victory Road From West			
Start Time	Thru	Left	U-Turns	Right	Left	U-Turns	Right	Thru	U-Turns	Int. Total
07:00 AM	0	1	0	2	0	6	0	1	0	10
07:15 AM	1	2	0	3	6	3	1	1	0	17
07:30 AM	1	2	0	3	1	4	1	0	1	13
07:45 AM	0	2	0	1	3	1	0	0	0	7
Total	2	7	0	9	10	14	2	2	1	47
08:00 AM	1	3	0	4	6	1	4	1	0	20
08:15 AM	1	3	0	1	8	5	2	1	0	21
08:30 AM	1	0	0	1	10	4	10	2	0	28
08:45 AM	0	0	0	1	6	5	1	2	0	15
Total	3	6	0	7	30	15	17	6	0	84
Grand Total	5	13	0	16	40	29	19	8	1	131
Apprch %	27.8	72.2	0	18.8	47.1	34.1	67.9	28.6	3.6	
Total %	3.8	9.9	0	12.2	30.5	22.1	14.5	6.1	0.8	
Cars	5	12	0	14	38	22	19	7	1	118
% Cars	100	92.3	0	87.5	95	75.9	100	87.5	100	90.1
Heavy Vehicles	0	1	0	2	2	7	0	1	0	13
% Heavy Vehicles	0	7.7	0	12.5	5	24.1	0	12.5	0	9.9

	Victory Road From East				Victory Road From South				Victory Road From West				
Start Time	Thru	Left	U-Turns	App. Total	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	**1**	**3**	0	**4**	**4**	6	1	11	4	1	0	5	20
08:15 AM	1	3	0	4	1	8	**5**	14	2	1	0	3	21
08:30 AM	1	0	0	1	1	**10**	4	**15**	**10**	**2**	0	**12**	**28**
08:45 AM	0	0	0	0	1	6	5	12	1	2	0	3	15
Total Volume	3	6	0	9	7	30	15	52	17	6	0	23	84
% App. Total	33.3	66.7	0		13.5	57.7	28.8		73.9	26.1	0		
PHF	.750	.500	.000	.563	.438	.750	.750	.867	.425	.750	.000	.479	.750
Cars	3	6	0	9	7	28	12	47	17	5	0	22	78
% Cars	100	100	0	100	100	93.3	80.0	90.4	100	83.3	0	95.7	92.9
Heavy Vehicles	0	0	0	0	0	2	3	5	0	1	0	1	6
% Heavy Vehicles	0	0	0	0	0	6.7	20.0	9.6	0	16.7	0	4.3	7.1

S: Victory Road
E/W: Victory Road
City, State: Quincy, MA
Client: Howard/Stein-Hudson/ M. Tremblay

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File Name : 133174 A
Site Code : TBA
Start Date : 1/8/2013
Page No : 1

Groups Printed- Cars

	Victory Road From East			Victory Road From South			Victory Road From West			
Start Time	Thru	Left	U-Turns	Right	Left	U-Turns	Right	Thru	U-Turns	Int. Total
07:00 AM	0	1	0	1	0	4	0	1	0	7
07:15 AM	1	1	0	2	6	2	1	1	0	14
07:30 AM	1	2	0	3	1	3	1	0	1	12
07:45 AM	0	2	0	1	3	1	0	0	0	7
Total	2	6	0	7	10	10	2	2	1	40
08:00 AM	1	3	0	4	5	0	4	1	0	18
08:15 AM	1	3	0	1	8	4	2	1	0	20
08:30 AM	1	0	0	1	9	4	10	1	0	26
08:45 AM	0	0	0	1	6	4	1	2	0	14
Total	3	6	0	7	28	12	17	5	0	78
Grand Total	5	12	0	14	38	22	19	7	1	118
Apprch %	29.4	70.6	0	18.9	51.4	29.7	70.4	25.9	3.7	
Total %	4.2	10.2	0	11.9	32.2	18.6	16.1	5.9	0.8	

	Victory Road From East				Victory Road From South				Victory Road From West				
Start Time	Thru	Left	U-Turns	App. Total	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	**1**	**3**	0	**4**	**4**	5	0	9	4	1	0	5	18
08:15 AM	1	3	0	4	1	8	**4**	13	2	1	0	3	20
08:30 AM	1	0	0	1	1	**9**	4	**14**	**10**	1	0	**11**	**26**
08:45 AM	0	0	0	0	1	6	4	11	1	**2**	0	3	14
Total Volume	3	6	0	9	7	28	12	47	17	5	0	22	78
% App. Total	33.3	66.7	0		14.9	59.6	25.5		77.3	22.7	0		
PHF	.750	.500	.000	.563	.438	.778	.750	.839	.425	.625	.000	.500	.750

S: Victory Road
E/W: Victory Road
City, State: Quincy, MA
Client: Howard/Stein-Hudson/ M. Tremblay

PRECISION DATA INDUSTRIES, LLC
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File Name : 133174 A
Site Code : TBA
Start Date : 1/8/2013
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Groups Printed- Heavy Vehicles

	Victory Road From East			Victory Road From South			Victory Road From West			
Start Time	Thru	Left	U-Turns	Right	Left	U-Turns	Right	Thru	U-Turns	Int. Total
07:00 AM	0	0	0	1	0	2	0	0	0	3
07:15 AM	0	1	0	1	0	1	0	0	0	3
07:30 AM	0	0	0	0	0	1	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	2	0	4	0	0	0	7
08:00 AM	0	0	0	0	1	1	0	0	0	2
08:15 AM	0	0	0	0	0	1	0	0	0	1
08:30 AM	0	0	0	0	1	0	0	1	0	2
08:45 AM	0	0	0	0	0	1	0	0	0	1
Total	0	0	0	0	2	3	0	1	0	6
Grand Total	0	1	0	2	2	7	0	1	0	13
Apprch %	0	100	0	18.2	18.2	63.6	0	100	0	
Total %	0	7.7	0	15.4	15.4	53.8	0	7.7	0	

	Victory Road From East				Victory Road From South				Victory Road From West				
Start Time	Thru	Left	U-Turns	App. Total	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	0	0	0	**1**	0	**2**	**3**	0	0	0	0	**3**
07:15 AM	0	**1**	0	**1**	1	0	1	2	0	0	0	0	3
07:30 AM	0	0	0	0	0	0	1	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	2	0	4	6	0	0	0	0	7
% App. Total	0	100	0		33.3	0	66.7		0	0	0		
PHF	.000	.250	.000	.250	.500	.000	.500	.500	.000	.000	.000	.000	.583

S: Victory Road
E/W: Victory Road
City, State: Quincy, MA
Client: Howard/Stein-Hudson/ M. Tremblay

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File Name : 133174 A
Site Code : TBA
Start Date : 1/8/2013
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Groups Printed- Peds and Bicycles

	Victory Road From East			Victory Road From South			Victory Road From West			
Start Time	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	1	0	0	1	2
07:45 AM	0	0	1	0	0	1	0	0	2	4
Total	0	0	1	0	0	2	0	0	3	6
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	2	0	0	0	0	0	5	7
08:30 AM	0	0	0	0	0	1	0	0	2	3
08:45 AM	0	0	1	0	0	1	0	0	7	9
Total	0	0	3	0	0	2	0	0	14	19
Grand Total	0	0	4	0	0	4	0	0	17	25
Apprch %	0	0	100	0	0	100	0	0	100	
Total %	0	0	16	0	0	16	0	0	68	

	Victory Road From East				Victory Road From South				Victory Road From West				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	**2**	**2**	0	0	0	0	0	0	5	5	7
08:30 AM	0	0	0	0	0	0	**1**	**1**	0	0	2	2	3
08:45 AM	0	0	1	1	0	0	1	1	0	0	**7**	**7**	**9**
Total Volume	0	0	3	3	0	0	2	2	0	0	14	14	19
% App. Total	0	0	100		0	0	100		0	0	100		
PHF	.000	.000	.375	.375	.000	.000	.500	.500	.000	.000	.500	.500	.528

S: Victory Road
E/W: Victory Road
City, State: Quincy, MA
Client: Howard/Stein-Hudson/ M. Tremblay

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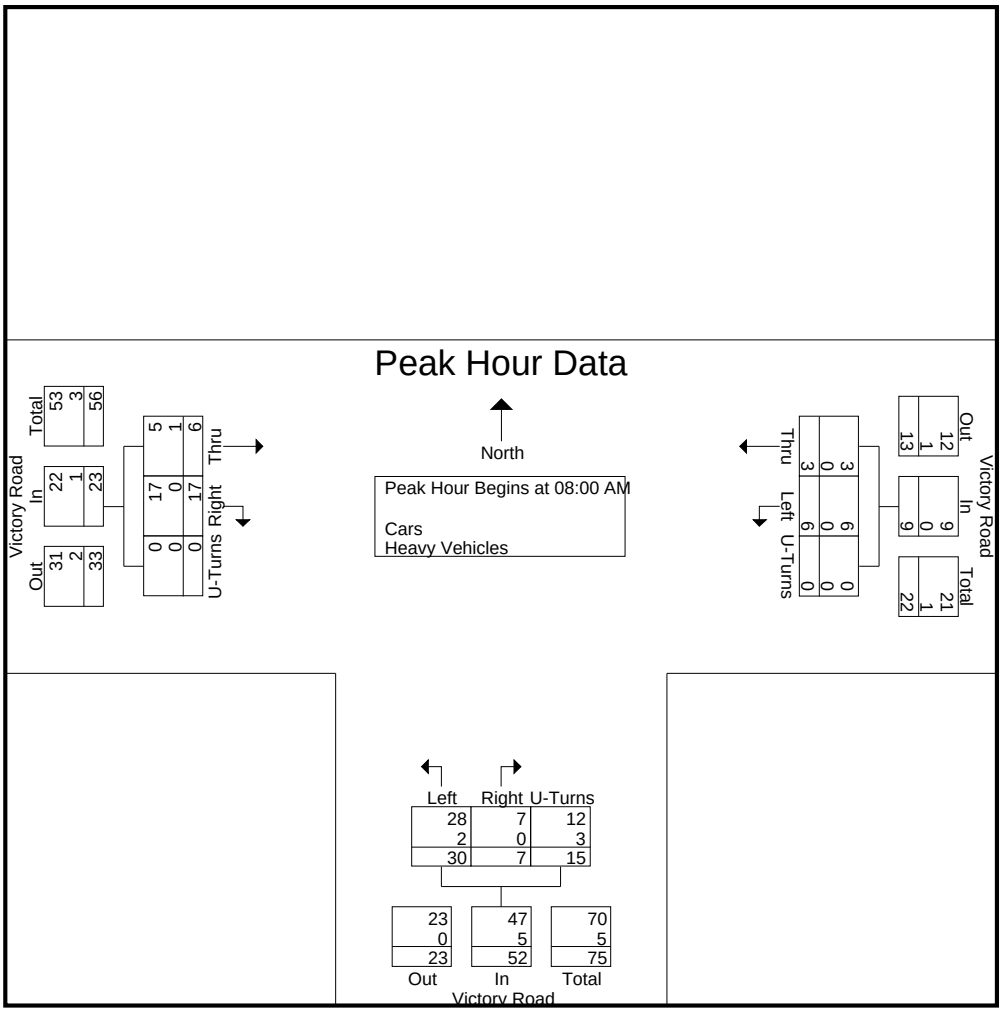
	Victory Road From East				Victory Road From South				Victory Road From West				
Start Time	Thru	Left	U-Turns	App. Total	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	**1**	**3**	0	**4**	**4**	6	1	11	4	1	0	5	20
08:15 AM	1	3	0	4	1	8	**5**	14	2	1	0	3	21
08:30 AM	1	0	0	1	1	**10**	4	**15**	**10**	**2**	0	**12**	**28**
08:45 AM	0	0	0	0	1	6	5	12	1	2	0	3	15
Total Volume	3	6	0	9	7	30	15	52	17	6	0	23	84
% App. Total	33.3	66.7	0		13.5	57.7	28.8		73.9	26.1	0		
PHF	.750	.500	.000	.563	.438	.750	.750	.867	.425	.750	.000	.479	.750
Cars	3	6	0	9	7	28	12	47	17	5	0	22	78
% Cars	100	100	0	100	100	93.3	80.0	90.4	100	83.3	0	95.7	92.9
Heavy Vehicles	0	0	0	0	0	2	3	5	0	1	0	1	6
% Heavy Vehicles	0	0	0	0	0	6.7	20.0	9.6	0	16.7	0	4.3	7.1



S: Victory Road
E/W: Victory Road
City, State: Quincy, MA
Client: Howard/Stein-Hudson/ M. Tremblay

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File Name : 133174 AA
Site Code : TBA
Start Date : 1/8/2013
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Groups Printed- Cars - Heavy Vehicles

	Victory Road From East			Victory Road From South			Victory Road From West			
Start Time	Thru	Left	U-Turns	Right	Left	U-Turns	Right	Thru	U-Turns	Int. Total
04:00 PM	1	10	0	2	8	6	9	2	0	38
04:15 PM	2	2	0	6	6	5	8	1	0	30
04:30 PM	2	6	0	3	4	1	11	0	0	27
04:45 PM	2	1	0	5	2	1	12	0	0	23
Total	7	19	0	16	20	13	40	3	0	118
05:00 PM	0	3	0	1	3	5	10	0	0	22
05:15 PM	3	1	0	8	5	5	7	1	0	30
05:30 PM	3	4	0	13	8	2	6	1	0	37
05:45 PM	3	1	0	8	5	3	13	2	0	35
Total	9	9	0	30	21	15	36	4	0	124
Grand Total	16	28	0	46	41	28	76	7	0	242
Apprch %	36.4	63.6	0	40	35.7	24.3	91.6	8.4	0	
Total %	6.6	11.6	0	19	16.9	11.6	31.4	2.9	0	
Cars	16	28	0	46	40	22	76	7	0	235
% Cars	100	100	0	100	97.6	78.6	100	100	0	97.1
Heavy Vehicles	0	0	0	0	1	6	0	0	0	7
% Heavy Vehicles	0	0	0	0	2.4	21.4	0	0	0	2.9

	Victory Road From East				Victory Road From South				Victory Road From West				
Start Time	Thru	Left	U-Turns	App. Total	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	3	0	3	1	3	**5**	9	10	0	0	10	22
05:15 PM	**3**	1	0	4	8	5	5	18	7	1	0	8	30
05:30 PM	3	**4**	0	**7**	**13**	**8**	2	**23**	6	1	0	7	**37**
05:45 PM	3	1	0	4	8	5	3	16	**13**	**2**	0	**15**	35
Total Volume	9	9	0	18	30	21	15	66	36	4	0	40	124
% App. Total	50	50	0		45.5	31.8	22.7		90	10	0		
PHF	.750	.563	.000	.643	.577	.656	.750	.717	.692	.500	.000	.667	.838
Cars	9	9	0	18	30	21	12	63	36	4	0	40	121
% Cars	100	100	0	100	100	100	80.0	95.5	100	100	0	100	97.6
Heavy Vehicles	0	0	0	0	0	0	3	3	0	0	0	0	3
% Heavy Vehicles	0	0	0	0	0	0	20.0	4.5	0	0	0	0	2.4

S: Victory Road
E/W: Victory Road
City, State: Quincy, MA
Client: Howard/Stein-Hudson/ M. Tremblay

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File Name : 133174 AA
Site Code : TBA
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Groups Printed- Cars

	Victory Road From East			Victory Road From South			Victory Road From West			
Start Time	Thru	Left	U-Turns	Right	Left	U-Turns	Right	Thru	U-Turns	Int. Total
04:00 PM	1	10	0	2	7	5	9	2	0	36
04:15 PM	2	2	0	6	6	4	8	1	0	29
04:30 PM	2	6	0	3	4	1	11	0	0	27
04:45 PM	2	1	0	5	2	0	12	0	0	22
Total	7	19	0	16	19	10	40	3	0	114
05:00 PM	0	3	0	1	3	4	10	0	0	21
05:15 PM	3	1	0	8	5	4	7	1	0	29
05:30 PM	3	4	0	13	8	2	6	1	0	37
05:45 PM	3	1	0	8	5	2	13	2	0	34
Total	9	9	0	30	21	12	36	4	0	121
Grand Total	16	28	0	46	40	22	76	7	0	235
Apprch %	36.4	63.6	0	42.6	37	20.4	91.6	8.4	0	
Total %	6.8	11.9	0	19.6	17	9.4	32.3	3	0	

	Victory Road From East				Victory Road From South				Victory Road From West				
Start Time	Thru	Left	U-Turns	App. Total	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	3	0	3	1	3	**4**	8	10	0	0	10	21
05:15 PM	**3**	1	0	4	8	5	4	17	7	1	0	8	29
05:30 PM	3	**4**	0	**7**	**13**	**8**	2	**23**	6	1	0	7	**37**
05:45 PM	3	1	0	4	8	5	2	15	**13**	**2**	0	**15**	34
Total Volume	9	9	0	18	30	21	12	63	36	4	0	40	121
% App. Total	50	50	0		47.6	33.3	19		90	10	0		
PHF	.750	.563	.000	.643	.577	.656	.750	.685	.692	.500	.000	.667	.818

S: Victory Road
E/W: Victory Road
City, State: Quincy, MA
Client: Howard/Stein-Hudson/ M. Tremblay

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File Name : 133174 AA
Site Code : TBA
Start Date : 1/8/2013
Page No : 1

Groups Printed- Heavy Vehicles

	Victory Road From East			Victory Road From South			Victory Road From West			
Start Time	Thru	Left	U-Turns	Right	Left	U-Turns	Right	Thru	U-Turns	Int. Total
04:00 PM	0	0	0	0	1	1	0	0	0	2
04:15 PM	0	0	0	0	0	1	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	1	0	0	0	1
Total	0	0	0	0	1	3	0	0	0	4
05:00 PM	0	0	0	0	0	1	0	0	0	1
05:15 PM	0	0	0	0	0	1	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	1	0	0	0	1
Total	0	0	0	0	0	3	0	0	0	3
Grand Total	0	0	0	0	1	6	0	0	0	7
Apprch %	0	0	0	0	14.3	85.7	0	0	0	
Total %	0	0	0	0	14.3	85.7	0	0	0	

	Victory Road From East				Victory Road From South				Victory Road From West				
Start Time	Thru	Left	U-Turns	App. Total	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	0	0	0	0	0	**1**	**1**	**2**	0	0	0	0	**2**
04:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	1	1	0	0	0	0	1
Total Volume	0	0	0	0	0	1	3	4	0	0	0	0	4
% App. Total	0	0	0		0	25	75		0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.750	.500	.000	.000	.000	.000	.500

S: Victory Road
E/W: Victory Road
City, State: Quincy, MA
Client: Howard/Stein-Hudson/ M. Tremblay

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File Name : 133174 AA
Site Code : TBA
Start Date : 1/8/2013
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Groups Printed- Peds and Bicycles

	Victory Road From East			Victory Road From South			Victory Road From West			
Start Time	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds	Int. Total
04:00 PM	0	0	2	0	0	0	0	0	6	8
04:15 PM	0	0	4	0	0	0	0	0	11	15
04:30 PM	0	0	4	0	0	1	0	0	4	9
04:45 PM	0	0	1	0	0	0	0	0	2	3
Total	0	0	11	0	0	1	0	0	23	35
05:00 PM	0	0	0	0	0	0	0	0	3	3
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	3	0	0	0	0	0	3	6
05:45 PM	0	0	2	0	0	0	0	0	5	7
Total	0	0	5	0	0	0	0	0	11	16
Grand Total	0	0	16	0	0	1	0	0	34	51
Apprch %	0	0	100	0	0	100	0	0	100	
Total %	0	0	31.4	0	0	2	0	0	66.7	

	Victory Road From East				Victory Road From South				Victory Road From West				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	0	0	2	2	0	0	0	0	0	0	6	6	8
04:15 PM	0	0	**4**	**4**	0	0	0	0	0	0	**11**	**11**	**15**
04:30 PM	0	0	4	4	0	0	**1**	**1**	0	0	4	4	9
04:45 PM	0	0	1	1	0	0	0	0	0	0	2	2	3
Total Volume	0	0	11	11	0	0	1	1	0	0	23	23	35
% App. Total	0	0	100		0	0	100		0	0	100		
PHF	.000	.000	.688	.688	.000	.000	.250	.250	.000	.000	.523	.523	.583

S: Victory Road
E/W: Victory Road
City, State: Quincy, MA
Client: Howard/Stein-Hudson/ M. Tremblay

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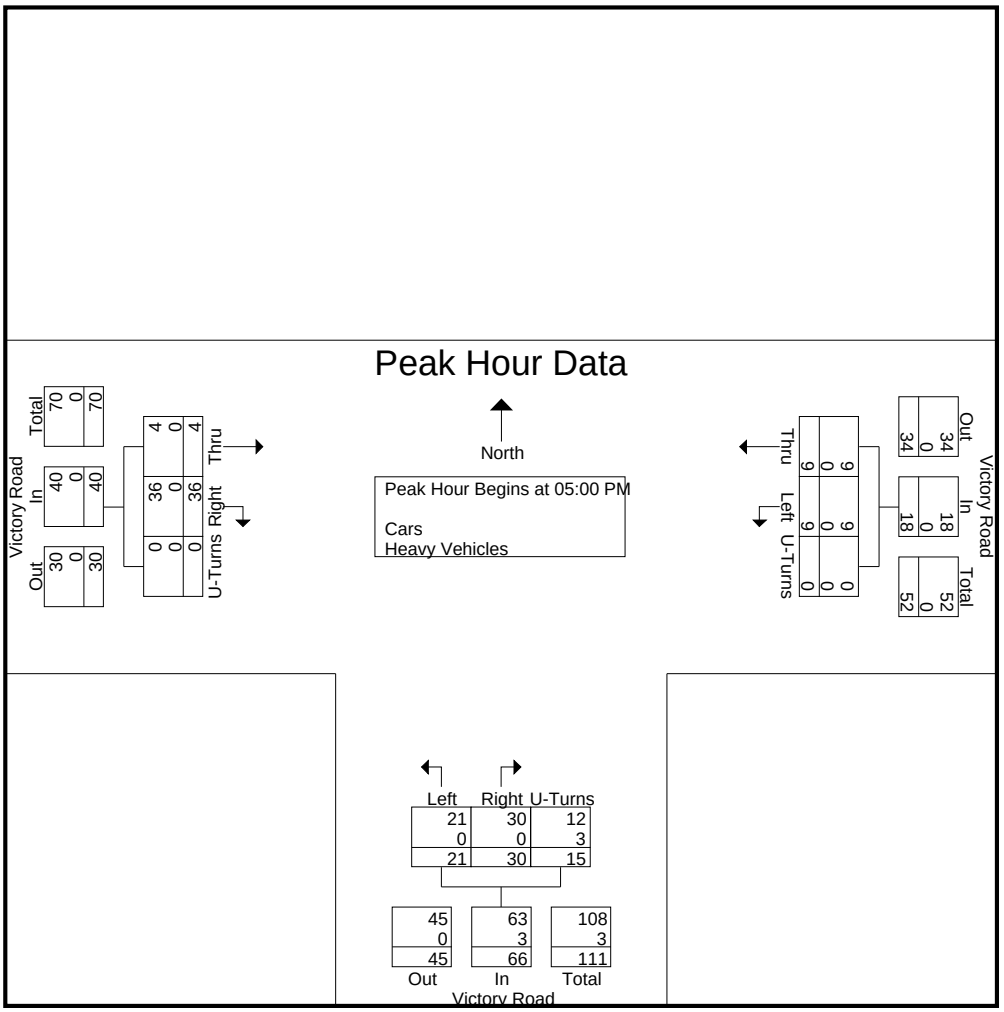
	Victory Road From East				Victory Road From South				Victory Road From West				
Start Time	Thru	Left	U-Turns	App. Total	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	3	0	3	1	3	**5**	9	10	0	0	10	22
05:15 PM	**3**	1	0	4	8	5	5	18	7	1	0	8	30
05:30 PM	3	**4**	0	**7**	**13**	**8**	2	**23**	6	1	0	7	**37**
05:45 PM	3	1	0	4	8	5	3	16	**13**	**2**	0	**15**	35
Total Volume	9	9	0	18	30	21	15	66	36	4	0	40	124
% App. Total	50	50	0		45.5	31.8	22.7		90	10	0		
PHF	.750	.563	.000	.643	.577	.656	.750	.717	.692	.500	.000	.667	.838
Cars	9	9	0	18	30	21	12	63	36	4	0	40	121
% Cars	100	100	0	100	100	100	80.0	95.5	100	100	0	100	97.6
Heavy Vehicles	0	0	0	0	0	0	3	3	0	0	0	0	3
% Heavy Vehicles	0	0	0	0	0	0	20.0	4.5	0	0	0	0	2.4



N: Marina Drive
E/W: Victorry Road
City, State: Quincy, MA
Client: Howard/Stein-Hudson/ M. Tremblay

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File Name : 133174 B
Site Code : TBA
Start Date : 1/8/2013
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Groups Printed- Cars - Heavy Vehicles

	Marina Drive From North			Victory Drive From East			Victory Drive From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
07:00 AM	7	15	1	7	37	0	22	2	0	91
07:15 AM	5	11	0	6	55	0	13	1	0	91
07:30 AM	5	19	0	5	34	0	20	1	0	84
07:45 AM	5	17	0	4	52	0	25	0	0	103
Total	22	62	1	22	178	0	80	4	0	369
08:00 AM	3	16	0	4	56	0	24	2	0	105
08:15 AM	4	10	0	10	73	0	27	1	0	125
08:30 AM	4	18	0	8	71	0	31	0	0	132
08:45 AM	2	5	0	5	59	0	23	1	1	96
Total	13	49	0	27	259	0	105	4	1	458
Grand Total	35	111	1	49	437	0	185	8	1	827
Apprch %	23.8	75.5	0.7	10.1	89.9	0	95.4	4.1	0.5	
Total %	4.2	13.4	0.1	5.9	52.8	0	22.4	1	0.1	
Cars	35	111	1	48	431	0	176	2	1	805
% Cars	100	100	100	98	98.6	0	95.1	25	100	97.3
Heavy Vehicles	0	0	0	1	6	0	9	6	0	22
% Heavy Vehicles	0	0	0	2	1.4	0	4.9	75	0	2.7

	Marina Drive From North				Victory Drive From East				Victory Drive From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	**5**	17	0	**22**	4	52	0	56	25	0	0	25	103
08:00 AM	3	16	0	19	4	56	0	60	24	**2**	0	26	105
08:15 AM	4	10	0	14	**10**	**73**	0	**83**	27	1	0	28	125
08:30 AM	4	**18**	0	22	8	71	0	79	**31**	0	0	**31**	**132**
Total Volume	16	61	0	77	26	252	0	278	107	3	0	110	465
% App. Total	20.8	79.2	0		9.4	90.6	0		97.3	2.7	0		
PHF	.800	.847	.000	.875	.650	.863	.000	.837	.863	.375	.000	.887	.881
Cars	16	61	0	77	26	249	0	275	102	1	0	103	455
% Cars	100	100	0	100	100	98.8	0	98.9	95.3	33.3	0	93.6	97.8
Heavy Vehicles	0	0	0	0	0	3	0	3	5	2	0	7	10
% Heavy Vehicles	0	0	0	0	0	1.2	0	1.1	4.7	66.7	0	6.4	2.2

N: Marina Drive
E/W: Victorry Road
City, State: Quincy, MA
Client: Howard/Stein-Hudson/ M. Tremblay

PRECISION DATA INDUSTRIES, LLC
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Site Code : TBA
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Groups Printed- Cars

	Marina Drive From North			Victory Drive From East			Victory Drive From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
07:00 AM	7	15	1	7	35	0	20	1	0	86
07:15 AM	5	11	0	6	55	0	12	0	0	89
07:30 AM	5	19	0	5	34	0	20	0	0	83
07:45 AM	5	17	0	4	52	0	22	0	0	100
Total	22	62	1	22	176	0	74	1	0	358
08:00 AM	3	16	0	4	56	0	24	1	0	104
08:15 AM	4	10	0	10	73	0	27	0	0	124
08:30 AM	4	18	0	8	68	0	29	0	0	127
08:45 AM	2	5	0	4	58	0	22	0	1	92
Total	13	49	0	26	255	0	102	1	1	447
Grand Total	35	111	1	48	431	0	176	2	1	805
Apprch %	23.8	75.5	0.7	10	90	0	98.3	1.1	0.6	
Total %	4.3	13.8	0.1	6	53.5	0	21.9	0.2	0.1	

	Marina Drive From North				Victory Drive From East				Victory Drive From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	**5**	17	0	**22**	4	52	0	56	22	0	0	22	100
08:00 AM	3	16	0	19	4	56	0	60	24	**1**	0	25	104
08:15 AM	4	10	0	14	**10**	**73**	0	**83**	27	0	0	27	124
08:30 AM	4	**18**	0	22	8	68	0	76	**29**	0	0	**29**	**127**
Total Volume	16	61	0	77	26	249	0	275	102	1	0	103	455
% App. Total	20.8	79.2	0		9.5	90.5	0		99	1	0		
PHF	.800	.847	.000	.875	.650	.853	.000	.828	.879	.250	.000	.888	.896

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Groups Printed- Heavy Vehicles

	Marina Drive From North			Victory Drive From East			Victory Drive From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
07:00 AM	0	0	0	0	2	0	2	1	0	5
07:15 AM	0	0	0	0	0	0	1	1	0	2
07:30 AM	0	0	0	0	0	0	0	1	0	1
07:45 AM	0	0	0	0	0	0	3	0	0	3
Total	0	0	0	0	2	0	6	3	0	11
08:00 AM	0	0	0	0	0	0	0	1	0	1
08:15 AM	0	0	0	0	0	0	0	1	0	1
08:30 AM	0	0	0	0	3	0	2	0	0	5
08:45 AM	0	0	0	1	1	0	1	1	0	4
Total	0	0	0	1	4	0	3	3	0	11
Grand Total	0	0	0	1	6	0	9	6	0	22
Apprch %	0	0	0	14.3	85.7	0	60	40	0	
Total %	0	0	0	4.5	27.3	0	40.9	27.3	0	

	Marina Drive From North				Victory Drive From East				Victory Drive From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	0	0	0	0	**2**	0	**2**	2	**1**	0	**3**	**5**
07:15 AM	0	0	0	0	0	0	0	0	1	1	0	2	2
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	**3**	0	0	3	3
Total Volume	0	0	0	0	0	2	0	2	6	3	0	9	11
% App. Total	0	0	0		0	100	0		66.7	33.3	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.500	.750	.000	.750	.550

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Groups Printed- Peds and Bicycles

	Marina Drive From North			Victory Drive From East			Victory Drive From West			
Start Time	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	0	1	0	0	0	1
07:15 AM	0	0	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	3	0	0	0	0	0	0	3
Total	0	0	4	0	0	1	0	0	0	5
08:00 AM	0	0	1	0	0	0	0	0	0	1
08:15 AM	0	0	4	0	0	0	0	0	0	4
08:30 AM	0	0	2	0	0	0	0	0	0	2
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	7	0	0	0	0	0	0	7
Grand Total	0	0	11	0	0	1	0	0	0	12
Apprch %	0	0	100	0	0	100	0	0	0	
Total %	0	0	91.7	0	0	8.3	0	0	0	

	Marina Drive From North				Victory Drive From East				Victory Drive From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	0	0	3	3	0	0	0	0	0	0	0	0	3
08:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	**4**	**4**	0	0	0	0	0	0	0	0	**4**
08:30 AM	0	0	2	2	0	0	0	0	0	0	0	0	2
Total Volume	0	0	10	10	0	0	0	0	0	0	0	0	10
% App. Total	0	0	100		0	0	0		0	0	0		
PHF	.000	.000	.625	.625	.000	.000	.000	.000	.000	.000	.000	.000	.625

N: Marina Drive
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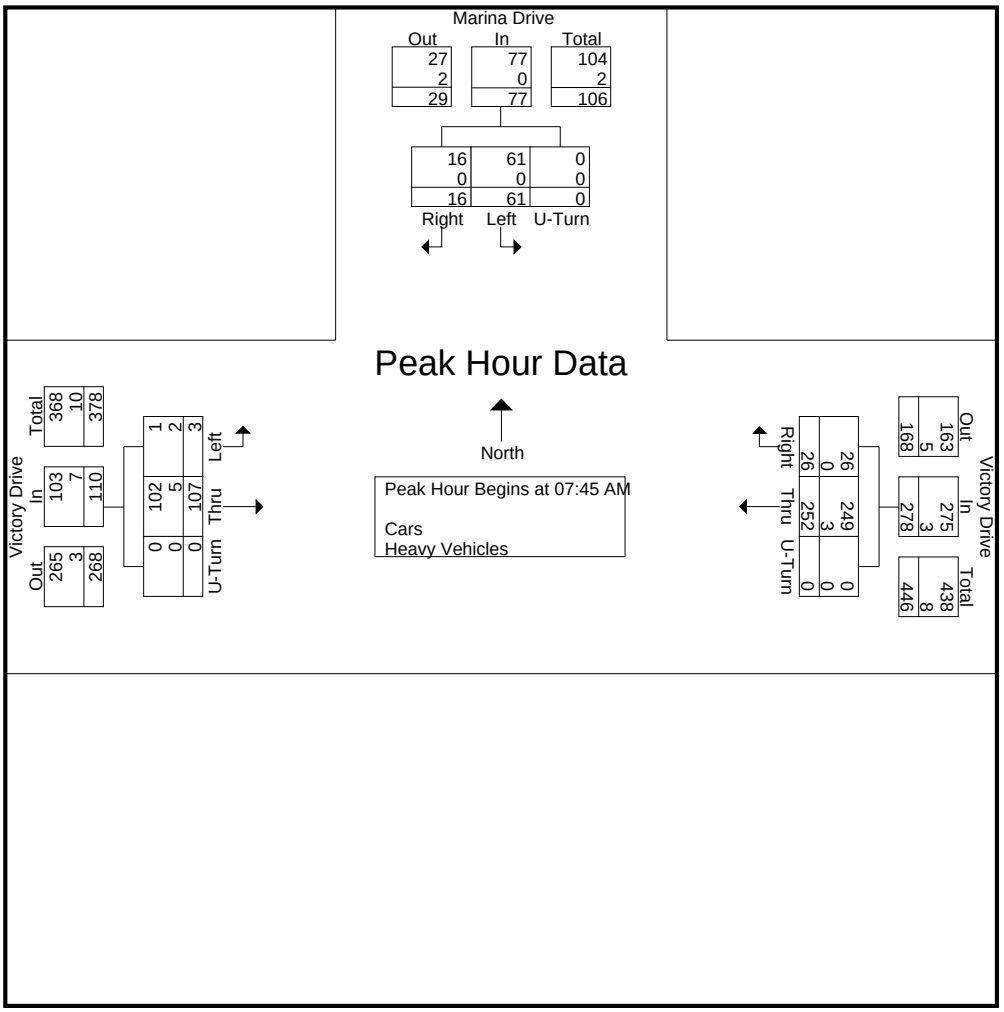
	Marina Drive From North				Victory Drive From East				Victory Drive From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	**5**	17	0	**22**	4	52	0	56	25	0	0	25	103
08:00 AM	3	16	0	19	4	56	0	60	24	**2**	0	26	105
08:15 AM	4	10	0	14	**10**	**73**	0	**83**	27	1	0	28	125
08:30 AM	4	**18**	0	22	8	71	0	79	**31**	0	0	**31**	**132**
Total Volume	16	61	0	77	26	252	0	278	107	3	0	110	465
% App. Total	20.8	79.2	0		9.4	90.6	0		97.3	2.7	0		
PHF	.800	.847	.000	.875	.650	.863	.000	.837	.863	.375	.000	.887	.881
Cars	16	61	0	77	26	249	0	275	102	1	0	103	455
% Cars	100	100	0	100	100	98.8	0	98.9	95.3	33.3	0	93.6	97.8
Heavy Vehicles	0	0	0	0	0	3	0	3	5	2	0	7	10
% Heavy Vehicles	0	0	0	0	0	1.2	0	1.1	4.7	66.7	0	6.4	2.2



N: Marina Drive
E/W: Victorry Road
City, State: Quincy, MA
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Groups Printed- Cars - Heavy Vehicles

	Marina Drive From North			Victory Drive From East			Victory Drive From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
04:00 PM	2	11	0	13	18	0	54	5	0	103
04:15 PM	2	9	0	15	20	0	31	7	0	84
04:30 PM	0	4	0	8	17	0	43	3	0	75
04:45 PM	3	8	0	5	24	0	41	7	0	88
Total	7	32	0	41	79	0	169	22	0	350
05:00 PM	2	9	0	15	24	0	79	6	0	135
05:15 PM	0	8	0	13	23	0	62	5	0	111
05:30 PM	2	6	0	15	27	0	32	6	0	88
05:45 PM	1	6	0	17	23	0	38	6	0	91
Total	5	29	0	60	97	0	211	23	0	425
Grand Total	12	61	0	101	176	0	380	45	0	775
Apprch %	16.4	83.6	0	36.5	63.5	0	89.4	10.6	0	
Total %	1.5	7.9	0	13	22.7	0	49	5.8	0	
Cars	12	61	0	101	176	0	377	38	0	765
% Cars	100	100	0	100	100	0	99.2	84.4	0	98.7
Heavy Vehicles	0	0	0	0	0	0	3	7	0	10
% Heavy Vehicles	0	0	0	0	0	0	0.8	15.6	0	1.3

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

Peak Hour for Entire Intersection Begins at 05:00 PM

	Marina Drive From North				Victory Drive From East				Victory Drive From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
05:00 PM	**2**	**9**	0	**11**	15	24	0	39	**79**	**6**	0	**85**	**135**
05:15 PM	0	8	0	8	13	23	0	36	62	5	0	67	111
05:30 PM	2	6	0	8	15	**27**	0	**42**	32	6	0	38	88
05:45 PM	1	6	0	7	**17**	23	0	40	38	6	0	44	91
Total Volume	5	29	0	34	60	97	0	157	211	23	0	234	425
% App. Total	14.7	85.3	0		38.2	61.8	0		90.2	9.8	0		
PHF	.625	.806	.000	.773	.882	.898	.000	.935	.668	.958	.000	.688	.787
Cars	5	29	0	34	60	97	0	157	211	20	0	231	422
% Cars	100	100	0	100	100	100	0	100	100	87.0	0	98.7	99.3
Heavy Vehicles	0	0	0	0	0	0	0	0	0	3	0	3	3
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	13.0	0	1.3	0.7

N: Marina Drive
E/W: Victorry Road
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Client: Howard/Stein-Hudson/ M. Tremblay

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Groups Printed- Cars

	Marina Drive From North			Victory Drive From East			Victory Drive From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
04:00 PM	2	11	0	13	18	0	53	4	0	101
04:15 PM	2	9	0	15	20	0	29	6	0	81
04:30 PM	0	4	0	8	17	0	43	2	0	74
04:45 PM	3	8	0	5	24	0	41	6	0	87
Total	7	32	0	41	79	0	166	18	0	343
05:00 PM	2	9	0	15	24	0	79	5	0	134
05:15 PM	0	8	0	13	23	0	62	4	0	110
05:30 PM	2	6	0	15	27	0	32	5	0	87
05:45 PM	1	6	0	17	23	0	38	6	0	91
Total	5	29	0	60	97	0	211	20	0	422
Grand Total	12	61	0	101	176	0	377	38	0	765
Apprch %	16.4	83.6	0	36.5	63.5	0	90.8	9.2	0	
Total %	1.6	8	0	13.2	23	0	49.3	5	0	

	Marina Drive From North				Victory Drive From East				Victory Drive From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	**2**	**9**	0	**11**	15	24	0	39	**79**	5	0	**84**	**134**
05:15 PM	0	8	0	8	13	23	0	36	62	4	0	66	110
05:30 PM	2	6	0	8	15	**27**	0	**42**	32	5	0	37	87
05:45 PM	1	6	0	7	**17**	23	0	40	38	**6**	0	44	91
Total Volume	5	29	0	34	60	97	0	157	211	20	0	231	422
% App. Total	14.7	85.3	0		38.2	61.8	0		91.3	8.7	0		
PHF	.625	.806	.000	.773	.882	.898	.000	.935	.668	.833	.000	.688	.787

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Groups Printed- Heavy Vehicles

	Marina Drive From North			Victory Drive From East			Victory Drive From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
04:00 PM	0	0	0	0	0	0	1	1	0	2
04:15 PM	0	0	0	0	0	0	2	1	0	3
04:30 PM	0	0	0	0	0	0	0	1	0	1
04:45 PM	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	3	4	0	7
05:00 PM	0	0	0	0	0	0	0	1	0	1
05:15 PM	0	0	0	0	0	0	0	1	0	1
05:30 PM	0	0	0	0	0	0	0	1	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	3	0	3
Grand Total	0	0	0	0	0	0	3	7	0	10
Apprch %	0	0	0	0	0	0	30	70	0	
Total %	0	0	0	0	0	0	30	70	0	

	Marina Drive From North				Victory Drive From East				Victory Drive From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	0	0	0	0	0	0	0	0	1	**1**	0	2	2
04:15 PM	0	0	0	0	0	0	0	0	**2**	1	0	**3**	**3**
04:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	0	0	3	4	0	7	7
% App. Total	0	0	0		0	0	0		42.9	57.1	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.375	1.00	.000	.583	.583

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Groups Printed- Peds and Bicycles

	Marina Drive From North			Victory Drive From East			Victory Drive From West			
Start Time	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	Int. Total
04:00 PM	0	0	2	0	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	4	0	0	0	0	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	6	0	0	0	0	0	0	6
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	1	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	1	0	0	0	0	0	0	1
Total	0	0	2	0	0	0	0	0	0	2
Grand Total	0	0	8	0	0	0	0	0	0	8
Apprch %	0	0	100	0	0	0	0	0	0	
Total %	0	0	100	0	0	0	0	0	0	

	Marina Drive From North				Victory Drive From East				Victory Drive From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	0	0	2	2	0	0	0	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	**4**	**4**	0	0	0	0	0	0	0	0	**4**
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	6	6	0	0	0	0	0	0	0	0	6
% App. Total	0	0	100		0	0	0		0	0	0		
PHF	.000	.000	.375	.375	.000	.000	.000	.000	.000	.000	.000	.000	.375

N: Marina Drive
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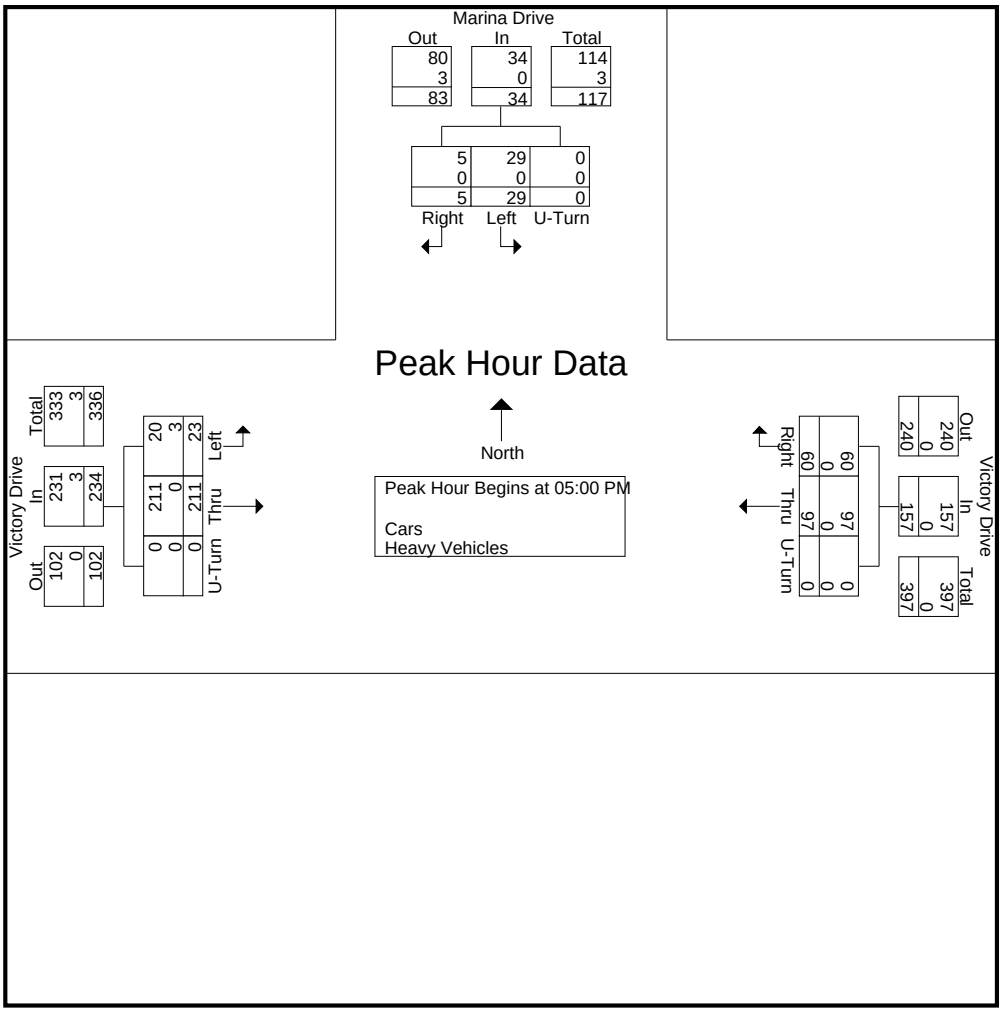
	Marina Drive From North				Victory Drive From East				Victory Drive From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	**2**	**9**	0	**11**	15	24	0	39	**79**	**6**	0	**85**	**135**
05:15 PM	0	8	0	8	13	23	0	36	62	5	0	67	111
05:30 PM	2	6	0	8	15	**27**	0	**42**	32	6	0	38	88
05:45 PM	1	6	0	7	**17**	23	0	40	38	6	0	44	91
Total Volume	5	29	0	34	60	97	0	157	211	23	0	234	425
% App. Total	14.7	85.3	0		38.2	61.8	0		90.2	9.8	0		
PHF	.625	.806	.000	.773	.882	.898	.000	.935	.668	.958	.000	.688	.787
Cars	5	29	0	34	60	97	0	157	211	20	0	231	422
% Cars	100	100	0	100	100	100	0	100	100	87.0	0	98.7	99.3
Heavy Vehicles	0	0	0	0	0	0	0	0	0	3	0	3	3
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	13.0	0	1.3	0.7



Department of Conservation & Recreation
Division of Urban Parks & Recreation

PHASE II CONSTRUCTION TRAFFIC REPORT

BRIDGE No. 69
Route 3A (William T. Morrissey Boulevard)
Over Neponset River
Boston and Quincy, Massachusetts
Project: P92-1660-D1A

Prepared By:
Dewberry
280 Summer Street
Boston, MA 02210
Revised February, 2009

HISTORIC TRAFFIC VOLUME COMPARISON

2007 (PRE-CONSTRUCTION) VS. 2011 (DURING CONSTR.)

Howard/Stein-Hudson Associates, Inc.
38 Chauncy Street
Boston, Massachusetts 02111
(617) 482-7080 ■ Fax (617) 482-7417

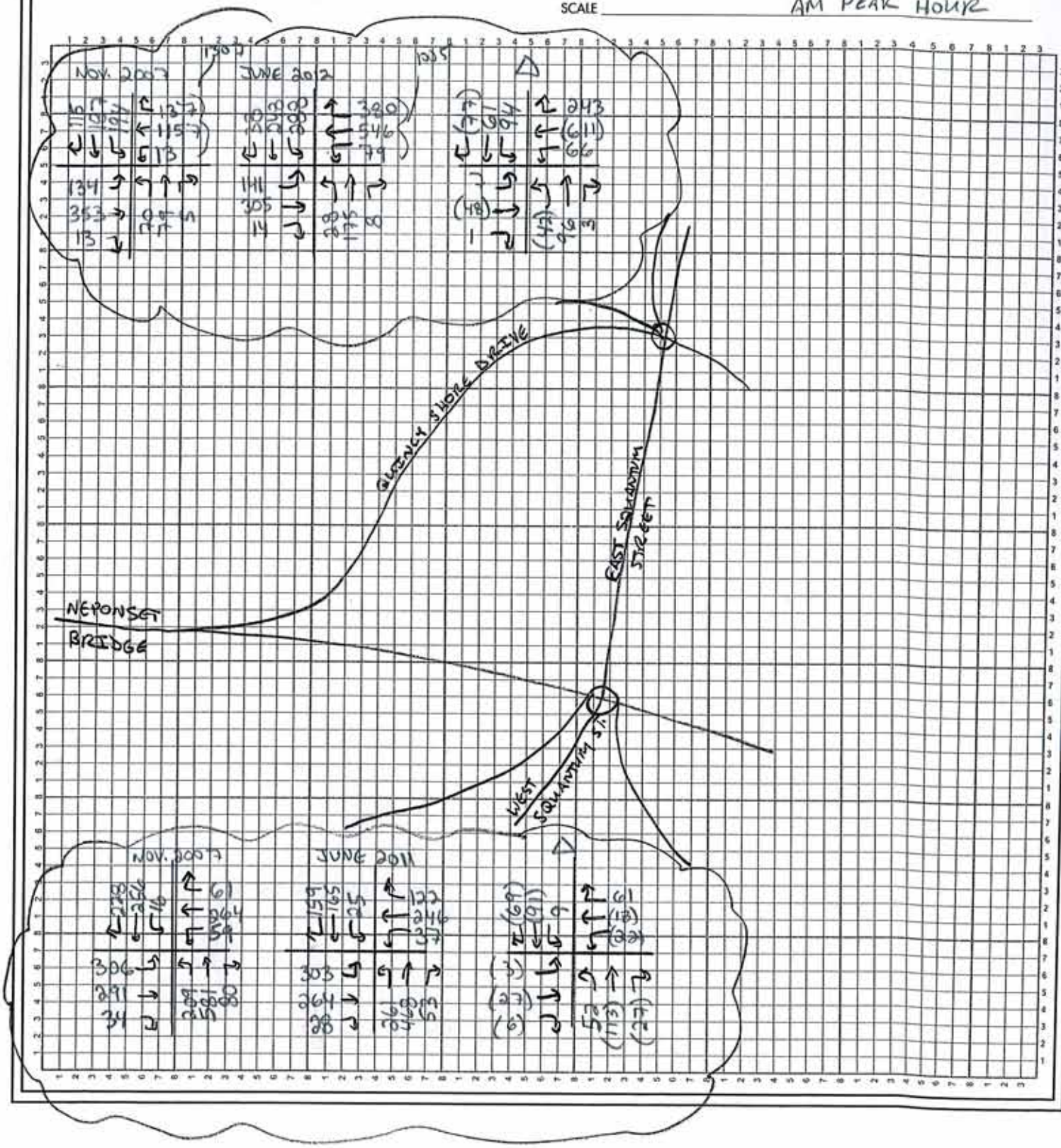
JOB RESIDENCES @ MARINA BAY 2011140

SHEET NO. _____ OF _____

CALCULATED BY JS DATE 1/17/2013

CHECKED BY _____ DATE _____

SCALE AM PEAK HOUR



Howard/Stein-Hudson Associates, Inc.
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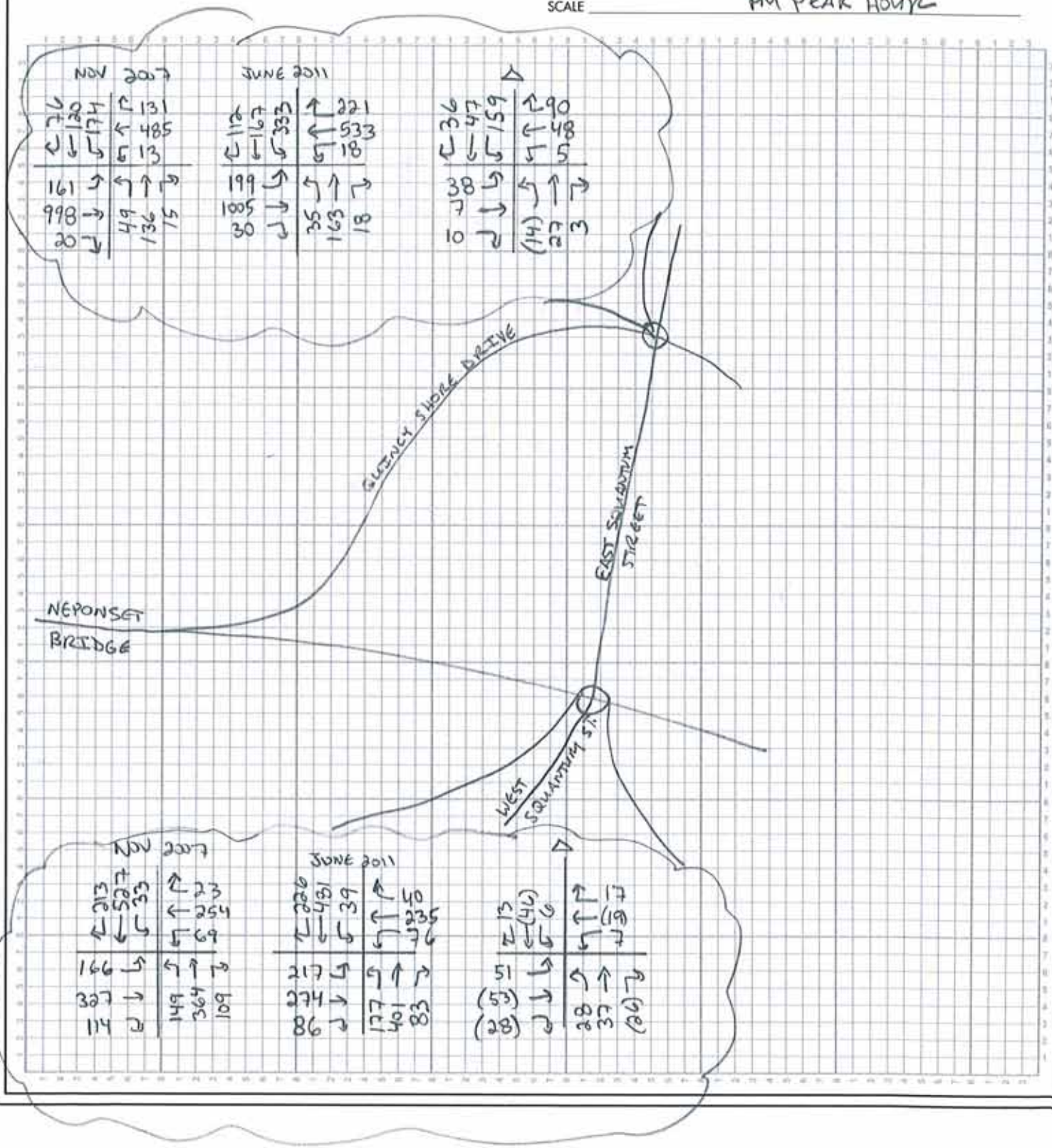
JOB RESIDENCES @ MARINA BAY 2011140

SHEET NO. _____ OF _____

CALCULATED BY JS DATE 1/17/2013

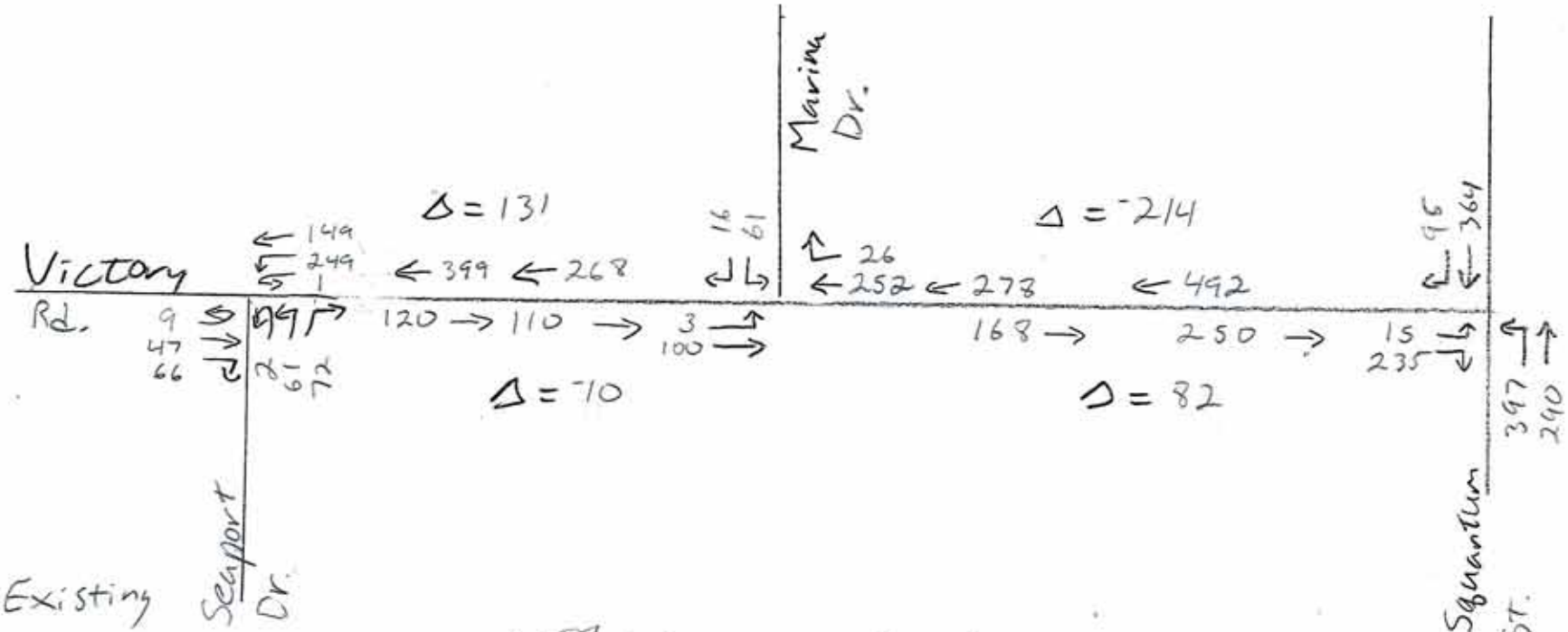
CHECKED BY _____ DATE _____

SCALE PM PEAK HOUR

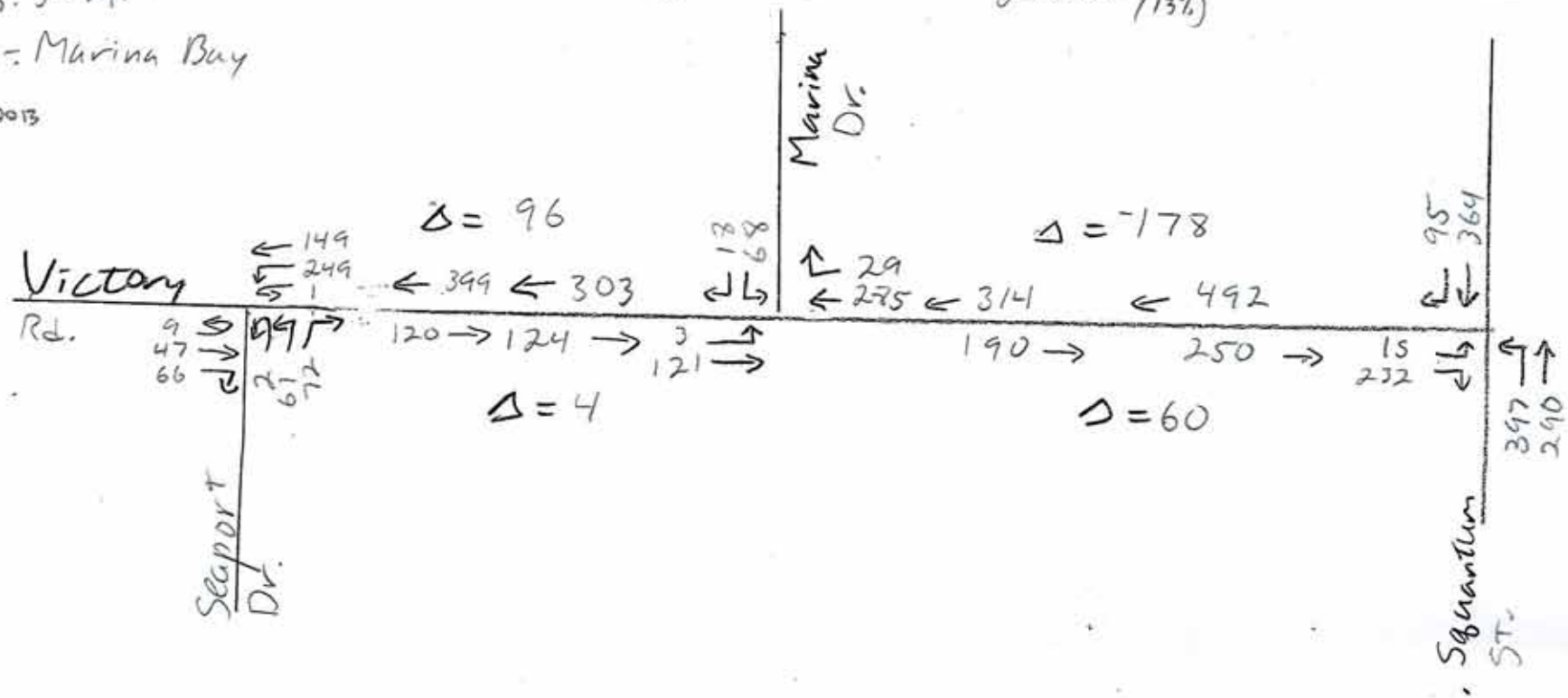


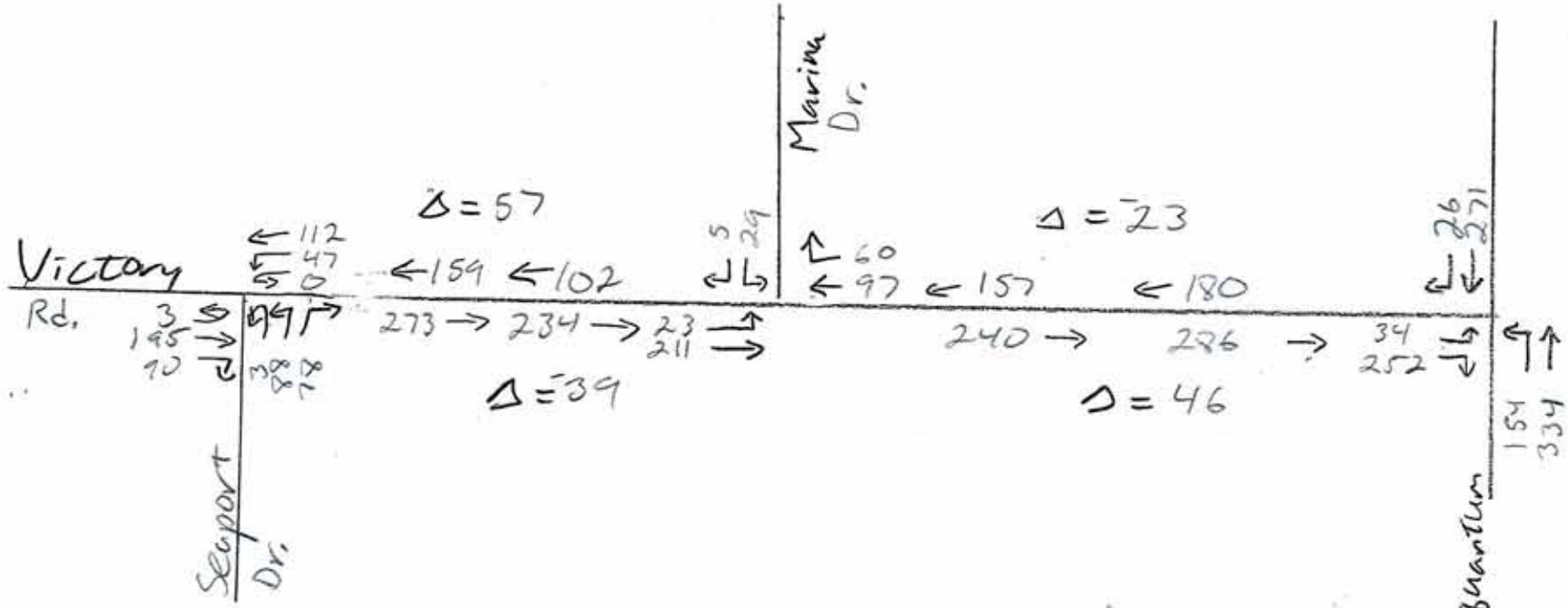
2012 Existing
AM Peak
7:30 - 8:30 AM
2011140 - Marina Bay
1/17/2013

without seasonal factor



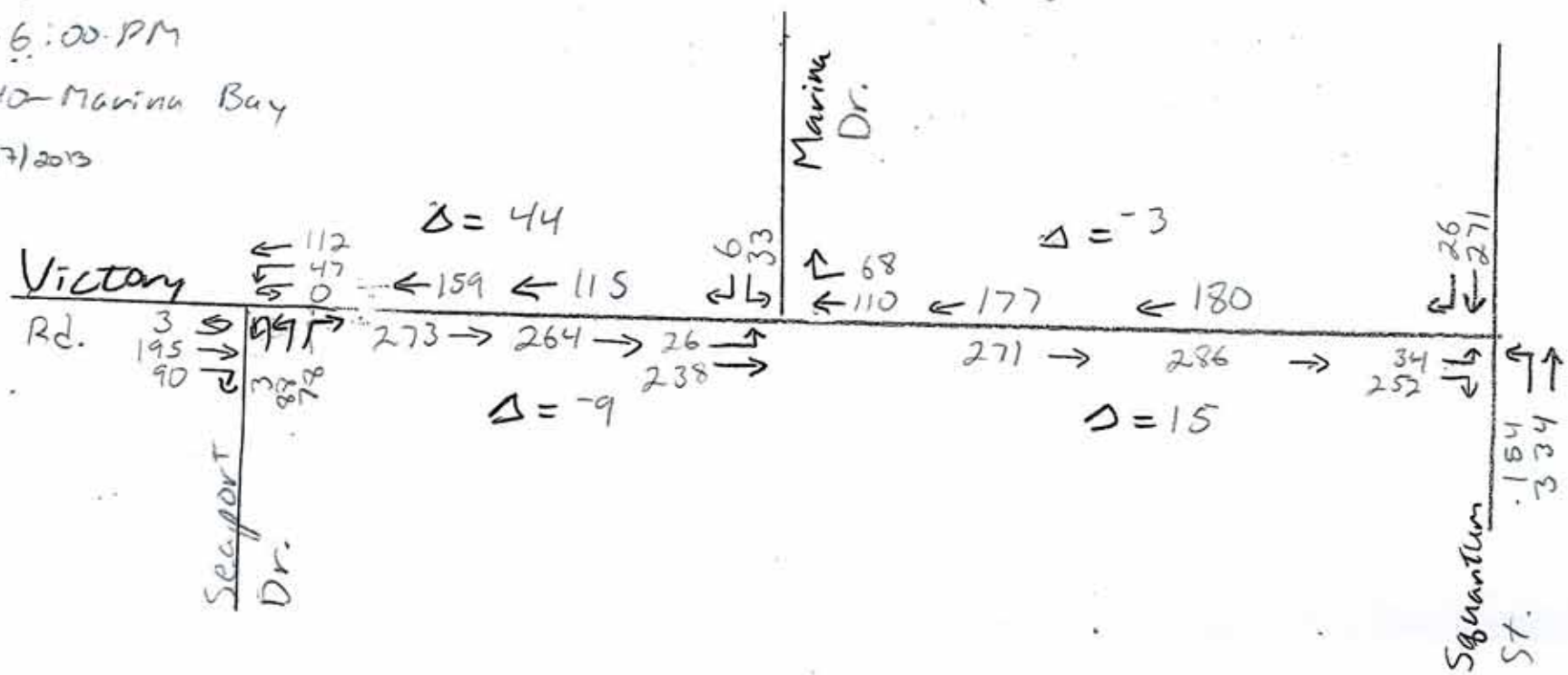
with seasonal factor (13%)





2012 Existing
PM Peak
5:00-6:00 PM
2011140 Marina Bay
1/17/2013

without seasonal factor
with seasonal factor (131.)



Boardwalk Residences at Marina Bay, Quincy

Count Comparinson -- Pre-Construction vs. During Construction

January 17, 2013

1. Quincy Shore Drive/East Squantum Street

AM Peak Hour

	2007	2011	Diff.	% Chg.
Quincy EB left	134	141	7	
Quincy EB thru	353	305	-48	
Quincy EB right	13	14	1	
Quincy WB left	13	79	66	
Quincy WB thru	1157	546	-611	
Quincy WB right	137	380	243	
Squantum NB left	70	28	-42	
Squantum NB thru	79	175	96	
Squantum NB right	5	8	3	
Squantum SB left	194	288	94	
Squantum SB thru	187	248	61	
Squantum SB right	115	38	-77	
	2457	2250	-207	**-8%**

PM Peak Hour

	2007	2011	Diff.	% Chg.
Quincy EB left	161	199	38	
Quincy EB thru	998	1005	7	
Quincy EB right	20	30	10	
Quincy WB left	13	18	5	
Quincy WB thru	485	533	48	
Quincy WB right	131	221	90	
Squantum NB left	49	35	-14	
Squantum NB thru	136	163	27	
Squantum NB right	15	18	3	
Squantum SB left	174	333	159	
Squantum SB thru	120	167	47	
Squantum SB right	76	112	36	
	2378	2834	456	**19%**

2. East Squantum Street/West Squantum Street/Hancock Street

AM Peak Hour

	2007	2011	Diff.	% Chg.
W Squantum EB left	306	303	-3	
W Squantum EB thru	291	264	-27	
W Squantum EB right	34	28	-6	
E Squantum WB left	59	37	-22	
E Squantum WB thru	264	246	-18	
E Squantum WB right	61	122	61	
Hancock NB left	209	261	52	
Hancock NB thru	581	468	-113	
Hancock NB right	80	53	-27	
Hancock SB left	16	25	9	
Hancock SB thru	256	165	-91	
Hancock SB right	228	159	-69	
	2385	2131	-254	**-11%**

PM Peak Hour

	2007	2011	Diff.	% Chg.
W Squantum EB left	166	217	51	
W Squantum EB thru	327	274	-53	
W Squantum EB right	114	86	-28	
E Squantum WB left	69	76	7	
E Squantum WB thru	254	235	-19	
E Squantum WB right	23	40	17	
Hancock NB left	149	177	28	
Hancock NB thru	364	401	37	
Hancock NB right	109	83	-26	
Hancock SB left	33	39	6	
Hancock SB thru	527	481	-46	
Hancock SB right	213	226	13	
	2348	2335	-13	**-1%**

Comparison of 2007 traffic count data from the DCR, Phase II Construction Traffic Report, February 2009 and 2012 traffic count data from the Boardwalk Residences at Marina Bay TIAS, September 2012.

Study Name: Location 1
Start Date: 11/27/2007
Start Time: 6:02 AM
Site Code: 00000015
Quincy Shore Drive at East Squantum Street in Quincy, MA
Revised by MS 9/23/08

	E Squantum Street Northbound				Quincy Shore Drive Eastbound				E Squantum Street Southbound				Quincy Shore Drive Westbound				15-min Total minus Peds	Hour Total minus Peds
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
06:02 AM	0	9	11	0	0	20	13	0	24	20	9	0	14	283	1	0	404	2013
06:17 AM	0	8	20	0	1	38	9	0	21	20	26	0	15	335	1	0	494	2246
06:32 AM	0	22	14	0	0	65	22	0	44	31	26	0	22	353	0	0	599	2367
06:47 AM	1	20	14	0	0	47	19	0	16	38	20	0	24	316	1	0	516	2401
07:02 AM	0	17	19	0	4	82	35	0	40	42	39	0	23	334	2	0	637	2457
07:17 AM	2	22	19	0	0	84	51	0	28	39	52	0	25	290	3	0	615	2333
07:32 AM	0	18	13	0	6	100	32	0	32	47	54	0	47	279	5	0	633	2338
07:47 AM	3	22	19	0	3	87	16	2	15	59	49	2	42	254	3	1	572	2268
08:02 AM	4	39	8	0	2	111	29	0	15	38	60	1	63	144	0	0	513	2189
08:17 AM	4	33	13	0	1	100	24	0	21	46	60	0	74	242	2	0	620	1676
08:32 AM	0	17	14	0	2	75	25	0	13	43	53	1	72	248	1	2	563	1056
08:47 AM	0	24	3	1	2	79	13	0	26	45	57	0	42	200	2	5	493	1131
09:02 AM																		
03:45 PM																		
04:00 PM	7	45	12	0	4	230	38	0	38	41	56	1	44	120	3	0	638	2561
04:15 PM	1	42	6	0	4	258	42	0	20	37	55	0	43	140	6	0	654	2647
04:30 PM	5	40	5	0	4	267	28	0	17	30	63	0	43	113	2	1	617	2698
04:45 PM	2	43	12	2	8	295	36	0	19	28	63	0	43	96	7	2	652	2772
05:00 PM	3	52	8	1	4	259	41	0	21	38	86	0	43	166	3	2	724	2781
05:15 PM	5	39	12	0	11	270	37	0	17	37	66	0	49	158	4	0	705	2675
05:30 PM	3	39	9	0	6	262	50	0	23	40	78	0	33	146	2	1	691	2531
05:45 PM	4	45	15	0	8	276	39	0	15	28	54	0	39	135	3	2	661	2378
06:00 PM	3	35	15	0	8	262	45	0	18	31	34	0	27	135	5	2	618	2192
06:15 PM	4	22	11	2	4	238	40	0	20	31	38	0	35	117	1	1	561	1574
06:30 PM	4	34	8	0	0	222	37	0	23	30	48	1	30	98	4	1	538	1013
06:45 PM	5	25	6	0	2	185	29	0	14	24	38	0	34	105	8	3	475	475
07:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM Peak

7:02-8:02	5	79	70	0	13	353	134	2	115	187	194	2	137	1157	13	1
% Trucks	0%	0%	0%		0%	0%	4%		3%	3%	1%		0%	0%	0%	
PHF	0.42	0.90	0.92		0.54	0.88	0.66		0.72	0.79	0.90		0.73	0.87	0.65	

PM Peak

5:00-6:00	15	136	49	2	20	998	161	0	76	120	174	1	131	485	13	6
% Trucks	0%	0%	0%		0%	0%	1%		1%	3%	1%		0%	0%	0%	
PHF	0.75	0.65	0.82		0.45	0.90	0.81		0.83	0.75	0.51		0.67	0.73	0.81	

Study Name: **Location 2 11/28/2007**
Start Date: **11/28/2007**
Start Time: **5:47 AM**
Site Code: **00000052**
Hancock Street and Squantum Street in Quincy, MA

	Hancock Street Southbound				Squantum Street Westbound				Hancock Street Northbound				Squantum Street Eastbound				15-min Total minus Peds	Hour Total minus Peds
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
05:47 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1004
06:02 AM	2	15	23	0	7	32	0	0	13	31	8	0	7	95	12	0	245	1429
06:17 AM	6	22	27	1	20	45	2	0	18	47	8	0	9	133	18	0	355	1671
06:32 AM	5	26	41	0	22	39	3	0	22	47	7	0	15	152	24	1	403	1908
06:47 AM	8	24	44	1	15	42	1	0	15	60	10	0	15	145	47	0	426	2121
07:02 AM	5	33	44	5	49	38	4	0	13	88	6	0	19	155	33	6	487	2260
07:17 AM	12	81	73	9	56	51	4	0	24	68	22	0	22	132	47	4	592	2385
07:32 AM	10	82	73	22	63	60	6	0	8	74	23	0	24	150	43	19	616	2356
07:47 AM	9	57	73	18	47	69	3	0	16	62	5	0	14	147	63	4	565	2221
08:02 AM	3	71	87	20	62	76	3	0	13	60	9	0	20	152	56	4	612	2133
08:17 AM	7	39	68	14	60	61	3	0	20	66	7	0	13	163	56	2	563	1521
08:32 AM	13	38	72	6	43	65	0	0	20	51	14	0	12	102	51	1	481	958
08:47 AM	9	35	59	5	35	67	3	0	14	61	23	0	11	121	39	0	477	477
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	527
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1053
03:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1638
04:00 PM	21	69	45	7	37	112	10	0	6	54	15	0	24	89	45	1	527	2171
04:15 PM	22	73	39	8	46	114	12	0	11	49	18	0	22	89	31	2	526	2214
04:30 PM	27	65	30	14	46	108	10	0	10	57	26	0	49	104	53	2	585	2293
04:45 PM	27	88	46	3	34	115	6	0	3	45	12	0	26	94	37	5	533	2259
05:00 PM	21	80	31	6	44	106	11	0	7	62	22	0	31	110	45	1	570	2327
05:15 PM	34	78	38	23	63	146	6	0	7	55	17	0	29	91	41	5	605	2348
05:30 PM	27	80	43	15	47	123	12	0	2	59	20	0	20	80	38	4	551	2304
05:45 PM	33	81	45	7	45	134	5	0	8	72	19	0	32	89	38	3	601	2236
06:00 PM	20	88	40	10	58	124	10	0	6	68	13	0	28	104	32	7	591	2184
06:15 PM	24	76	38	10	40	118	9	0	13	52	25	0	33	103	30	1	561	1593
06:30 PM	27	60	35	10	34	123	5	0	8	47	17	0	24	68	35	2	483	1032
06:45 PM	27	64	32	2	66	119	11	0	9	54	21	0	23	87	36	0	549	549
07:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

AM Peak

7:20-8:20	34	291	306	69	228	256	16	0	61	264	59	0	80	581	209	31
% Trucks	0%	1%	0%		0%	2%	6%		0%	2%	3%		1%	1%	0%	
PHF	0.71	0.89	0.88		0.90	0.84	0.67		0.64	0.89	0.64		0.83	0.96	0.83	

PM Peak

5:15-6:15	114	327	166	55	213	527	33	0	23	254	69	0	109	364	149	19
% Trucks	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.9%	0.8%	0.0%	
PHF	0.84	0.93	0.92		0.85	0.90	0.69		0.72	0.88	0.86		0.85	0.88	0.91	

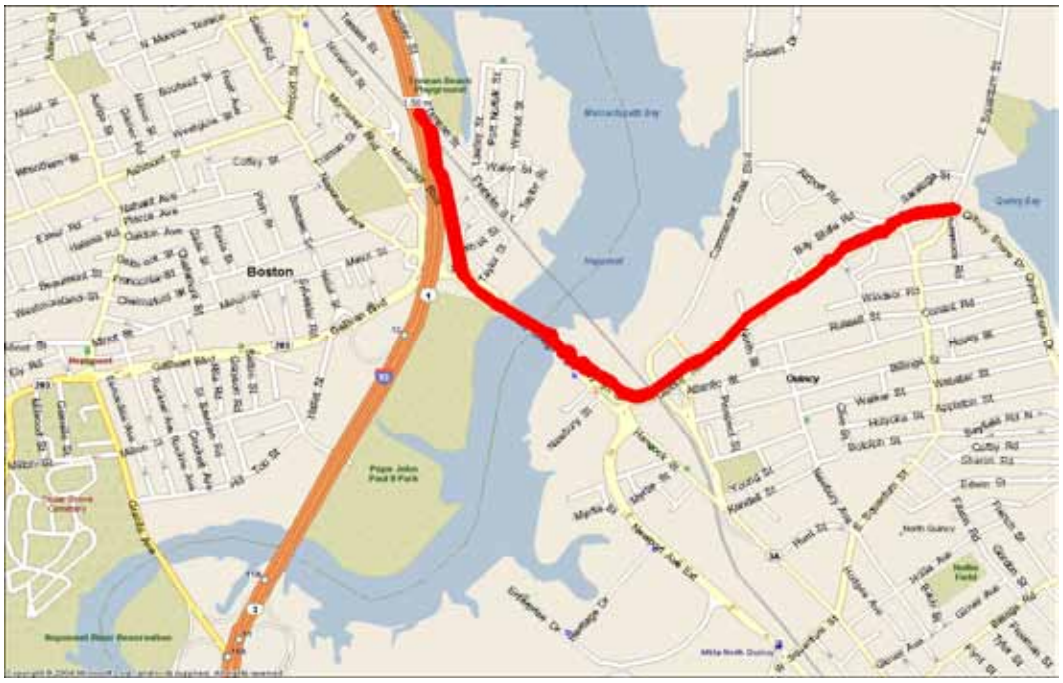


Figure 2-1 – Route 1 AM - Quincy Shore Dr./E Squantum St. to Route 93

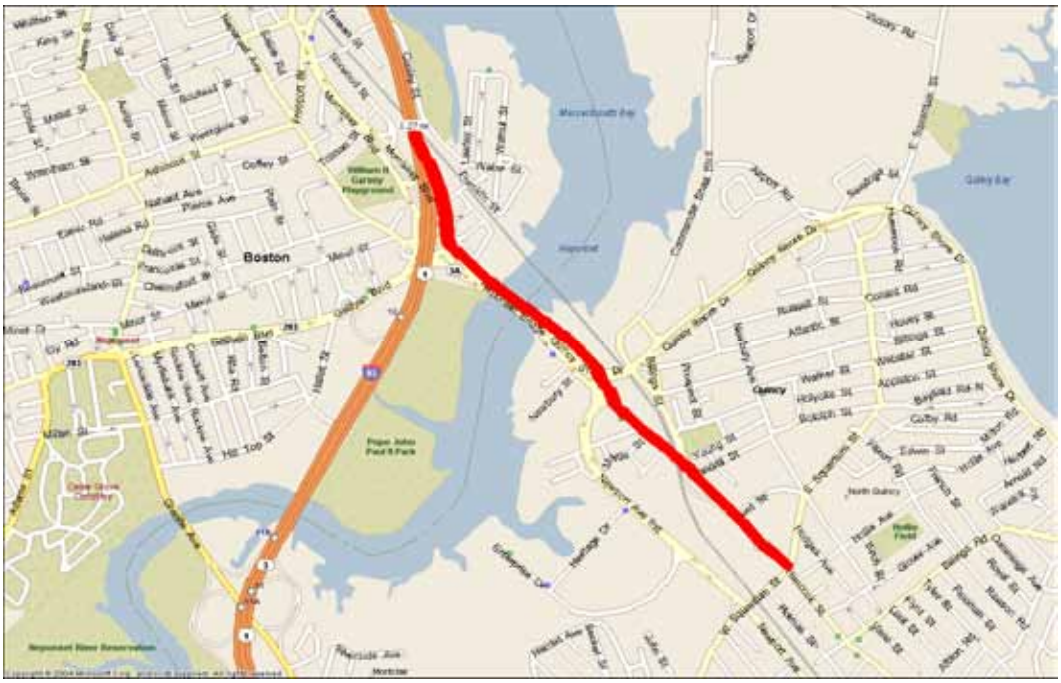


Figure 2-2 - Route 2 AM – Hancock St./E. Squantum St. to Route 93

Table 4- Travel Time - AM Peak

AM Peak Scenarios										
Route #	**Route**	**AM Existing**	**Phase 1A - No Diversions**	**Phase 1A- With Diversions**	**Phase 1B - No Diversions**	**Phase 1B - With Diversions**	**Phase 2A - No Diversions**	**Phase 2A - With Diverisions**	**Phase 2B - No Diversion**	**Phase 2B - With Diversions**
1	From Quincy Shore Dr. & E Squantum St. To Rt 93 NB	22:09	32:04	24:16	32:43	22:55	35:53	26:10	Same As Phase 2A	Same As Phase 2A With Improvements
2	From Hancock St. & E Squantum St. To Rt 93 NB	27:49	27:21	31:15	35:51	32:40	32:51	32:41		

Table 5 – Travel Time –PM Peak

PM Peak Scenarios											
Route #	**Route**	**PM Existing**	**Phase 1A**	**Phase 1A With Improvements**	**Phase 1A With Improvements & Diversions**	**Phase 1B**	**Phase 1B With Improvements**	**Phase 1B With Improvements & Diversions**	**Phase 2A/2B**	**Phase 2A/2B With Improvements**	**Phase 2A/2B With Improvements & Diversions**
3	Route 93 Ramp to Quincy Shore Dr. & E Squantum St.	5:02	10:28	6.42	6:20	10:41	8:55	7:35	9:44	9:29	8:04
4	Route 93 Ramp to Hancock St. & E Squantum St.	5:10	10:53	6:38	6:26	11:32	8:16	6:36	9:46	9:42	8:03
5	Gallivan Blvd. and Granite Ave. to Quincy Shore Dr. & E Squantum St.	5:42	22:24	13:14	13:03	21:59	12:55	11:09	16:31	13:41	11:20
6	Gallivan Blvd. and Granite Ave. to Hancock St. & E Squantum St.	5:56	24:20	14:11	13:28	20:02	14:11	10:55	22:15	13:52	11:33

*Note: Travel time in Minutes:Seconds.

Figure 6-1 –Back of Queue Location - AM Phase 1A

Figure 6-2 –Back of Queue Location - AM Phase 1B

Figure 6-3 – Back of Queue Location – AM Phase 2A & Phase 2B

Figure 6–4 – Back of Queue Location – PM Phases

N/S: Hancock Street
E/W: E/W Squantum Street
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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

File Name : 122931 H
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Hancock Street From North				East Squantum Street From East				Hancock Street From South				West Squantum Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	29	49	4	0	29	73	12	0	10	163	35	0	5	38	64	0	511
07:15 AM	36	49	3	0	29	73	7	0	17	148	46	0	10	50	73	0	541
07:30 AM	34	29	5	0	26	61	13	0	8	124	66	0	6	68	78	0	518
07:45 AM	40	44	6	0	35	58	5	0	9	128	59	0	9	50	70	0	513
Total	139	171	18	0	119	265	37	0	44	563	206	0	30	206	285	0	2083
08:00 AM	44	48	5	0	36	62	6	0	14	108	62	0	7	68	74	0	534
08:15 AM	41	44	9	0	25	65	13	0	22	108	74	0	6	78	81	0	566
08:30 AM	31	54	6	0	22	71	15	0	18	86	40	0	11	33	70	0	457
08:45 AM	23	50	5	0	29	68	15	0	12	111	33	0	8	38	67	0	459
Total	139	196	25	0	112	266	49	0	66	413	209	0	32	217	292	0	2016
Grand Total	278	367	43	0	231	531	86	0	110	976	415	0	62	423	577	0	4099
Apprch %	40.4	53.3	6.2	0	27.2	62.6	10.1	0	7.3	65	27.6	0	5.8	39.8	54.3	0	
Total %	6.8	9	1	0	5.6	13	2.1	0	2.7	23.8	10.1	0	1.5	10.3	14.1	0	
Cars	269	340	41	0	227	518	77	0	96	959	393	0	55	402	562	0	3939
% Cars	96.8	92.6	95.3	0	98.3	97.6	89.5	0	87.3	98.3	94.7	0	88.7	95	97.4	0	96.1
Heavy Vehicles	9	27	2	0	4	13	9	0	14	17	22	0	7	21	15	0	160
% Heavy Vehicles	3.2	7.4	4.7	0	1.7	2.4	10.5	0	12.7	1.7	5.3	0	11.3	5	2.6	0	3.9

	Hancock Street From North					East Squantum Street From East					Hancock Street From South					West Squantum Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	34	29	5	0	68	26	61	**13**	**0**	**100**	**8**	**124**	**66**	**0**	**198**	**6**	**68**	**78**	**0**	**152**	**518**
07:45 AM	**40**	**44**	**6**	**0**	**90**	**35**	**58**	**5**	**0**	**98**	**9**	**128**	**59**	**0**	**196**	**9**	**50**	**70**	**0**	**129**	**513**
08:00 AM	**44**	**48**	5	0	**97**	**36**	62	6	0	**104**	14	108	62	0	184	7	68	74	0	149	534
08:15 AM	41	44	**9**				**65**				**22**		**74**	0	**204**	6	**78**	**81**		**165**	**566**
Total Volume	159	165	25	0	349	122	246	37	0	405	53	468	261	0	782	28	264	303	0	595	2131
% App. Total	45.6	47.3	7.2	0		30.1	60.7	9.1	0		6.8	59.8	33.4	0		4.7	44.4	50.9	0		
PHF	.903	.859	.694	.000	.899	.847	.946	.712	.000	.974	.602	.914	.882	.000	.958	.778	.846	.935	.000	.902	.941
Cars	153	160	24	0	337	119	238	33	0	390	50	461	250	0	761	24	256	296	0	576	2064
% Cars	96.2	97.0	96.0	0	96.6	97.5	96.7	89.2	0	96.3	94.3	98.5	95.8	0	97.3	85.7	97.0	97.7	0	96.8	96.9
Heavy Vehicles	6	5	1	0	12	3	8	4	0	15	3	7	11	0	21	4	8	7	0	19	67
% Heavy Vehicles	3.8	3.0	4.0	0	3.4	2.5	3.3	10.8	0	3.7	5.7	1.5	4.2	0	2.7	14.3	3.0	2.3	0	3.2	3.1

N/S: Hancock Street
E/W: E/W Squantum Street
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

PRECISION DATA INDUSTRIES, LLC
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File Name : 122931 H
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Cars

	Hancock Street From North				East Squantum Street From East				Hancock Street From South				West Squantum Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	29	45	3	0	29	73	11	0	8	162	34	0	5	34	61	0	494
07:15 AM	35	43	3	0	28	72	7	0	8	146	42	0	9	49	72	0	514
07:30 AM	33	28	4	0	24	59	12	0	6	122	62	0	6	67	77	0	500
07:45 AM	40	44	6	0	35	55	2	0	8	126	56	0	7	49	67	0	495
Total	137	160	16	0	116	259	32	0	30	556	194	0	27	199	277	0	2003
08:00 AM	44	45	5	0	36	59	6	0	14	107	61	0	5	67	74	0	523
08:15 AM	36	43	9	0	24	65	13	0	22	106	71	0	6	73	78	0	546
08:30 AM	30	44	6	0	22	69	13	0	18	82	38	0	9	30	69	0	430
08:45 AM	22	48	5	0	29	66	13	0	12	108	29	0	8	33	64	0	437
Total	132	180	25	0	111	259	45	0	66	403	199	0	28	203	285	0	1936
Grand Total	269	340	41	0	227	518	77	0	96	959	393	0	55	402	562	0	3939
Apprch %	41.4	52.3	6.3	0	27.6	63	9.4	0	6.6	66.2	27.1	0	5.4	39.5	55.2	0	
Total %	6.8	8.6	1	0	5.8	13.2	2	0	2.4	24.3	10	0	1.4	10.2	14.3	0	

	Hancock Street From North					East Squantum Street From East					Hancock Street From South					West Squantum Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	33	28	4	0	65	24	59	12	0	95	6	122	62	0	190	6	67	77	0	150	500
07:45 AM	40	44	6	0	90	35	55	2	0	92	8	**126**	**56**	**0**	**190**	**7**	**49**	**67**	**0**	**123**	**495**
08:00 AM	**44**	**45**	5	0	**94**	**36**	59	6	0	101	14	107	61	0	182	5	67	74	0	146	523
08:15 AM	36	43	**9**				**65**	**13**		**102**	**22**		**71**	0	**199**	6	**73**	**78**		**157**	**546**
Total Volume	153	160	24	0	337	119	238	33	0	390	50	461	250	0	761	24	256	296	0	576	2064
% App. Total	45.4	47.5	7.1	0		30.5	61	8.5	0		6.6	60.6	32.9	0		4.2	44.4	51.4	0		
PHF	.869	.889	.667	.000	.896	.826	.915	.635	.000	.956	.568	.915	.880	.000	.956	.857	.877	.949	.000	.917	.945

N/S: Hancock Street
E/W: E/W Squantum Street
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File Name : 122931 H
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Page No : 1

Groups Printed- Heavy Vehicles

	Hancock Street From North				East Squantum Street From East				Hancock Street From South				West Squantum Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	4	1	0	0	0	1	0	2	1	1	0	0	4	3	0	17
07:15 AM	1	6	0	0	1	1	0	0	9	2	4	0	1	1	1	0	27
07:30 AM	1	1	1	0	2	2	1	0	2	2	4	0	0	1	1	0	18
07:45 AM	0	0	0	0	0	3	3	0	1	2	3	0	2	1	3	0	18
Total	2	11	2	0	3	6	5	0	14	7	12	0	3	7	8	0	80
08:00 AM	0	3	0	0	0	3	0	0	0	1	1	0	2	1	0	0	11
08:15 AM	5	1	0	0	1	0	0	0	0	2	3	0	0	5	3	0	20
08:30 AM	1	10	0	0	0	2	2	0	0	4	2	0	2	3	1	0	27
08:45 AM	1	2	0	0	0	2	2	0	0	3	4	0	0	5	3	0	22
Total	7	16	0	0	1	7	4	0	0	10	10	0	4	14	7	0	80
Grand Total	9	27	2	0	4	13	9	0	14	17	22	0	7	21	15	0	160
Apprch %	23.7	71.1	5.3	0	15.4	50	34.6	0	26.4	32.1	41.5	0	16.3	48.8	34.9	0	
Total %	5.6	16.9	1.2	0	2.5	8.1	5.6	0	8.8	10.6	13.8	0	4.4	13.1	9.4	0	

	Hancock Street From North					East Squantum Street From East					Hancock Street From South					West Squantum Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	4	**1**	**0**	**5**	**0**	**0**	**1**	**0**	**1**	**2**	**1**	**1**	**0**	**4**	**0**	**4**	**3**	**0**	**7**	17
07:15 AM	**1**	**6**	0	0	**7**	1	1	0	0	2	**9**	**2**	**4**	0	**15**	1	1	1	0	3	**27**
07:30 AM	1	1	1	0	3	**2**	2	1	0	5	2	2	4	0	8	0	1	1	0	2	18
07:45 AM	0	0	0	0	0	0	**3**	**3**		**6**	1	2	3	0	6	**2**					
Total Volume	2	11	2	0	15	3	6	5	0	14	14	7	12	0	33	3	7	8	0	18	80
% App. Total	13.3	73.3	13.3	0		21.4	42.9	35.7	0		42.4	21.2	36.4	0		16.7	38.9	44.4	0		
PHF	.500	.458	.500	.000	.536	.375	.500	.417	.000	.583	.389	.875	.750	.000	.550	.375	.438	.667	.000	.643	.741

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Page No : 1

Groups Printed- Peds and Bicycles

	Hancock Street From North				East Squantum Street From East				Hancock Street From South				West Squantum Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	9	0	1	0	1	0	0	0	12	0	0	0	14	37
07:15 AM	0	0	0	12	0	0	0	3	0	0	0	21	0	0	0	29	65
07:30 AM	0	0	0	25	0	0	0	5	0	1	0	18	0	0	0	22	71
07:45 AM	0	1	0	15	0	0	0	3	0	0	1	25	0	0	0	23	68
Total	0	1	0	61	0	1	0	12	0	1	1	76	0	0	0	88	241
08:00 AM	0	0	0	13	0	0	0	3	0	0	0	26	1	0	0	28	71
08:15 AM	0	0	0	10	0	0	0	1	0	0	0	15	0	0	0	18	44
08:30 AM	0	0	0	8	0	0	0	5	0	0	0	11	0	0	0	14	38
08:45 AM	0	0	0	9	0	0	0	6	0	0	0	17	0	0	0	22	54
Total	0	0	0	40	0	0	0	15	0	0	0	69	1	0	0	82	207
Grand Total	0	1	0	101	0	1	0	27	0	1	1	145	1	0	0	170	448
Apprch %	0	1	0	99	0	3.6	0	96.4	0	0.7	0.7	98.6	0.6	0	0	99.4	
Total %	0	0.2	0	22.5	0	0.2	0	6	0	0.2	0.2	32.4	0.2	0	0	37.9	

	Hancock Street From North					East Squantum Street From East					Hancock Street From South					West Squantum Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	12	12	0	0	0	3	3	0	0	0	21	21	0	0	0	**29**	**29**	65
07:30 AM	0	0	0	**25**	**25**	0	0	0	**5**	**5**	0	**1**									**71**
07:45 AM	0	**1**	0	15	16	0	0	0	3	3	0	0	**1**	25	**26**	0	0	0	23	23	68
08:00 AM	0	0	0	13	13	0	0	0	3	3	0	0	0	**26**		**1**					
Total Volume	0	1	0	65	66	0	0	0	14	14	0	1	1	90	92	1	0	0	102	103	275
% App. Total	0	1.5	0	98.5		0	0	0	100		0	1.1	1.1	97.8		1	0	0	99		
PHF	.000	.250	.000	.650	.660	.000	.000	.000	.700	.700	.000	.250	.250	.865	.885	.250	.000	.000	.879	.888	.968

N/S: Hancock Street
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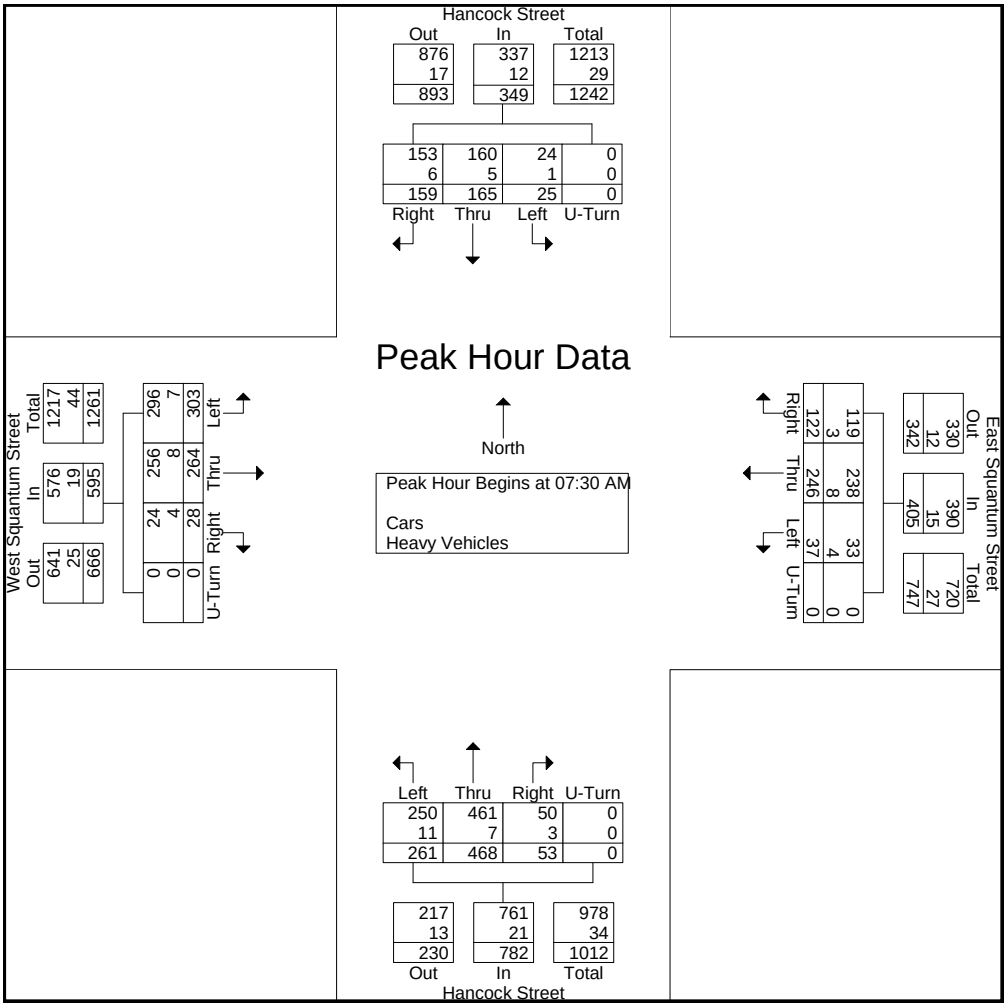
	Hancock Street From North					East Squantum Street From East					Hancock Street From South					West Squantum Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	34	29	5	0	68	26	61	**13**	**0**	**100**	**8**	**124**	**66**	**0**	**198**	**6**	**68**	**78**	**0**	**152**	**518**
07:45 AM	**40**	**44**	**6**	**0**	**90**	**35**	**58**	**5**	**0**	**98**	**9**	**128**	**59**	**0**	**196**	**9**	**50**	**70**	**0**	**129**	**513**
08:00 AM	**44**	**48**	5	0	**97**	**36**	62	6	0	**104**	14	108	62	0	184	7	68	74	0	149	534
08:15 AM	41	44	**9**				**65**				**22**		**74**	0	**204**	6	**78**	**81**		**165**	**566**
Total Volume	159	165	25	0	349	122	246	37	0	405	53	468	261	0	782	28	264	303	0	595	2131
% App. Total	45.6	47.3	7.2	0		30.1	60.7	9.1	0		6.8	59.8	33.4	0		4.7	44.4	50.9	0		
PHF	.903	.859	.694	.000	.899	.847	.946	.712	.000	.974	.602	.914	.882	.000	.958	.778	.846	.935	.000	.902	.941
Cars	153	160	24	0	337	119	238	33	0	390	50	461	250	0	761	24	256	296	0	576	2064
% Cars	96.2	97.0	96.0	0	96.6	97.5	96.7	89.2	0	96.3	94.3	98.5	95.8	0	97.3	85.7	97.0	97.7	0	96.8	96.9
Heavy Vehicles	6	5	1	0	12	3	8	4	0	15	3	7	11	0	21	4	8	7	0	19	67
% Heavy Vehicles	3.8	3.0	4.0	0	3.4	2.5	3.3	10.8	0	3.7	5.7	1.5	4.2	0	2.7	14.3	3.0	2.3	0	3.2	3.1



N/S: Hancock Street
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File Name : 122931 HH
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Groups Printed- Cars - Heavy Vehicles

	Hancock Street From North				East Squantum Street From East				Hancock Street From South				West Squantum Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	43	125	6	0	23	46	20	0	33	83	37	0	16	56	38	0	526
04:15 PM	44	124	7	0	7	57	11	0	24	88	37	0	28	65	39	0	531
04:30 PM	53	128	13	0	11	47	16	0	15	91	41	0	15	66	31	0	527
04:45 PM	48	98	6	0	18	56	15	0	23	83	46	0	22	61	37	0	513
Total	188	475	32	0	59	206	62	0	95	345	161	0	81	248	145	0	2097
05:00 PM	70	123	10	0	14	54	15	0	25	100	42	0	22	67	54	0	596
05:15 PM	51	119	10	0	6	64	24	0	20	104	51	0	18	68	56	0	591
05:30 PM	49	120	8	0	12	68	18	0	19	108	43	0	27	59	60	0	591
05:45 PM	56	119	11	0	8	49	19	0	19	89	41	0	19	80	47	0	557
Total	226	481	39	0	40	235	76	0	83	401	177	0	86	274	217	0	2335
Grand Total	414	956	71	0	99	441	138	0	178	746	338	0	167	522	362	0	4432
Apprch %	28.7	66.3	4.9	0	14.6	65	20.4	0	14.1	59.1	26.8	0	15.9	49.7	34.4	0	
Total %	9.3	21.6	1.6	0	2.2	10	3.1	0	4	16.8	7.6	0	3.8	11.8	8.2	0	
Cars	412	941	70	0	93	432	134	0	174	724	332	0	161	515	355	0	4343
% Cars	99.5	98.4	98.6	0	93.9	98	97.1	0	97.8	97.1	98.2	0	96.4	98.7	98.1	0	98
Heavy Vehicles	2	15	1	0	6	9	4	0	4	22	6	0	6	7	7	0	89
% Heavy Vehicles	0.5	1.6	1.4	0	6.1	2	2.9	0	2.2	2.9	1.8	0	3.6	1.3	1.9	0	2

	Hancock Street From North					East Squantum Street From East					Hancock Street From South					West Squantum Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**70**	**123**	10	0	**203**	**14**	54	15	0	83	**25**	**100**	**42**	**0**	**167**	**22**	**67**	**54**	**0**	**143**	**596**
05:15 PM	51	119	10	0	180	6	64	**24**					**51**	0	**175**	18	68	56	0	142	591
05:30 PM	49	120	8	0	177	12	**68**			**98**	19	**108**				**27**		**60**		**146**	591
05:45 PM	56	119	**11**														**80**	47	0	146	557
Total Volume	226	481	39	0	746	40	235	76	0	351	83	401	177	0	661	86	274	217	0	577	2335
% App. Total	30.3	64.5	5.2	0		11.4	67	21.7	0		12.6	60.7	26.8	0		14.9	47.5	37.6	0		
PHF	.807	.978	.886	.000	.919	.714	.864	.792	.000	.895	.830	.928	.868	.000	.944	.796	.856	.904	.000	.988	.979
Cars	224	475	38	0	737	37	231	76	0	344	82	389	174	0	645	81	270	213	0	564	2290
% Cars	99.1	98.8	97.4	0	98.8	92.5	98.3	100	0	98.0	98.8	97.0	98.3	0	97.6	94.2	98.5	98.2	0	97.7	98.1
Heavy Vehicles	2	6	1	0	9	3	4	0	0	7	1	12	3	0	16	5	4	4	0	13	45
% Heavy Vehicles	0.9	1.2	2.6	0	1.2	7.5	1.7	0	0	2.0	1.2	3.0	1.7	0	2.4	5.8	1.5	1.8	0	2.3	1.9

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Groups Printed- Cars

	Hancock Street From North				East Squantum Street From East				Hancock Street From South				West Squantum Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	43	123	6	0	23	43	19	0	32	82	37	0	16	56	38	0	518
04:15 PM	44	121	7	0	6	56	10	0	23	83	35	0	27	64	38	0	514
04:30 PM	53	127	13	0	10	46	15	0	14	89	41	0	15	66	30	0	519
04:45 PM	48	95	6	0	17	56	14	0	23	81	45	0	22	59	36	0	502
Total	188	466	32	0	56	201	58	0	92	335	158	0	80	245	142	0	2053
05:00 PM	70	121	10	0	13	53	15	0	25	96	42	0	18	67	53	0	583
05:15 PM	50	116	9	0	5	64	24	0	19	100	50	0	18	67	56	0	578
05:30 PM	48	120	8	0	11	66	18	0	19	107	41	0	26	59	58	0	581
05:45 PM	56	118	11	0	8	48	19	0	19	86	41	0	19	77	46	0	548
Total	224	475	38	0	37	231	76	0	82	389	174	0	81	270	213	0	2290
Grand Total	412	941	70	0	93	432	134	0	174	724	332	0	161	515	355	0	4343
Apprch %	29	66.1	4.9	0	14.1	65.6	20.3	0	14.1	58.9	27	0	15.6	50	34.4	0	
Total %	9.5	21.7	1.6	0	2.1	9.9	3.1	0	4	16.7	7.6	0	3.7	11.9	8.2	0	

	Hancock Street From North					East Squantum Street From East					Hancock Street From South					West Squantum Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**70**	**121**	10	0	**201**	**13**	53	15	0	81	**25**	**96**	**42**	**0**	**163**	**18**	**67**	**53**	**0**	**138**	**583**
05:15 PM	50	116	9	0	175	5	64	**24**					**50**	0	**169**	18	67	56	0	141	578
05:30 PM	48	120	8	0	176	11	**66**			**95**	19	**107**				**26**		**58**		**143**	581
05:45 PM	56	118	**11**														**77**	46	0	142	548
Total Volume	224	475	38	0	737	37	231	76	0	344	82	389	174	0	645	81	270	213	0	564	2290
% App. Total	30.4	64.5	5.2	0		10.8	67.2	22.1	0		12.7	60.3	27	0		14.4	47.9	37.8	0		
PHF	.800	.981	.864	.000	.917	.712	.875	.792	.000	.905	.820	.909	.870	.000	.954	.779	.877	.918	.000	.986	.982

N/S: Hancock Street
E/W: E/W Squantum Street
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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File Name : 122931 HH
Site Code : 2011140.
Start Date : 6/5/2012
Page No : 1

Groups Printed- Heavy Vehicles

	Hancock Street From North				East Squantum Street From East				Hancock Street From South				West Squantum Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	0	2	0	0	0	3	1	0	1	1	0	0	0	0	0	0	8
04:15 PM	0	3	0	0	1	1	1	0	1	5	2	0	1	1	1	0	17
04:30 PM	0	1	0	0	1	1	1	0	1	2	0	0	0	0	1	0	8
04:45 PM	0	3	0	0	1	0	1	0	0	2	1	0	0	2	1	0	11
Total	0	9	0	0	3	5	4	0	3	10	3	0	1	3	3	0	44
05:00 PM	0	2	0	0	1	1	0	0	0	4	0	0	4	0	1	0	13
05:15 PM	1	3	1	0	1	0	0	0	1	4	1	0	0	1	0	0	13
05:30 PM	1	0	0	0	1	2	0	0	0	1	2	0	1	0	2	0	10
05:45 PM	0	1	0	0	0	1	0	0	0	3	0	0	0	3	1	0	9
Total	2	6	1	0	3	4	0	0	1	12	3	0	5	4	4	0	45
Grand Total	2	15	1	0	6	9	4	0	4	22	6	0	6	7	7	0	89
Apprch %	11.1	83.3	5.6	0	31.6	47.4	21.1	0	12.5	68.8	18.8	0	30	35	35	0	
Total %	2.2	16.9	1.1	0	6.7	10.1	4.5	0	4.5	24.7	6.7	0	6.7	7.9	7.9	0	

	Hancock Street From North					East Squantum Street From East					Hancock Street From South					West Squantum Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	**3**	0	0	**3**	**1**	**1**	**1**	**0**	**3**	**1**	**5**	**2**	0	**8**	1	1	**1**	**0**	**3**	**17**
04:30 PM	0	1	0	0	1	1	1	1	0	3	1	2	0	0	3	0	0	1	0	1	8
04:45 PM	0	3	0	0	3	1	0	1	0	2	0	2	1	0	3	0	**2**	1	0	3	11
05:00 PM	0	2	0	0	2	1	1	0	0	2	0	4	0	0	4	**4**				**5**	13
Total Volume	0	9	0	0	9	4	3	3	0	10	2	13	3	0	18	5	3	4	0	12	49
% App. Total	0	100	0	0		40	30	30	0		11.1	72.2	16.7	0		41.7	25	33.3	0		
PHF	.000	.750	.000	.000	.750	1.00	.750	.750	.000	.833	.500	.650	.375	.000	.563	.313	.375	1.00	.000	.600	.721

N/S: Hancock Street
E/W: E/W Squantum Street
City, State: Quincy, MA
Client: Howard Stein-Hudson/ M. Tremblay

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Groups Printed- Peds and Bicycles

	Hancock Street From North				East Squantum Street From East				Hancock Street From South				West Squantum Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	0	0	4	0	0	0	4	0	0	0	19	0	0	0	20	47
04:15 PM	0	0	0	15	0	0	0	15	0	0	0	16	0	1	0	10	57
04:30 PM	0	1	0	18	0	0	0	13	0	0	0	10	0	0	0	13	55
04:45 PM	0	1	0	37	0	0	0	21	0	1	0	7	0	0	0	13	80
Total	0	2	0	74	0	0	0	53	0	1	0	52	0	1	0	56	239
05:00 PM	0	0	0	29	0	0	0	19	0	0	0	15	0	0	0	19	82
05:15 PM	0	1	0	26	0	0	1	15	0	2	0	16	0	0	0	14	75
05:30 PM	0	0	0	28	0	0	0	16	0	0	0	12	0	0	0	15	71
05:45 PM	0	0	0	33	0	0	0	33	0	0	0	10	0	0	0	9	85
Total	0	1	0	116	0	0	1	83	0	2	0	53	0	0	0	57	313
Grand Total	0	3	0	190	0	0	1	136	0	3	0	105	0	1	0	113	552
Apprch %	0	1.6	0	98.4	0	0	0.7	99.3	0	2.8	0	97.2	0	0.9	0	99.1	
Total %	0	0.5	0	34.4	0	0	0.2	24.6	0	0.5	0	19	0	0.2	0	20.5	

	Hancock Street From North					East Squantum Street From East					Hancock Street From South					West Squantum Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	29	29	0	0	0	19	19	0	0	0	15	15	0	0	0	**19**	**19**	82
05:15 PM	0	**1**	0	26	27	0	0	**1**				**2**		**16**	**18**	0	0	0	14	14	75
05:30 PM	0	0	0	28	28	0	0	0	16	16	0	0	0	12	12	0	0	0	15	15	71
05:45 PM	0	0	0	**33**	**33**	0	0	0	**33**	**33**	0	0	0	10	10	0	0	0	9	9	**85**
Total Volume	0	1	0	116	117	0	0	1	83	84	0	2	0	53	55	0	0	0	57	57	313
% App. Total	0	0.9	0	99.1		0	0	1.2	98.8		0	3.6	0	96.4		0	0	0	100		
PHF	.000	.250	.000	.879	.886	.000	.000	.250	.629	.636	.000	.250	.000	.828	.764	.000	.000	.000	.750	.750	.921

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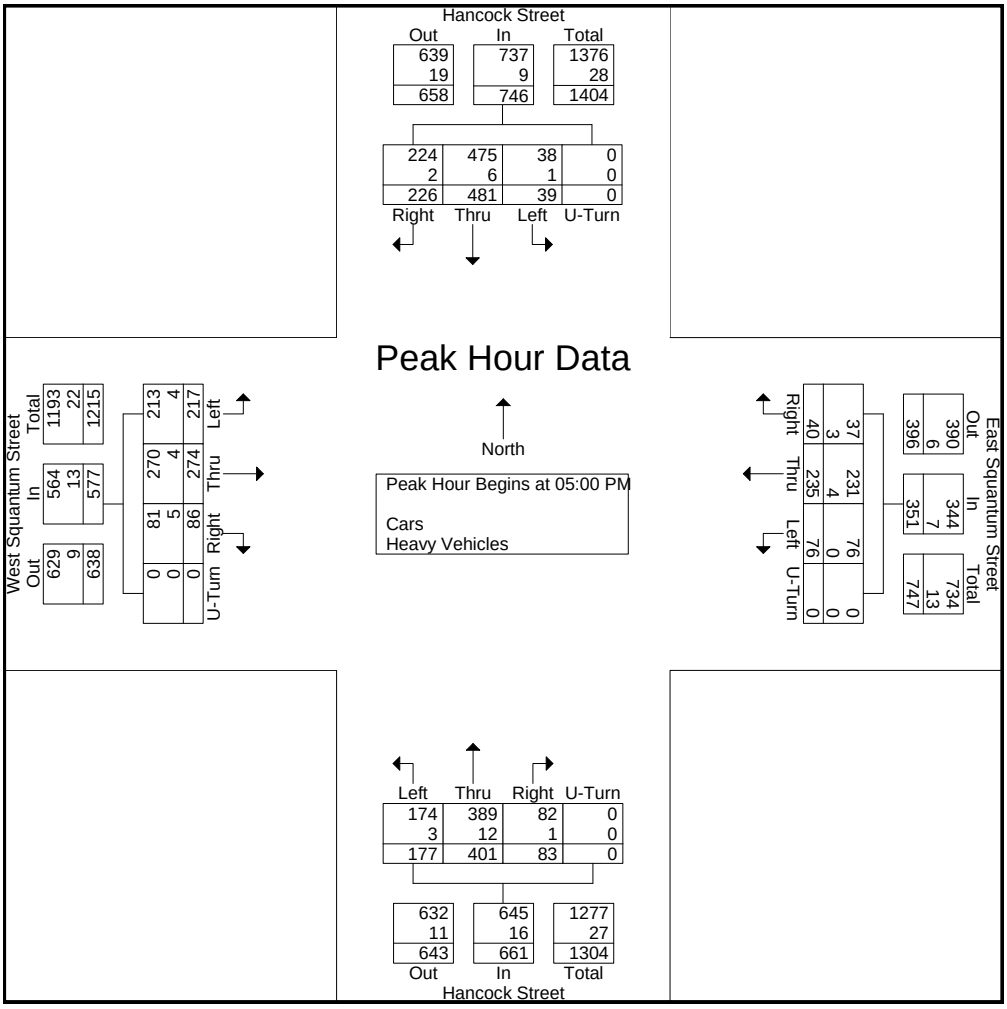
	Hancock Street From North					East Squantum Street From East					Hancock Street From South					West Squantum Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**70**	**123**	10	0	**203**	**14**	54	15	0	83	**25**	**100**	**42**	**0**	**167**	**22**	**67**	**54**	**0**	**143**	**596**
05:15 PM	51	119	10	0	180	6	64	**24**					**51**	0	**175**	18	68	56	0	142	591
05:30 PM	49	120	8	0	177	12	**68**			**98**	19	**108**				**27**		**60**		**146**	591
05:45 PM	56	119	**11**														**80**	47	0	146	557
Total Volume	226	481	39	0	746	40	235	76	0	351	83	401	177	0	661	86	274	217	0	577	2335
% App. Total	30.3	64.5	5.2	0		11.4	67	21.7	0		12.6	60.7	26.8	0		14.9	47.5	37.6	0		
PHF	.807	.978	.886	.000	.919	.714	.864	.792	.000	.895	.830	.928	.868	.000	.944	.796	.856	.904	.000	.988	.979
Cars	224	475	38	0	737	37	231	76	0	344	82	389	174	0	645	81	270	213	0	564	2290
% Cars	99.1	98.8	97.4	0	98.8	92.5	98.3	100	0	98.0	98.8	97.0	98.3	0	97.6	94.2	98.5	98.2	0	97.7	98.1
Heavy Vehicles	2	6	1	0	9	3	4	0	0	7	1	12	3	0	16	5	4	4	0	13	45
% Heavy Vehicles	0.9	1.2	2.6	0	1.2	7.5	1.7	0	0	2.0	1.2	3.0	1.7	0	2.4	5.8	1.5	1.8	0	2.3	1.9



SECTION I - CONTINUOUS COUNTING STATION MONTHLY AVERAGE DAILY TRAFFIC

STATION 691 - QUINCY - RTE.I-93 - NORTH OF RTE.28 -- 9 Miles from Site

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	**AVERAGE**	**PEAK MONTH-- JUNE**
09	173,000	175,000	177,697	194,334	196,834	199,477	196,208	194,125	190,885	186,291	176,509	174,000	186,197	186,197	199,477
% from average	-7%	-6%	-5%	4%	6%	7%	5%	4%	3%	0%	-5%	-7%	0%		
% from peak	-13%	-12%	-11%	-3%	-1%	0%	-2%	-3%	-4%	-7%	-12%	-13%	-7%		

ITALICS = ESTIMATED DATA

MADT

Marina Bay "Cut Through"

Not to scale.

Appendix B. Capacity Analysis Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	12	12	12	12	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.994				0.850
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1636	3421	1507	1805	1881	1599	0	1774	0	1736	1827	1538
Flt Permitted	0.950			0.085				0.911		0.182		
Satd. Flow (perm)	1636	3421	1507	162	1881	1599	0	1626	0	332	1827	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			194		1				68
Headway Factor	1.09	1.04	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3332			1043			1141			2039	
Travel Time (s)		75.7			23.7			25.9			46.3	
Volume (vph)	139	305	14	82	546	380	28	175	8	288	248	38
Peak Hour Factor	0.78	0.89	0.39	0.56	0.89	0.86	0.78	0.74	0.67	0.77	0.82	0.56
Heavy Vehicles (%)	3%	2%	0%	0%	1%	1%	0%	7%	0%	4%	4%	5%
Adj. Flow (vph)	178	343	36	146	613	442	36	236	12	374	302	68
Lane Group Flow (vph)	178	343	36	146	613	442	0	284	0	374	302	68
Turn Type	Prot		custom	Perm		Free	Perm			pm+pt		custom
Protected Phases	5	1 5	5		1			4		3	3 4	3
Permitted Phases			1	1		Free	4			3 4		4
Detector Phases	5	1 5	5	1	1		4	4		3	3 4	3
Minimum Initial (s)	6.0		6.0	15.0	15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	20.0		20.0	22.0	22.0		20.0	20.0		12.0		12.0
Total Split (s)	25.0	76.0	25.0	51.0	51.0	0.0	26.0	26.0	0.0	16.0	42.0	16.0
Total Split (%)	17.0%	51.7%	17.0%	34.7%	34.7%	0.0%	17.7%	17.7%	0.0%	10.9%	28.6%	10.9%
Maximum Green (s)	20.0		20.0	45.0	45.0		20.0	20.0		10.0		10.0
Yellow Time (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0		1.0	2.0	2.0		2.0	2.0		2.0		2.0
Lead/Lag				Lead	Lead		Lag	Lag		Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0		2.0	3.0	3.0		2.0	2.0		2.0		2.0
Recall Mode	None		None	Min	Min		None	None		None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	17.3	68.9	68.9	47.5	47.5	120.2		22.3		34.4	38.4	38.4
Actuated g/C Ratio	0.14	0.57	0.57	0.40	0.40	1.00		0.19		0.29	0.32	0.32
v/c Ratio	0.75	0.17	0.04	2.28	0.82	0.28		0.94		1.58	0.52	0.13
Control Delay	70.7	13.6	5.1	641.4	44.8	0.4		88.1		307.8	39.6	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	70.7	13.6	5.1	641.4	44.8	0.4		88.1		307.8	39.6	9.1
LOS	E	B	A	F	D	A		F		F	D	A

Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Lane Width (ft)	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	7.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	20%
Maximum Green (s)	24.0
Yellow Time (s)	2.0
All-Red Time (s)	3.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		31.3			101.0			88.1			171.7	
Approach LOS		C			F			F			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 147	
Actuated Cycle Length: 120.2	
Natural Cycle: 125	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.28	
Intersection Signal Delay: 104.6	Intersection LOS: F
Intersection Capacity Utilization 77.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Quincy Shore Drive & East Squantum Street

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Sign Control	Stop		Free				Free
Grade	0%		0%				0%
Volume (veh/h)	9	2	7	5	1	0	9
Peak Hour Factor	0.56	0.50	0.58	0.42	0.25	0.25	0.75
Hourly flow rate (vph)	16	4	12	12	0	0	12
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	30	18			0	24	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	30	18			0	24	
tC, single (s)	6.4	6.2			0.0	4.1	
tC, 2 stage (s)							
tF (s)	3.5	3.3			0.0	2.2	
p0 queue free %	98	100			0	100	
cM capacity (veh/h)	989	1066			0	1604	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	20	24	12
Volume Left	16	0	0
Volume Right	4	12	0
cSH	1004	1700	1604
Volume to Capacity	0.02	0.01	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.7	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.7	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	1	17	25	0	1	16	172	6	0	46	0
Peak Hour Factor	0.92	0.25	0.57	0.78	0.92	0.25	0.67	0.74	0.38	0.92	0.68	0.92
Hourly flow rate (vph)	0	4	30	32	0	4	24	232	16	0	68	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	360	364	68	358	356	240	68			248		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	360	364	68	358	356	240	68			248		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	97	94	100	100	98			100		
cM capacity (veh/h)	586	559	985	573	561	804	1547			1318		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	4	30	36	272	68
Volume Left	0	0	32	24	0
Volume Right	0	30	4	16	0
cSH	559	985	592	1547	1318
Volume to Capacity	0.01	0.03	0.06	0.02	0.00
Queue Length 95th (ft)	1	2	5	1	0
Control Delay (s)	11.5	8.8	11.5	0.8	0.0
Lane LOS	B	A	B	A	
Approach Delay (s)	9.1		11.5	0.8	0.0
Approach LOS	A		B		

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		

MOVEMENT SUMMARY

Site: Existing_AM

Victory Road Roundabout
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Victory Road											
3	L	300	2.0	0.536	10.4	LOS B	3.3	84.7	0.40	0.76	25.1
8	T	233	1.0	0.536	10.4	LOS B	3.3	84.7	0.40	0.46	27.6
Approach		533	1.5	0.536	10.4	LOS B	3.3	84.7	0.40	0.63	26.1
North: Victory Road											
7	L	24	0.0	0.254	7.3	LOS A	1.0	25.4	0.45	0.94	25.9
4	T	84	2.0	0.254	7.3	LOS A	1.0	25.4	0.45	0.58	29.5
14	R	96	6.0	0.254	7.3	LOS A	1.0	25.4	0.45	0.66	28.9
Approach		203	3.6	0.254	7.3	LOS A	1.0	25.4	0.45	0.66	28.7
West: Seaport Drive											
5	L	84	5.7	0.218	6.1	LOS A	0.8	21.8	0.26	0.74	26.9
12	R	116	13.0	0.218	6.1	LOS A	0.8	21.8	0.26	0.50	29.5
Approach		200	9.9	0.218	6.1	LOS A	0.8	21.8	0.26	0.60	28.3
All Vehicles		937	3.8	0.536	8.8	LOS A	3.3	84.7	0.38	0.63	27.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.

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Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Sign Control		Stop				Stop			Free			Free
Grade		0%				0%			0%			0%
Volume (veh/h)	0	1	1	40	457	3	17	0	36	89	6	4
Peak Hour Factor	0.92	0.25	0.25	0.43	0.80	0.75	0.61	0.92	0.69	0.89	0.50	0.50
Hourly flow rate (vph)	0	4	4	0	571	4	28	0	52	100	12	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None				None						
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	164	184	8	0	140	134	102	8			152	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	164	184	8	0	140	134	102	8			152	
tC, single (s)	7.1	6.5	6.2	0.0	7.1	6.8	6.3	4.1			4.9	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.5	4.3	3.4	2.2			2.9	
p0 queue free %	100	99	100	0	30	99	97	100			99	
cM capacity (veh/h)	767	706	1080	0	816	695	942	1612			1055	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	603	152	20
Volume Left	0	571	0	12
Volume Right	4	28	100	0
cSH	853	820	1612	1055
Volume to Capacity	0.01	0.74	0.00	0.01
Queue Length 95th (ft)	1	167	0	1
Control Delay (s)	9.3	20.5	0.0	5.1
Lane LOS	A	C		A
Approach Delay (s)	9.3	20.5	0.0	5.1
Approach LOS	A	C		

Intersection Summary			
Average Delay	16.0		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SBR
Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	0
Peak Hour Factor	0.92
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	

Direction, Lane #

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	15	235	379	290	364	95
Peak Hour Factor	0.75	0.85	0.85	0.76	0.74	0.70
Hourly flow rate (vph)	20	276	446	382	492	136
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1833	560	628			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1833	560	628			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	52	47	53			
cM capacity (veh/h)	42	524	954			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	20	276	446	382	628
Volume Left	20	0	446	0	0
Volume Right	0	276	0	0	136
cSH	42	524	954	1700	1700
Volume to Capacity	0.48	0.53	0.47	0.22	0.37
Queue Length 95th (ft)	42	76	63	0	0
Control Delay (s)	153.8	19.3	12.0	0.0	0.0
Lane LOS	F	C	B		
Approach Delay (s)	28.4		6.5		0.0
Approach LOS	D				

Intersection Summary			
Average Delay	7.9		
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations							
Sign Control	Free			Free		Stop	
Grade	0%			0%		0%	
Volume (veh/h)	152	419	301	19	3	33	5
Peak Hour Factor	0.81	0.87	0.85	0.68	0.75	0.63	0.63
Hourly flow rate (vph)	188	482	354	28	0	52	8
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type						None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume			669		0	1165	428
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			669		0	1165	428
tC, single (s)			4.1		0.0	6.4	6.2
tC, 2 stage (s)							
tF (s)			2.2		0.0	3.5	3.3
p0 queue free %			62		0	60	99
cM capacity (veh/h)			921		0	132	631

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	669	382	60
Volume Left	0	354	52
Volume Right	482	0	8
cSH	1700	921	148
Volume to Capacity	0.39	0.38	0.41
Queue Length 95th (ft)	0	46	45
Control Delay (s)	0.0	10.8	45.3
Lane LOS		B	E
Approach Delay (s)	0.0	10.8	45.3
Approach LOS			E

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	19	66	389	78	5	60
Peak Hour Factor	0.92	0.50	0.88	0.53	0.92	0.65
Hourly flow rate (vph)	21	132	442	147	5	92
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	619	516			442	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	619	516			442	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	77			100	
cM capacity (veh/h)	450	563			1118	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	153	589	98
Volume Left	21	0	5
Volume Right	132	147	0
cSH	545	1700	1118
Volume to Capacity	0.28	0.35	0.00
Queue Length 95th (ft)	29	0	0
Control Delay (s)	14.2	0.0	0.5
Lane LOS	B		A
Approach Delay (s)	14.2	0.0	0.5
Approach LOS	B		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	7	0	0	8	146	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	0	0	9	159	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			8		16	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			8		16	8
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		84	97
cM capacity (veh/h)			1613		1002	1075

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	8	9	189
Volume Left	0	0	159
Volume Right	0	0	30
cSH	1700	1700	1013
Volume to Capacity	0.00	0.01	0.19
Queue Length 95th (ft)	0	0	17
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay	8.6		
Intersection Capacity Utilization	19.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	7	21	25	129	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	23	27	140	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			30		214	19
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			30		214	19
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1582		761	1059

Direction, Lane #	EB 1	WB 1
Volume Total	30	167
Volume Left	0	27
Volume Right	23	0
cSH	1700	1582
Volume to Capacity	0.02	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	1.3
Lane LOS		A
Approach Delay (s)	0.0	1.3
Approach LOS		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	18.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
10: Victory Road & Marina Drive

1/18/2013

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	3	159	430	44	91	18
Peak Hour Factor	0.38	0.86	0.86	0.65	0.85	0.80
Hourly flow rate (vph)	8	185	500	68	107	22

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	193	568	130
Volume Left (vph)	8	0	107
Volume Right (vph)	0	68	23
Hadj (s)	0.14	-0.06	0.06
Departure Headway (s)	5.1	4.5	5.7
Degree Utilization, x	0.27	0.71	0.21
Capacity (veh/h)	669	785	558
Control Delay (s)	10.0	17.6	10.2
Approach Delay (s)	10.0	17.6	10.2
Approach LOS	A	C	B

Intersection Summary			
Delay	14.8		
HCM Level of Service	B		
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	3	159	430	44	91	18
Peak Hour Factor	0.38	0.86	0.86	0.65	0.85	0.80
Hourly flow rate (vph)	8	185	500	68	107	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage veh)					1	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	568				735	534
vC1, stage 1 conf vol					534	
vC2, stage 2 conf vol					201	
vCu, unblocked vol	568				735	534
tC, single (s)	4.8				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.8				3.5	3.3
p0 queue free %	99				78	96
cM capacity (veh/h)	749				481	550

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	193	568	130
Volume Left	8	0	107
Volume Right	0	68	22
cSH	749	1700	491
Volume to Capacity	0.01	0.33	0.26
Queue Length 95th (ft)	1	0	26
Control Delay (s)	0.5	0.0	14.9
Lane LOS	A		B
Approach Delay (s)	0.5	0.0	14.9
Approach LOS			B

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		

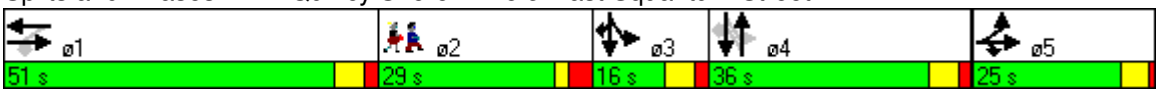
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	12	12	12	12	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.987				0.850
Flt Protected	0.950				0.997			0.991		0.950		
Satd. Flow (prot)	1652	3490	1507	0	3587	1583	0	1834	0	1805	1827	1599
Flt Permitted	0.950				0.569			0.908		0.360		
Satd. Flow (perm)	1652	3490	1507	0	2047	1583	0	1681	0	684	1827	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			33			196		3				151
Headway Factor	1.09	1.04	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3332			1043			1141			2039	
Travel Time (s)		75.7			23.7			25.9			46.3	
Volume (vph)	145	1005	30	18	533	221	35	163	18	332	167	112
Peak Hour Factor	0.82	0.93	0.75	0.56	0.96	0.92	0.80	0.91	0.75	0.80	0.93	0.74
Heavy Vehicles (%)	2%	0%	0%	6%	0%	2%	0%	1%	6%	0%	4%	1%
Adj. Flow (vph)	177	1081	40	32	555	240	44	179	24	415	180	151
Lane Group Flow (vph)	177	1081	40	0	587	240	0	247	0	415	180	151
Turn Type	Prot		custom	Perm		Free	Perm			pm+pt		custom
Protected Phases	5	1 5	5		1			4		3	3 4	3
Permitted Phases			1	1		Free	4			3 4		4
Detector Phases	5	1 5	5	1	1		4	4		3	3 4	3
Minimum Initial (s)	6.0		6.0	15.0	15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	20.0		20.0	22.0	22.0		20.0	20.0		12.0		12.0
Total Split (s)	25.0	76.0	25.0	51.0	51.0	0.0	36.0	36.0	0.0	16.0	52.0	16.0
Total Split (%)	15.9%	48.4%	15.9%	32.5%	32.5%	0.0%	22.9%	22.9%	0.0%	10.2%	33.1%	10.2%
Maximum Green (s)	20.0		20.0	45.0	45.0		30.0	30.0		10.0		10.0
Yellow Time (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0		1.0	2.0	2.0		2.0	2.0		2.0		2.0
Lead/Lag				Lead	Lead		Lag	Lag		Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0		2.0	3.0	3.0		2.0	2.0		2.0		2.0
Recall Mode	None		None	Min	Min		None	None		None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	21.0	69.7	69.7		44.6	127.6		23.4		35.9	40.1	40.1
Actuated g/C Ratio	0.16	0.55	0.55		0.35	1.00		0.18		0.28	0.31	0.31
v/c Ratio	0.65	0.57	0.05		0.82	0.15		0.79		1.37	0.31	0.25
Control Delay	67.0	23.9	8.8		51.4	0.2		70.5		220.1	38.0	6.8
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	67.0	23.9	8.8		51.4	0.2		70.5		220.1	38.0	6.8
LOS	E	C	A		D	A		E		F	D	A

Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Lane Width (ft)	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	7.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	18%
Maximum Green (s)	24.0
Yellow Time (s)	2.0
All-Red Time (s)	3.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		29.3			36.5			70.5			133.0	
Approach LOS		C			D			E			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 157	
Actuated Cycle Length: 127.6	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.37	
Intersection Signal Delay: 59.3	Intersection LOS: E
Intersection Capacity Utilization 86.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Quincy Shore Drive & East Squantum Street



Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Sign Control	Stop		Free				Free
Grade	0%		0%				0%
Volume (veh/h)	25	3	19	4	1	5	23
Peak Hour Factor	0.52	0.38	0.79	0.50	0.25	0.42	0.72
Hourly flow rate (vph)	48	8	24	8	0	12	32
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	84	28			0	32	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	84	28			0	32	
tC, single (s)	6.4	6.2			0.0	4.1	
tC, 2 stage (s)							
tF (s)	3.5	3.3			0.0	2.2	
p0 queue free %	95	99			0	99	
cM capacity (veh/h)	916	1053			0	1593	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	56	32	44
Volume Left	48	0	12
Volume Right	8	8	0
cSH	933	1700	1593
Volume to Capacity	0.06	0.02	0.01
Queue Length 95th (ft)	5	0	1
Control Delay (s)	9.1	0.0	2.0
Lane LOS	A		A
Approach Delay (s)	9.1	0.0	2.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	16.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	45	15	0	0	23	130	31	1	189	0
Peak Hour Factor	0.38	0.25	0.62	0.69	0.92	0.25	0.92	0.90	0.61	0.25	0.72	0.92
Hourly flow rate (vph)	5	0	73	22	0	0	25	144	51	4	262	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	490	516	262	490	490	170	262			195		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	490	516	262	490	490	170	262			195		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	91	95	100	100	98			100		
cM capacity (veh/h)	483	456	781	439	471	879	1313			1378		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	5	73	22	220	266
Volume Left	5	0	22	25	4
Volume Right	0	73	0	51	0
cSH	483	781	439	1313	1378
Volume to Capacity	0.01	0.09	0.05	0.02	0.00
Queue Length 95th (ft)	1	8	4	1	0
Control Delay (s)	12.5	10.1	13.6	1.0	0.1
Lane LOS	B	B	B	A	A
Approach Delay (s)	10.2		13.6	1.0	0.1
Approach LOS	B		B		

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		

MOVEMENT SUMMARY

Site: Existing_PM

Victory Road Roundabout
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Victory Road											
3	L	52	4.0	0.180	5.3	LOS A	0.7	17.9	0.25	0.85	27.5
8	T	127	0.0	0.180	5.3	LOS A	0.7	17.9	0.25	0.41	31.0
Approach		179	1.2	0.180	5.3	LOS A	0.7	17.9	0.25	0.54	29.8
North: Victory Road											
7	L	3	0.0	0.344	7.0	LOS A	1.6	41.7	0.22	0.97	25.9
4	T	243	1.0	0.344	7.0	LOS A	1.6	41.7	0.22	0.40	29.9
14	R	108	8.0	0.344	7.0	LOS A	1.6	41.7	0.22	0.52	29.1
Approach		354	3.1	0.344	7.0	LOS A	1.6	41.7	0.22	0.44	29.6
West: Seaport Drive											
5	L	108	1.9	0.226	6.6	LOS A	0.9	22.3	0.39	0.78	26.6
12	R	84	6.0	0.226	6.6	LOS A	0.9	22.3	0.39	0.59	29.1
Approach		192	3.7	0.226	6.6	LOS A	0.9	22.3	0.39	0.69	27.6
All Vehicles		725	2.8	0.344	6.5	LOS A	1.6	41.7	0.28	0.53	29.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.

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Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Sign Control		Stop				Stop			Free			Free
Grade		0%				0%			0%			0%
Volume (veh/h)	0	0	2	1	131	0	5	3	15	164	16	72
Peak Hour Factor	0.92	0.25	0.50	0.25	0.84	0.25	0.63	0.38	0.63	0.79	0.44	0.67
Hourly flow rate (vph)	0	0	4	0	156	0	8	8	24	208	36	107
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None				None						
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	334	429	109	0	330	328	128	111			231	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	334	429	109	0	330	328	128	111			231	
tC, single (s)	7.1	6.5	6.2	0.0	7.1	6.5	7.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.5	4.0	4.2	2.2			2.2	
p0 queue free %	100	100	100	0	74	100	99	99			97	
cM capacity (veh/h)	598	504	950	0	604	575	715	1491			1348	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	164	239	148
Volume Left	0	156	8	36
Volume Right	4	8	208	4
cSH	950	609	1491	1348
Volume to Capacity	0.00	0.27	0.01	0.03
Queue Length 95th (ft)	0	27	0	2
Control Delay (s)	8.8	13.1	0.3	2.1
Lane LOS	A	B	A	A
Approach Delay (s)	8.8	13.1	0.3	2.1
Approach LOS	A	B		

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SBR
Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	1
Peak Hour Factor	0.25
Hourly flow rate (vph)	4
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	

Direction, Lane #

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	34	252	152	334	271	26
Peak Hour Factor	0.85	0.71	0.90	0.94	0.85	0.65
Hourly flow rate (vph)	40	355	169	355	319	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1032	339	359			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1032	339	359			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	50	86			
cM capacity (veh/h)	221	703	1205			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	40	355	169	355	359
Volume Left	40	0	169	0	0
Volume Right	0	355	0	0	40
cSH	221	703	1205	1700	1700
Volume to Capacity	0.18	0.50	0.14	0.21	0.21
Queue Length 95th (ft)	16	72	12	0	0
Control Delay (s)	24.9	15.2	8.5	0.0	0.0
Lane LOS	C	C	A		
Approach Delay (s)	16.2		2.7		0.0
Approach LOS	C				

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations							
Sign Control	Free			Free		Stop	
Grade	0%			0%		0%	
Volume (veh/h)	178	78	125	98	5	29	13
Peak Hour Factor	0.71	0.93	0.63	0.74	0.42	0.73	0.65
Hourly flow rate (vph)	251	84	198	132	0	40	20
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type						None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume			335		0	822	293
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			335		0	822	293
tC, single (s)			4.1		0.0	6.4	6.3
tC, 2 stage (s)							
tF (s)			2.2		0.0	3.5	3.4
p0 queue free %			84		0	86	97
cM capacity (veh/h)			1208		0	290	733

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	335	331	60
Volume Left	0	198	40
Volume Right	84	0	20
cSH	1700	1208	363
Volume to Capacity	0.20	0.16	0.16
Queue Length 95th (ft)	0	15	15
Control Delay (s)	0.0	5.7	16.9
Lane LOS		A	C
Approach Delay (s)	0.0	5.7	16.9
Approach LOS			C

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	28	108	172	97	16	112
Peak Hour Factor	0.50	0.50	0.89	0.78	0.92	0.74
Hourly flow rate (vph)	56	216	193	124	17	151
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	442	255			193	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	442	255			193	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	73			99	
cM capacity (veh/h)	570	788			1380	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	272	318	169
Volume Left	56	0	17
Volume Right	216	124	0
cSH	730	1700	1380
Volume to Capacity	0.37	0.19	0.01
Queue Length 95th (ft)	43	0	1
Control Delay (s)	12.8	0.0	0.9
Lane LOS	B		A
Approach Delay (s)	12.8	0.0	0.9
Approach LOS	B		

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	5	0	0	34	75	57
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	0	37	82	62
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			5		42	5
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			5		42	5
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		92	94
cM capacity (veh/h)			1616		969	1078

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	5	37	143
Volume Left	0	0	82
Volume Right	0	0	62
cSH	1700	1700	1013
Volume to Capacity	0.00	0.02	0.14
Queue Length 95th (ft)	0	0	12
Control Delay (s)	0.0	0.0	9.1
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.1
Approach LOS			A

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	5	139	51	68	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	151	55	74	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			157		266	81
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			157		266	81
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		100	100
cM capacity (veh/h)			1423		695	979

Direction, Lane #	EB 1	WB 1
Volume Total	157	129
Volume Left	0	55
Volume Right	151	0
cSH	1700	1423
Volume to Capacity	0.09	0.04
Queue Length 95th (ft)	0	3
Control Delay (s)	0.0	3.4
Lane LOS		A
Approach Delay (s)	0.0	3.4
Approach LOS		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	26	251	137	43	35	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	273	149	47	38	9

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	301	196	47
Volume Left (vph)	28	0	38
Volume Right (vph)	0	47	9
Hadj (s)	0.05	-0.11	0.09
Departure Headway (s)	4.3	4.2	5.1
Degree Utilization, x	0.36	0.23	0.07
Capacity (veh/h)	827	824	647
Control Delay (s)	9.6	8.5	8.4
Approach Delay (s)	9.6	8.5	8.4
Approach LOS	A	A	A

Intersection Summary			
Delay	9.1		
HCM Level of Service	A		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	26	251	137	43	35	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	273	149	47	38	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage veh)					1	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	196				502	172
vC1, stage 1 conf vol					172	
vC2, stage 2 conf vol					329	
vCu, unblocked vol	196				502	172
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				94	99
cM capacity (veh/h)	1377				586	871

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	301	196	47
Volume Left	28	0	38
Volume Right	0	47	9
cSH	1377	1700	624
Volume to Capacity	0.02	0.12	0.07
Queue Length 95th (ft)	2	0	6
Control Delay (s)	0.9	0.0	11.2
Lane LOS	A		B
Approach Delay (s)	0.9	0.0	11.2
Approach LOS			B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

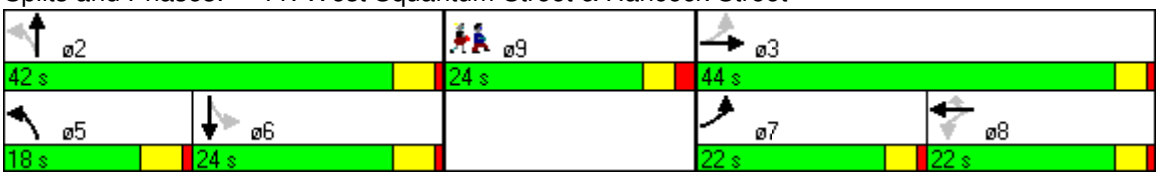
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	11	11	16	12	12	12	12	11	12
Storage Length (ft)	0		0	0		45	0		0	0		0
Storage Lanes	1		0	1		1	1		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.984				0.850		0.978			0.934	
Flt Protected	0.950			0.950			0.950				0.996	
Satd. Flow (prot)	1711	1676	0	1572	1783	1794	1736	1827	0	0	3136	0
Flt Permitted	0.182			0.553			0.255				0.643	
Satd. Flow (perm)	328	1676	0	915	1783	1794	466	1827	0	0	2024	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				61		9			157	
Headway Factor	1.04	1.09	1.00	1.04	1.04	0.85	1.00	1.00	1.00	1.00	1.04	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		414			1547			386			1051	
Travel Time (s)		9.4			35.2			8.8			23.9	
Volume (vph)	303	264	28	37	246	122	261	468	53	25	165	159
Peak Hour Factor	0.94	0.85	0.78	0.71	0.95	0.85	0.88	0.91	0.60	0.69	0.86	0.90
Heavy Vehicles (%)	2%	3%	14%	11%	3%	2%	4%	1%	6%	4%	3%	4%
Adj. Flow (vph)	322	311	36	52	259	144	297	514	88	36	192	177
Lane Group Flow (vph)	322	347	0	52	259	144	297	602	0	0	405	0
Turn Type	pm+pt			Perm		Perm	pm+pt			Perm		
Protected Phases	7	3			8		5	2			6	
Permitted Phases	3			8		8	2			6		
Detector Phases	7	3		8	8	8	5	2		6	6	
Minimum Initial (s)	7.0	10.0		7.0	7.0	7.0	7.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	15.0		12.0	12.0	12.0	12.0	15.0		15.0	15.0	
Total Split (s)	22.0	44.0	0.0	22.0	22.0	22.0	18.0	42.0	0.0	24.0	24.0	0.0
Total Split (%)	20.0%	40.0%	0.0%	20.0%	20.0%	20.0%	16.4%	38.2%	0.0%	21.8%	21.8%	0.0%
Maximum Green (s)	18.0	40.0		18.0	18.0	18.0	13.0	37.0		19.0	19.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	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	
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes	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	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	39.6	39.6		17.6	17.6	17.6	57.6	57.6			39.4	
Actuated g/C Ratio	0.36	0.36		0.16	0.16	0.16	0.52	0.52			0.36	
v/c Ratio	0.93	0.57		0.36	0.91	0.43	0.73	0.63			0.49	
Control Delay	65.0	32.2		48.7	80.7	28.1	30.2	24.4			20.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	

Lane Group	ø9
Lane Configurations	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phases	
Minimum Initial (s)	4.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	22%
Maximum Green (s)	19.0
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	12.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	65.0	32.2		48.7	80.7	28.1	30.2	24.4			20.7	
LOS	E	C		D	F	C	C	C			C	
Approach Delay		48.0			60.4			26.3			20.7	
Approach LOS		D			E			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 37.7	Intersection LOS: D
Intersection Capacity Utilization 81.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 11: West Squantum Street & Hancock Street



Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Sign Control	Stop		Free				Free
Grade	0%		0%				0%
Volume (veh/h)	9	2	7	5	1	0	9
Peak Hour Factor	0.56	0.50	0.58	0.42	0.25	0.25	0.75
Hourly flow rate (vph)	16	4	12	12	0	0	12
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	30	18			0	24	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	30	18			0	24	
tC, single (s)	6.4	6.2			0.0	4.1	
tC, 2 stage (s)							
tF (s)	3.5	3.3			0.0	2.2	
p0 queue free %	98	100			0	100	
cM capacity (veh/h)	989	1066			0	1604	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	20	24	12
Volume Left	16	0	0
Volume Right	4	12	0
cSH	1004	1700	1604
Volume to Capacity	0.02	0.01	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.7	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.7	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	1	17	26	0	1	16	176	6	0	47	0
Peak Hour Factor	0.92	0.25	0.57	0.78	0.92	0.25	0.67	0.74	0.38	0.92	0.68	0.92
Hourly flow rate (vph)	0	4	30	33	0	4	24	238	16	0	69	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	367	371	69	365	363	246	69			254		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	367	371	69	365	363	246	69			254		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	97	94	100	99	98			100		
cM capacity (veh/h)	580	554	983	567	556	798	1545			1312		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	4	30	37	278	69
Volume Left	0	0	33	24	0
Volume Right	0	30	4	16	0
cSH	554	983	585	1545	1312
Volume to Capacity	0.01	0.03	0.06	0.02	0.00
Queue Length 95th (ft)	1	2	5	1	0
Control Delay (s)	11.5	8.8	11.6	0.8	0.0
Lane LOS	B	A	B	A	
Approach Delay (s)	9.1		11.6	0.8	0.0
Approach LOS	A		B		

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

MOVEMENT SUMMARY

Site: No Build_AM

Victory Road Roundabout
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Victory Road											
3	L	308	2.0	0.551	10.8	LOS B	3.5	89.1	0.42	0.76	24.9
8	T	239	1.0	0.551	10.8	LOS B	3.5	89.1	0.42	0.46	27.4
Approach		547	1.5	0.551	10.8	LOS B	3.5	89.1	0.42	0.63	25.9
North: Victory Road											
7	L	24	0.0	0.262	7.5	LOS A	1.0	26.3	0.46	0.95	25.8
4	T	86	2.0	0.262	7.5	LOS A	1.0	26.3	0.46	0.58	29.4
14	R	99	6.0	0.262	7.5	LOS A	1.0	26.3	0.46	0.67	28.8
Approach		208	3.7	0.262	7.5	LOS A	1.0	26.3	0.46	0.67	28.6
West: Seaport Drive											
5	L	87	5.7	0.225	6.2	LOS A	0.8	22.6	0.26	0.74	26.8
12	R	119	13.0	0.225	6.2	LOS A	0.8	22.6	0.26	0.50	29.4
Approach		206	9.9	0.225	6.2	LOS A	0.8	22.6	0.26	0.60	28.2
All Vehicles		961	3.8	0.551	9.1	LOS A	3.5	89.1	0.39	0.63	26.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.

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Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Sign Control		Stop				Stop			Free			Free
Grade		0%				0%			0%			0%
Volume (veh/h)	0	1	1	41	469	3	17	0	37	91	6	4
Peak Hour Factor	0.92	0.25	0.25	0.43	0.80	0.75	0.61	0.92	0.69	0.89	0.50	0.50
Hourly flow rate (vph)	0	4	4	0	586	4	28	0	54	102	12	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None				None						
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	167	188	8	0	143	137	105	8			156	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	167	188	8	0	143	137	105	8			156	
tC, single (s)	7.1	6.5	6.2	0.0	7.1	6.8	6.3	4.1			4.9	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.5	4.3	3.4	2.2			2.9	
p0 queue free %	100	99	100	0	28	99	97	100			99	
cM capacity (veh/h)	764	702	1080	0	813	693	939	1612			1051	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	618	156	20
Volume Left	0	586	0	12
Volume Right	4	28	102	0
cSH	851	817	1612	1051
Volume to Capacity	0.01	0.76	0.00	0.01
Queue Length 95th (ft)	1	181	0	1
Control Delay (s)	9.3	21.7	0.0	5.1
Lane LOS	A	C		A
Approach Delay (s)	9.3	21.7	0.0	5.1
Approach LOS	A	C		

Intersection Summary			
Average Delay	17.0		
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SBR
Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	0
Peak Hour Factor	0.92
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	

Direction, Lane #

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	15	241	389	297	373	97
Peak Hour Factor	0.75	0.85	0.85	0.76	0.74	0.70
Hourly flow rate (vph)	20	284	458	391	504	139
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1879	573	643			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1879	573	643			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	47	45	51			
cM capacity (veh/h)	38	515	942			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	20	284	458	391	643
Volume Left	20	0	458	0	0
Volume Right	0	284	0	0	139
cSH	38	515	942	1700	1700
Volume to Capacity	0.53	0.55	0.49	0.23	0.38
Queue Length 95th (ft)	46	82	68	0	0
Control Delay (s)	179.4	20.2	12.4	0.0	0.0
Lane LOS	F	C	B		
Approach Delay (s)	30.7		6.7		0.0
Approach LOS	D				

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations							
Sign Control	Free			Free		Stop	
Grade	0%			0%		0%	
Volume (veh/h)	156	430	309	19	3	34	5
Peak Hour Factor	0.81	0.87	0.85	0.68	0.75	0.63	0.63
Hourly flow rate (vph)	193	494	364	28	0	54	8
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type						None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume			687		0	1195	440
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			687		0	1195	440
tC, single (s)			4.1		0.0	6.4	6.2
tC, 2 stage (s)							
tF (s)			2.2		0.0	3.5	3.3
p0 queue free %			60		0	56	99
cM capacity (veh/h)			907		0	123	622

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	687	391	62
Volume Left	0	364	54
Volume Right	494	0	8
cSH	1700	907	138
Volume to Capacity	0.40	0.40	0.45
Queue Length 95th (ft)	0	49	51
Control Delay (s)	0.0	11.1	51.0
Lane LOS		B	F
Approach Delay (s)	0.0	11.1	51.0
Approach LOS			F

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	19	68	399	80	5	62
Peak Hour Factor	0.92	0.50	0.88	0.53	0.92	0.65
Hourly flow rate (vph)	21	136	453	151	5	95
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	635	529			453	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	635	529			453	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	75			100	
cM capacity (veh/h)	440	554			1107	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	157	604	101
Volume Left	21	0	5
Volume Right	136	151	0
cSH	535	1700	1107
Volume to Capacity	0.29	0.36	0.00
Queue Length 95th (ft)	30	0	0
Control Delay (s)	14.5	0.0	0.5
Lane LOS	B		A
Approach Delay (s)	14.5	0.0	0.5
Approach LOS	B		

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	7	0	0	8	150	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	0	0	9	163	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			8		16	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			8		16	8
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		84	97
cM capacity (veh/h)			1613		1002	1075

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	8	9	195
Volume Left	0	0	163
Volume Right	0	0	32
cSH	1700	1700	1013
Volume to Capacity	0.00	0.01	0.19
Queue Length 95th (ft)	0	0	18
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay	8.7		
Intersection Capacity Utilization	20.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	7	22	26	135	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	24	28	147	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			32		223	20
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			32		223	20
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1581		752	1058

Direction, Lane #	EB 1	WB 1
Volume Total	32	175
Volume Left	0	28
Volume Right	24	0
cSH	1700	1581
Volume to Capacity	0.02	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	1.3
Lane LOS		A
Approach Delay (s)	0.0	1.3
Approach LOS		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	3	163	441	45	93	18
Peak Hour Factor	0.38	0.86	0.86	0.65	0.85	0.80
Hourly flow rate (vph)	8	190	513	69	109	22

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	197	582	132
Volume Left (vph)	8	0	109
Volume Right (vph)	0	69	23
Hadj (s)	0.14	-0.06	0.06
Departure Headway (s)	5.1	4.5	5.8
Degree Utilization, x	0.28	0.73	0.21
Capacity (veh/h)	665	782	566
Control Delay (s)	10.1	18.6	10.3
Approach Delay (s)	10.1	18.6	10.3
Approach LOS	B	C	B

Intersection Summary			
Delay	15.5		
HCM Level of Service	C		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	3	163	441	45	93	18
Peak Hour Factor	0.38	0.86	0.86	0.65	0.85	0.80
Hourly flow rate (vph)	8	190	513	69	109	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage veh)					1	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	582				753	547
vC1, stage 1 conf vol					547	
vC2, stage 2 conf vol					205	
vCu, unblocked vol	582				753	547
tC, single (s)	4.8				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.8				3.5	3.3
p0 queue free %	99				77	96
cM capacity (veh/h)	739				473	540

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	197	582	132
Volume Left	8	0	109
Volume Right	0	69	22
cSH	739	1700	483
Volume to Capacity	0.01	0.34	0.27
Queue Length 95th (ft)	1	0	27
Control Delay (s)	0.5	0.0	15.2
Lane LOS	A		C
Approach Delay (s)	0.5	0.0	15.2
Approach LOS			C

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

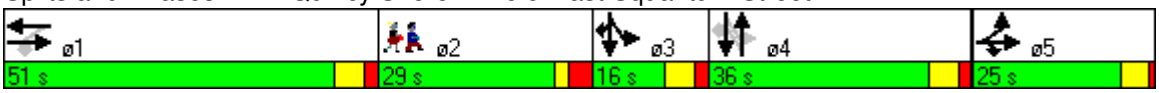
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	12	12	12	12	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.987				0.850
Flt Protected	0.950				0.997			0.991		0.950		
Satd. Flow (prot)	1652	3490	1507	0	3588	1583	0	1835	0	1805	1827	1599
Flt Permitted	0.950				0.569			0.907		0.353		
Satd. Flow (perm)	1652	3490	1507	0	2048	1583	0	1679	0	671	1827	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			33			197		3				155
Headway Factor	1.09	1.04	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3332			1043			1141			2039	
Travel Time (s)		75.7			23.7			25.9			46.3	
Volume (vph)	149	1030	31	18	546	227	36	167	18	340	171	115
Peak Hour Factor	0.82	0.93	0.75	0.56	0.96	0.92	0.80	0.91	0.75	0.80	0.93	0.74
Heavy Vehicles (%)	2%	0%	0%	6%	0%	2%	0%	1%	6%	0%	4%	1%
Adj. Flow (vph)	182	1108	41	32	569	247	45	184	24	425	184	155
Lane Group Flow (vph)	182	1108	41	0	601	247	0	253	0	425	184	155
Turn Type	Prot		custom	Perm		Free	Perm			pm+pt		custom
Protected Phases	5	1 5	5		1			4		3	3 4	3
Permitted Phases			1	1		Free	4			3 4		4
Detector Phases	5	1 5	5	1	1		4	4		3	3 4	3
Minimum Initial (s)	6.0		6.0	15.0	15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	20.0		20.0	22.0	22.0		20.0	20.0		12.0		12.0
Total Split (s)	25.0	76.0	25.0	51.0	51.0	0.0	36.0	36.0	0.0	16.0	52.0	16.0
Total Split (%)	15.9%	48.4%	15.9%	32.5%	32.5%	0.0%	22.9%	22.9%	0.0%	10.2%	33.1%	10.2%
Maximum Green (s)	20.0		20.0	45.0	45.0		30.0	30.0		10.0		10.0
Yellow Time (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0		1.0	2.0	2.0		2.0	2.0		2.0		2.0
Lead/Lag				Lead	Lead		Lag	Lag		Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0		2.0	3.0	3.0		2.0	2.0		2.0		2.0
Recall Mode	None		None	Min	Min		None	None		None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	21.1	71.3	71.3		46.1	129.8		24.1		36.5	40.6	40.6
Actuated g/C Ratio	0.16	0.55	0.55		0.36	1.00		0.19		0.28	0.31	0.31
v/c Ratio	0.68	0.58	0.05		0.83	0.16		0.81		1.43	0.32	0.26
Control Delay	68.8	24.3	8.9		51.7	0.2		71.9		244.4	38.4	6.7
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	68.8	24.3	8.9		51.7	0.2		71.9		244.4	38.4	6.7
LOS	E	C	A		D	A		E		F	D	A

Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Lane Width (ft)	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	7.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	18%
Maximum Green (s)	24.0
Yellow Time (s)	2.0
All-Red Time (s)	3.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		29.9			36.7			71.9			146.5	
Approach LOS		C			D			E			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 157	
Actuated Cycle Length: 129.8	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.43	
Intersection Signal Delay: 62.9	Intersection LOS: E
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Quincy Shore Drive & East Squantum Street



Lane Group	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	16	12	12	12	16
Turning Speed (mph)	15	9		9	9	15	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981		0.966				
Flt Protected	0.959						0.984
Satd. Flow (prot)	1787	0	2080	0	0	0	2119
Flt Permitted	0.959						0.984
Satd. Flow (perm)	1787	0	2080	0	0	0	2119
Headway Factor	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Link Speed (mph)	30		30				30
Link Distance (ft)	585		1242				258
Travel Time (s)	13.3		28.2				5.9
Volume (vph)	26	3	19	4	1	5	23
Peak Hour Factor	0.52	0.38	0.79	0.50	0.25	0.42	0.72
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	50	8	24	8	4	12	32
Lane Group Flow (vph)	58	0	32	0	0	0	48
Sign Control	Stop		Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.4%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	16	12	16	12	12	16	12	12	16	12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.969				
Flt Protected		0.950			0.950			0.994			0.999	
Satd. Flow (prot)	0	2046	1830	0	2046	0	0	2034	0	0	2089	0
Flt Permitted		0.950			0.950			0.994			0.999	
Satd. Flow (perm)	0	2046	1830	0	2046	0	0	2034	0	0	2089	0
Headway Factor	1.00	0.85	0.85	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1242			540			729			410	
Travel Time (s)		28.2			12.3			16.6			9.3	
Volume (vph)	2	0	47	15	0	0	24	133	32	1	194	0
Peak Hour Factor	0.38	0.25	0.62	0.69	0.92	0.25	0.92	0.90	0.61	0.25	0.72	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	2%	3%	2%
Adj. Flow (vph)	5	0	76	22	0	0	26	148	52	4	269	0
Lane Group Flow (vph)	0	5	76	0	22	0	0	226	0	0	273	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.0%
ICU Level of Service	A
Analysis Period (min)	15

MOVEMENT SUMMARY

Site: No Build_PM

Victory Road Roundabout
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Victory Road											
3	L	53	4.0	0.185	5.4	LOS A	0.7	18.4	0.26	0.85	27.4
8	T	131	0.0	0.185	5.4	LOS A	0.7	18.4	0.26	0.42	31.0
Approach		184	1.2	0.185	5.4	LOS A	0.7	18.4	0.26	0.54	29.8
North: Victory Road											
7	L	3	0.0	0.377	7.5	LOS A	1.9	47.9	0.23	0.97	25.7
4	T	267	1.0	0.377	7.5	LOS A	1.9	47.9	0.23	0.40	29.6
14	R	118	8.0	0.377	7.5	LOS A	1.9	47.9	0.23	0.52	28.8
Approach		388	3.1	0.377	7.5	LOS A	1.9	47.9	0.23	0.44	29.3
West: Seaport Drive											
5	L	110	1.9	0.236	6.9	LOS A	0.9	23.5	0.42	0.79	26.5
12	R	86	6.0	0.236	6.9	LOS A	0.9	23.5	0.42	0.60	28.9
Approach		196	3.7	0.236	6.9	LOS A	0.9	23.5	0.42	0.71	27.5
All Vehicles		768	2.8	0.377	6.8	LOS A	1.9	47.9	0.29	0.53	28.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.

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Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	16	12	12	12	16	12	12	16
Turning Speed (mph)	15		9	9	15		9	15		9	15	
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		0.865				0.994			0.883			0.996
Flt Protected						0.954			0.998			0.988
Satd. Flow (prot)	0	1644	0	0	0	1677	0	0	1793	0	0	1961
Flt Permitted						0.954			0.998			0.988
Satd. Flow (perm)	0	1644	0	0	0	1677	0	0	1793	0	0	1961
Headway Factor	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Link Speed (mph)		30				30			30			30
Link Distance (ft)		503				953			3311			958
Travel Time (s)		11.4				21.7			75.3			21.8
Volume (vph)	0	0	2	1	134	0	5	3	15	168	16	74
Peak Hour Factor	0.92	0.25	0.50	0.25	0.84	0.25	0.63	0.38	0.63	0.79	0.44	0.67
Heavy Vehicles (%)	2%	0%	0%	0%	3%	0%	100%	0%	33%	3%	0%	11%
Adj. Flow (vph)	0	0	4	4	160	0	8	8	24	213	36	110
Lane Group Flow (vph)	0	4	0	0	0	172	0	0	245	0	0	150
Sign Control		Stop				Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Turning Speed (mph)	9
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Headway Factor	1.00
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	1
Peak Hour Factor	0.25
Heavy Vehicles (%)	0%
Adj. Flow (vph)	4
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	16	12
Storage Length (ft)	100	0	135			0
Storage Lanes	1	1	1			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.985	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1694	1531	1728	1863	2066	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1694	1531	1728	1863	2066	0
Headway Factor	1.04	1.04	1.04	1.00	0.85	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	1251			2039	588	
Travel Time (s)	28.4			46.3	13.4	
Volume (vph)	35	258	158	342	278	27
Peak Hour Factor	0.85	0.71	0.90	0.94	0.85	0.65
Heavy Vehicles (%)	3%	2%	1%	2%	2%	8%
Adj. Flow (vph)	41	363	176	364	327	42
Lane Group Flow (vph)	41	363	176	364	369	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 38.9%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	8	12	13	12	13	12
Turning Speed (mph)		9	15		9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.966					0.963	
Flt Protected				0.971		0.965	
Satd. Flow (prot)	1874	0	0	1809	0	1785	0
Flt Permitted				0.971		0.965	
Satd. Flow (perm)	1874	0	0	1809	0	1785	0
Headway Factor	0.92	1.20	1.00	0.96	1.00	0.96	1.00
Link Speed (mph)	30			30		30	
Link Distance (ft)	1294			3311		454	
Travel Time (s)	29.4			75.3		10.3	
Volume (vph)	182	80	128	100	5	30	13
Peak Hour Factor	0.71	0.93	0.63	0.74	0.42	0.73	0.65
Heavy Vehicles (%)	6%	0%	5%	6%	0%	0%	8%
Adj. Flow (vph)	256	86	203	135	12	41	20
Lane Group Flow (vph)	342	0	0	338	0	73	0
Sign Control	Free			Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.1%
	ICU Level of Service A
Analysis Period (min)	15

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	12	16	12	12	16
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.894		0.947			
Flt Protected	0.989					0.995
Satd. Flow (prot)	1904	0	1991	0	0	2029
Flt Permitted	0.989					0.995
Satd. Flow (perm)	1904	0	1991	0	0	2029
Headway Factor	0.85	1.00	0.85	1.00	1.00	0.85
Link Speed (mph)	30		30			30
Link Distance (ft)	672		491			1294
Travel Time (s)	15.3		11.2			29.4
Volume (vph)	31	111	174	99	16	115
Peak Hour Factor	0.50	0.50	0.89	0.78	0.92	0.74
Heavy Vehicles (%)	0%	0%	4%	0%	2%	6%
Adj. Flow (vph)	62	222	196	127	17	155
Lane Group Flow (vph)	284	0	323	0	0	172
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	12
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.942	
Flt Protected					0.972	
Satd. Flow (prot)	1863	0	0	1863	1876	0
Flt Permitted					0.972	
Satd. Flow (perm)	1863	0	0	1863	1876	0
Headway Factor	1.00	1.00	1.00	1.00	0.88	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	178			281	420	
Travel Time (s)	4.0			6.4	9.5	
Volume (vph)	5	0	0	35	77	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	0	0	38	84	63
Lane Group Flow (vph)	5	0	0	38	147	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	16	12	16	12
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.869					
Flt Protected				0.979		
Satd. Flow (prot)	1565	0	0	1824	0	0
Flt Permitted				0.979		
Satd. Flow (perm)	1565	0	0	1824	0	0
Headway Factor	1.04	1.00	0.85	1.00	0.85	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	171			178	455	
Travel Time (s)	3.9			4.0	10.3	
Volume (vph)	5	143	52	70	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	155	57	76	0	0
Lane Group Flow (vph)	160	0	0	133	0	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	27	257	140	44	36	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	279	152	48	39	9

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	309	200	48
Volume Left (vph)	29	0	39
Volume Right (vph)	0	48	9
Hadj (s)	0.05	-0.11	0.09
Departure Headway (s)	4.3	4.2	5.1
Degree Utilization, x	0.37	0.24	0.07
Capacity (veh/h)	825	822	642
Control Delay (s)	9.8	8.5	8.5
Approach Delay (s)	9.8	8.5	8.5
Approach LOS	A	A	A

Intersection Summary			
Delay	9.2		
HCM Level of Service	A		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	27	257	140	44	36	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	279	152	48	39	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage veh)					1	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	200				514	176
vC1, stage 1 conf vol					176	
vC2, stage 2 conf vol					338	
vCu, unblocked vol	200				514	176
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				93	99
cM capacity (veh/h)	1372				580	867

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	309	200	48
Volume Left	29	0	39
Volume Right	0	48	9
cSH	1372	1700	617
Volume to Capacity	0.02	0.12	0.08
Queue Length 95th (ft)	2	0	6
Control Delay (s)	0.9	0.0	11.3
Lane LOS	A		B
Approach Delay (s)	0.9	0.0	11.3
Approach LOS			B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	12	12	12	12	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.995				0.850
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1636	3421	1507	1805	1881	1599	0	1775	0	1736	1827	1538
Flt Permitted	0.950			0.085				0.879		0.182		
Satd. Flow (perm)	1636	3421	1507	162	1881	1599	0	1570	0	332	1827	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			198		1				80
Headway Factor	1.09	1.04	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3332			1043			1141			2039	
Travel Time (s)		75.7			23.7			25.9			46.3	
Volume (vph)	147	313	14	84	560	397	29	183	8	307	260	45
Peak Hour Factor	0.78	0.89	0.39	0.56	0.89	0.86	0.78	0.74	0.67	0.77	0.82	0.56
Heavy Vehicles (%)	3%	2%	0%	0%	1%	1%	0%	7%	0%	4%	4%	5%
Adj. Flow (vph)	188	352	36	150	629	462	37	247	12	399	317	80
Lane Group Flow (vph)	188	352	36	150	629	462	0	296	0	399	317	80
Turn Type	Prot		custom	Perm		Free	Perm			pm+pt		custom
Protected Phases	5	1 5	5		1			4		3	3 4	3
Permitted Phases			1	1		Free	4			3 4		4
Detector Phases	5	1 5	5	1	1		4	4		3	3 4	3
Minimum Initial (s)	6.0		6.0	15.0	15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	20.0		20.0	22.0	22.0		20.0	20.0		12.0		12.0
Total Split (s)	25.0	76.0	25.0	51.0	51.0	0.0	26.0	26.0	0.0	16.0	42.0	16.0
Total Split (%)	17.0%	51.7%	17.0%	34.7%	34.7%	0.0%	17.7%	17.7%	0.0%	10.9%	28.6%	10.9%
Maximum Green (s)	20.0		20.0	45.0	45.0		20.0	20.0		10.0		10.0
Yellow Time (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0		1.0	2.0	2.0		2.0	2.0		2.0		2.0
Lead/Lag				Lead	Lead		Lag	Lag		Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0		2.0	3.0	3.0		2.0	2.0		2.0		2.0
Recall Mode	None		None	Min	Min		None	None		None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	18.0	69.5	69.5	47.5	47.5	120.8		22.2		34.4	38.4	38.4
Actuated g/C Ratio	0.15	0.58	0.58	0.39	0.39	1.00		0.18		0.28	0.32	0.32
v/c Ratio	0.77	0.18	0.04	2.34	0.85	0.29		1.02		1.70	0.55	0.15
Control Delay	71.7	13.6	5.1	674.9	47.1	0.5		107.5		356.4	40.6	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	71.7	13.6	5.1	674.9	47.1	0.5		107.5		356.4	40.6	8.5
LOS	E	B	A	F	D	A		F		F	D	A

Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Lane Width (ft)	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	7.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	20%
Maximum Green (s)	24.0
Yellow Time (s)	2.0
All-Red Time (s)	3.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		32.0			105.6			107.5			195.7	
Approach LOS		C			F			F			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 147	
Actuated Cycle Length: 120.8	
Natural Cycle: 125	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.34	
Intersection Signal Delay: 115.9	Intersection LOS: F
Intersection Capacity Utilization 79.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Quincy Shore Drive & East Squantum Street

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Sign Control	Stop		Stop				Stop
Volume (vph)	18	6	17	26	1	20	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	7	18	28	0	22	76

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	26	47	98
Volume Left (vph)	20	0	22
Volume Right (vph)	7	28	0
Hadj (s)	0.03	-0.33	0.08
Departure Headway (s)	4.2	3.7	4.1
Degree Utilization, x	0.03	0.05	0.11
Capacity (veh/h)	818	943	871
Control Delay (s)	7.4	6.9	7.6
Approach Delay (s)	7.4	6.9	7.6
Approach LOS	A	A	A

Intersection Summary			
Delay	7.4		
HCM Level of Service	A		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	1	109	26	0	1	53	188	6	0	87	0
Peak Hour Factor	0.92	0.92	0.92	0.78	0.92	0.25	0.92	0.74	0.38	0.92	0.68	0.92
Hourly flow rate (vph)	0	1	118	33	0	4	58	254	16	0	128	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											435	
pX, platoon unblocked												
vC, conflicting volume	509	513	128	506	505	262	128			270		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	509	513	128	506	505	262	128			270		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	87	92	100	99	96			100		
cM capacity (veh/h)	458	446	922	405	451	782	1458			1294		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	1	118	37	327	128
Volume Left	0	0	33	58	0
Volume Right	0	118	4	16	0
cSH	446	922	427	1458	1294
Volume to Capacity	0.00	0.13	0.09	0.04	0.00
Queue Length 95th (ft)	0	11	7	3	0
Control Delay (s)	13.1	9.5	14.2	1.6	0.0
Lane LOS	B	A	B	A	
Approach Delay (s)	9.5		14.2	1.6	0.0
Approach LOS	A		B		

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

MOVEMENT SUMMARY

Site: Build_AM

Victory Road Roundabout
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Victory Road											
3	L	308	2.0	0.599	12.4	LOS B	4.0	100.5	0.53	0.80	24.3
8	T	255	1.0	0.599	12.4	LOS B	4.0	100.5	0.53	0.56	26.4
Approach		562	1.5	0.599	12.4	LOS B	4.0	100.5	0.53	0.69	25.2
North: Victory Road											
7	L	24	0.0	0.572	13.4	LOS B	3.5	90.0	0.62	1.00	23.6
4	T	143	2.0	0.572	13.4	LOS B	3.5	90.0	0.62	0.75	26.0
14	R	284	6.0	0.572	13.4	LOS B	3.5	90.0	0.62	0.80	25.7
Approach		451	4.4	0.572	13.4	LOS B	3.5	90.0	0.62	0.80	25.6
West: Seaport Drive											
5	L	138	5.8	0.296	7.3	LOS A	1.2	31.4	0.35	0.75	26.3
12	R	119	13.0	0.296	7.3	LOS A	1.2	31.4	0.35	0.54	28.6
Approach		258	9.2	0.296	7.3	LOS A	1.2	31.4	0.35	0.66	27.3
All Vehicles		1270	4.1	0.599	11.7	LOS B	4.0	100.5	0.53	0.72	25.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.

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Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Sign Control		Stop				Stop			Free			Free
Grade		0%				0%			0%			0%
Volume (veh/h)	0	1	1	41	597	3	17	0	37	130	6	4
Peak Hour Factor	0.92	0.25	0.25	0.43	0.80	0.75	0.61	0.92	0.69	0.89	0.50	0.50
Hourly flow rate (vph)	0	4	4	0	746	4	28	0	54	146	12	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None				None						
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	189	232	8	0	165	159	127	8			200	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	189	232	8	0	165	159	127	8			200	
tC, single (s)	7.1	6.5	6.2	0.0	7.1	6.8	6.3	4.1			4.9	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.5	4.3	3.4	2.2			2.9	
p0 queue free %	100	99	100	0	5	99	97	100			99	
cM capacity (veh/h)	738	664	1080	0	786	672	913	1612			1007	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	778	200	20
Volume Left	0	746	0	12
Volume Right	4	28	146	0
cSH	822	789	1612	1007
Volume to Capacity	0.01	0.99	0.00	0.01
Queue Length 95th (ft)	1	410	0	1
Control Delay (s)	9.4	51.5	0.0	5.2
Lane LOS	A	F		A
Approach Delay (s)	9.4	51.5	0.0	5.2
Approach LOS	A	F		

Intersection Summary			
Average Delay	40.0		
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SBR
Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	0
Peak Hour Factor	0.92
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	

Direction, Lane #

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	15	273	399	297	373	97
Peak Hour Factor	0.75	0.85	0.85	0.76	0.74	0.70
Hourly flow rate (vph)	20	321	469	391	504	139
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1903	573	643			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1903	573	643			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	44	38	50			
cM capacity (veh/h)	36	515	942			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	20	321	469	391	643
Volume Left	20	0	469	0	0
Volume Right	0	321	0	0	139
cSH	36	515	942	1700	1700
Volume to Capacity	0.56	0.62	0.50	0.23	0.38
Queue Length 95th (ft)	48	106	71	0	0
Control Delay (s)	196.2	22.9	12.6	0.0	0.0
Lane LOS	F	C	B		
Approach Delay (s)	33.0		6.9		0.0
Approach LOS	D				

Intersection Summary			
Average Delay	9.3		
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations							
Sign Control	Free			Free		Stop	
Grade	0%			0%		0%	
Volume (veh/h)	156	430	421	19	3	34	5
Peak Hour Factor	0.81	0.87	0.85	0.68	0.75	0.63	0.63
Hourly flow rate (vph)	193	494	495	28	0	54	8
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type						None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume			687		0	1458	440
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			687		0	1458	440
tC, single (s)			4.1		0.0	6.4	6.2
tC, 2 stage (s)							
tF (s)			2.2		0.0	3.5	3.3
p0 queue free %			45		0	17	99
cM capacity (veh/h)			907		0	65	622

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	687	523	62
Volume Left	0	495	54
Volume Right	494	0	8
cSH	1700	907	73
Volume to Capacity	0.40	0.55	0.85
Queue Length 95th (ft)	0	85	104
Control Delay (s)	0.0	13.3	161.1
Lane LOS		B	F
Approach Delay (s)	0.0	13.3	161.1
Approach LOS			F

Intersection Summary			
Average Delay	13.3		
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	19	102	404	82	5	86
Peak Hour Factor	0.92	0.50	0.88	0.53	0.92	0.65
Hourly flow rate (vph)	21	204	459	155	5	132
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	680	536			459	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	680	536			459	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	63			100	
cM capacity (veh/h)	415	548			1102	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	225	614	138
Volume Left	21	0	5
Volume Right	204	155	0
cSH	532	1700	1102
Volume to Capacity	0.42	0.36	0.00
Queue Length 95th (ft)	52	0	0
Control Delay (s)	16.6	0.0	0.4
Lane LOS	C		A
Approach Delay (s)	16.6	0.0	0.4
Approach LOS	C		

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	7	0	0	8	162	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	0	0	9	176	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			8		16	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			8		16	8
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		82	97
cM capacity (veh/h)			1613		1002	1075

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	8	9	208
Volume Left	0	0	176
Volume Right	0	0	32
cSH	1700	1700	1012
Volume to Capacity	0.00	0.01	0.21
Queue Length 95th (ft)	0	0	19
Control Delay (s)	0.0	0.0	9.5
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.5
Approach LOS			A

Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	7	62	26	147	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	67	28	160	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			75		258	41
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			75		258	41
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1524		718	1030

Direction, Lane #	EB 1	WB 1
Volume Total	75	188
Volume Left	0	28
Volume Right	67	0
cSH	1700	1524
Volume to Capacity	0.04	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	1.2
Lane LOS		A
Approach Delay (s)	0.0	1.2
Approach LOS		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	19.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	3	195	451	45	93	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	212	490	49	101	20

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	215	539	121
Volume Left (vph)	3	0	101
Volume Right (vph)	0	49	20
Hadj (s)	0.04	-0.02	0.10
Departure Headway (s)	4.9	4.5	5.7
Degree Utilization, x	0.29	0.68	0.19
Capacity (veh/h)	692	779	555
Control Delay (s)	10.0	16.4	10.1
Approach Delay (s)	10.0	16.4	10.1
Approach LOS	A	C	B

Intersection Summary			
Delay	13.9		
HCM Level of Service	B		
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	3	195	451	45	93	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	212	490	49	101	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	539				733	515
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	539				733	515
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				74	97
cM capacity (veh/h)	1029				386	560

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	215	539	121
Volume Left	3	0	101
Volume Right	0	49	20
cSH	1029	1700	407
Volume to Capacity	0.00	0.32	0.30
Queue Length 95th (ft)	0	0	31
Control Delay (s)	0.2	0.0	17.5
Lane LOS	A		C
Approach Delay (s)	0.2	0.0	17.5
Approach LOS			C

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	90	0	0	22	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	98	0	0	24	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	0	0			24	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			24	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	100			100	
cM capacity (veh/h)	1023	1085			1591	

Direction, Lane #	WB 1	NB 1
Volume Total	98	24
Volume Left	98	0
Volume Right	0	24
cSH	1023	1700
Volume to Capacity	0.10	0.01
Queue Length 95th (ft)	8	0
Control Delay (s)	8.9	0.0
Lane LOS	A	
Approach Delay (s)	8.9	0.0
Approach LOS	A	

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	8.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Sign Control			Stop			Stop			Free			Free
Grade			0%			0%			0%			0%
Volume (veh/h)	1	0	0	9	18	0	8	7	35	0	0	89
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	10	20	0	9	8	38	0	0	97
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type			None			None						
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked	0.00											
vC, conflicting volume	0	160	151	98	161	152	38	99			38	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	160	151	98	161	152	38	99			38	
tC, single (s)	0.0	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	0.0	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2	
p0 queue free %	0	100	100	99	98	100	99	99			100	
cM capacity (veh/h)	0	796	737	958	793	736	1034	1494			1572	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	28	46	99
Volume Left	0	20	8	0
Volume Right	10	9	0	2
cSH	958	854	1494	1700
Volume to Capacity	0.01	0.03	0.01	0.06
Queue Length 95th (ft)	1	3	0	0
Control Delay (s)	8.8	9.4	1.3	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.8	9.4	1.3	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	20.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SBR
Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	2
Peak Hour Factor	0.92
Hourly flow rate (vph)	2
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	

Direction, Lane #

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	27	12	30	19	6	107
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	13	33	21	7	116
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	172	43			53	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	172	43			53	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			100	
cM capacity (veh/h)	814	1027			1552	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	42	53	123
Volume Left	29	0	7
Volume Right	13	21	0
cSH	870	1700	1552
Volume to Capacity	0.05	0.03	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.4	0.0	0.4
Lane LOS	A		A
Approach Delay (s)	9.4	0.0	0.4
Approach LOS	A		

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

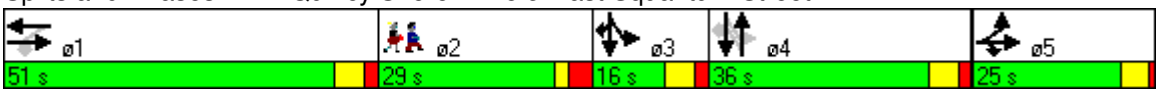
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	12	12	12	12	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.988				0.850
Flt Protected	0.950				0.997			0.991		0.950		
Satd. Flow (prot)	1652	3490	1507	0	3588	1583	0	1837	0	1805	1827	1599
Flt Permitted	0.950				0.569			0.909		0.339		
Satd. Flow (perm)	1652	3490	1507	0	2048	1583	0	1685	0	644	1827	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			33			212		3				164
Headway Factor	1.09	1.04	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3332			1043			1141			2039	
Travel Time (s)		75.7			23.7			25.9			46.3	
Volume (vph)	158	1030	31	18	546	245	36	176	18	352	177	121
Peak Hour Factor	0.82	0.93	0.75	0.56	0.96	0.92	0.80	0.91	0.75	0.80	0.93	0.74
Heavy Vehicles (%)	2%	0%	0%	6%	0%	2%	0%	1%	6%	0%	4%	1%
Adj. Flow (vph)	193	1108	41	32	569	266	45	193	24	440	190	164
Lane Group Flow (vph)	193	1108	41	0	601	266	0	262	0	440	190	164
Turn Type	Prot		custom	Perm		Free	Perm			pm+pt		custom
Protected Phases	5	1 5	5		1			4		3	3 4	3
Permitted Phases			1	1		Free	4			3 4		4
Detector Phases	5	1 5	5	1	1		4	4		3	3 4	3
Minimum Initial (s)	6.0		6.0	15.0	15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	20.0		20.0	22.0	22.0		20.0	20.0		12.0		12.0
Total Split (s)	25.0	76.0	25.0	51.0	51.0	0.0	36.0	36.0	0.0	16.0	52.0	16.0
Total Split (%)	15.9%	48.4%	15.9%	32.5%	32.5%	0.0%	22.9%	22.9%	0.0%	10.2%	33.1%	10.2%
Maximum Green (s)	20.0		20.0	45.0	45.0		30.0	30.0		10.0		10.0
Yellow Time (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0		1.0	2.0	2.0		2.0	2.0		2.0		2.0
Lead/Lag				Lead	Lead		Lag	Lag		Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0		2.0	3.0	3.0		2.0	2.0		2.0		2.0
Recall Mode	None		None	Min	Min		None	None		None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	21.1	71.4	71.4		46.1	130.4		24.6		37.0	41.1	41.1
Actuated g/C Ratio	0.16	0.55	0.55		0.35	1.00		0.19		0.28	0.32	0.32
v/c Ratio	0.72	0.58	0.05		0.83	0.17		0.82		1.50	0.33	0.27
Control Delay	71.5	24.5	8.9		52.2	0.2		72.5		273.6	38.4	6.6
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	71.5	24.5	8.9		52.2	0.2		72.5		273.6	38.4	6.6
LOS	E	C	A		D	A		E		F	D	A

Lane Group	ø2
Lane Configurations	
Ideal Flow (vphpl)	
Lane Width (ft)	
Total Lost Time (s)	
Leading Detector (ft)	
Trailing Detector (ft)	
Turning Speed (mph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Headway Factor	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phases	
Minimum Initial (s)	7.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	18%
Maximum Green (s)	24.0
Yellow Time (s)	2.0
All-Red Time (s)	3.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		30.8			36.2			72.5			162.2	
Approach LOS		C			D			E			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 157	
Actuated Cycle Length: 130.4	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.50	
Intersection Signal Delay: 67.5	Intersection LOS: E
Intersection Capacity Utilization 89.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Quincy Shore Drive & East Squantum Street



Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Sign Control	Stop		Stop				Stop
Volume (vph)	55	22	65	33	1	12	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	24	71	36	0	13	38

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	84	107	51
Volume Left (vph)	60	0	13
Volume Right (vph)	24	36	0
Hadj (s)	0.01	-0.17	0.09
Departure Headway (s)	4.2	4.0	4.3
Degree Utilization, x	0.10	0.12	0.06
Capacity (veh/h)	817	876	818
Control Delay (s)	7.7	7.5	7.6
Approach Delay (s)	7.7	7.5	7.6
Approach LOS	A	A	A

Intersection Summary			
Delay	7.6		
HCM Level of Service	A		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	134	15	0	0	160	178	32	1	233	0
Peak Hour Factor	0.92	0.92	0.92	0.69	0.92	0.25	0.92	0.90	0.61	0.25	0.72	0.92
Hourly flow rate (vph)	2	0	146	22	0	0	174	198	52	4	324	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	903	930	324	903	903	224	324			250		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	903	930	324	903	903	224	324			250		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	80	88	100	100	86			100		
cM capacity (veh/h)	230	229	717	185	237	820	1236			1315		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	2	146	22	424	328
Volume Left	2	0	22	174	4
Volume Right	0	146	0	52	0
cSH	230	717	185	1236	1315
Volume to Capacity	0.01	0.20	0.12	0.14	0.00
Queue Length 95th (ft)	1	19	10	12	0
Control Delay (s)	20.8	11.3	27.1	4.3	0.1
Lane LOS	C	B	D	A	A
Approach Delay (s)	11.4		27.1	4.3	0.1
Approach LOS	B		D		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

MOVEMENT SUMMARY

Site: Build_PM

Victory Road Roundabout
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Victory Road											
3	L	53	4.0	0.267	7.2	LOS A	1.1	27.5	0.44	0.90	26.8
8	T	172	0.0	0.267	7.2	LOS A	1.1	27.5	0.44	0.57	29.7
Approach		225	0.9	0.267	7.2	LOS A	1.1	27.5	0.44	0.65	28.9
North: Victory Road											
7	L	3	0.0	0.528	10.1	LOS B	3.2	83.9	0.29	0.91	24.7
4	T	297	1.0	0.528	10.1	LOS B	3.2	83.9	0.29	0.41	28.0
14	R	237	8.0	0.528	10.1	LOS B	3.2	83.9	0.29	0.52	27.4
Approach		538	4.1	0.528	10.1	LOS B	3.2	83.9	0.29	0.46	27.7
West: Seaport Drive											
5	L	275	1.9	0.445	10.2	LOS B	2.1	54.7	0.53	0.83	25.0
12	R	86	6.0	0.445	10.2	LOS B	2.1	54.7	0.53	0.69	26.9
Approach		361	2.9	0.445	10.2	LOS B	2.1	54.7	0.53	0.80	25.4
All Vehicles		1124	3.1	0.528	9.5	LOS A	3.2	83.9	0.40	0.60	27.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.

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Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Sign Control		Stop				Stop			Free			Free
Grade		0%				0%			0%			0%
Volume (veh/h)	0	0	2	1	227	0	5	3	15	313	16	74
Peak Hour Factor	0.92	0.25	0.50	0.25	0.84	0.25	0.63	0.38	0.63	0.79	0.44	0.67
Hourly flow rate (vph)	0	0	4	0	270	0	8	8	24	396	36	110
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None				None						
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	431	621	112	0	427	425	222	114			420	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	431	621	112	0	427	425	222	114			420	
tC, single (s)	7.1	6.5	6.2	0.0	7.1	6.5	7.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.5	4.0	4.2	2.2			2.2	
p0 queue free %	100	100	100	0	48	100	99	99			97	
cM capacity (veh/h)	513	391	946	0	519	505	624	1487			1150	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	278	428	151
Volume Left	0	270	8	36
Volume Right	4	8	396	4
cSH	946	522	1487	1150
Volume to Capacity	0.00	0.53	0.01	0.03
Queue Length 95th (ft)	0	78	0	2
Control Delay (s)	8.8	19.5	0.2	2.2
Lane LOS	A	C	A	A
Approach Delay (s)	8.8	19.5	0.2	2.2
Approach LOS	A	C		

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SBR
Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	1
Peak Hour Factor	0.25
Hourly flow rate (vph)	4
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	

Direction, Lane #

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	35	281	194	342	278	27
Peak Hour Factor	0.85	0.71	0.90	0.94	0.85	0.65
Hourly flow rate (vph)	41	396	216	364	327	42
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1143	348	369			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1143	348	369			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	77	43	82			
cM capacity (veh/h)	181	695	1195			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	41	396	216	364	369
Volume Left	41	0	216	0	0
Volume Right	0	396	0	0	42
cSH	181	695	1195	1700	1700
Volume to Capacity	0.23	0.57	0.18	0.21	0.22
Queue Length 95th (ft)	21	90	16	0	0
Control Delay (s)	30.7	16.8	8.7	0.0	0.0
Lane LOS	D	C	A		
Approach Delay (s)	18.1		3.2		0.0
Approach LOS	C				

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations							
Sign Control	Free			Free		Stop	
Grade	0%			0%		0%	
Volume (veh/h)	182	80	209	100	5	30	13
Peak Hour Factor	0.71	0.93	0.63	0.74	0.42	0.73	0.65
Hourly flow rate (vph)	256	86	332	135	0	41	20
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type						None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume			342		0	1098	299
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			342		0	1098	299
tC, single (s)			4.1		0.0	6.4	6.3
tC, 2 stage (s)							
tF (s)			2.2		0.0	3.5	3.4
p0 queue free %			72		0	76	97
cM capacity (veh/h)			1200		0	172	726

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	342	467	61
Volume Left	0	332	41
Volume Right	86	0	20
cSH	1700	1200	229
Volume to Capacity	0.20	0.28	0.27
Queue Length 95th (ft)	0	28	26
Control Delay (s)	0.0	7.3	26.3
Lane LOS		A	D
Approach Delay (s)	0.0	7.3	26.3
Approach LOS			D

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	31	238	192	108	16	132
Peak Hour Factor	0.50	0.50	0.89	0.78	0.92	0.74
Hourly flow rate (vph)	62	476	216	138	17	178
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	498	285			216	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	498	285			216	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	37			99	
cM capacity (veh/h)	528	759			1354	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	538	354	196
Volume Left	62	0	17
Volume Right	476	138	0
cSH	723	1700	1354
Volume to Capacity	0.74	0.21	0.01
Queue Length 95th (ft)	169	0	1
Control Delay (s)	23.0	0.0	0.8
Lane LOS	C		A
Approach Delay (s)	23.0	0.0	0.8
Approach LOS	C		

Intersection Summary			
Average Delay	11.5		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	5	0	0	35	122	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	0	38	133	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			5		43	5
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			5		43	5
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		86	94
cM capacity (veh/h)			1616		967	1078

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	5	38	196
Volume Left	0	0	133
Volume Right	0	0	63
cSH	1700	1700	1000
Volume to Capacity	0.00	0.02	0.20
Queue Length 95th (ft)	0	0	18
Control Delay (s)	0.0	0.0	9.5
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.5
Approach LOS			A

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	5	172	52	115	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	187	57	125	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			192		337	99
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			192		337	99
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		100	100
cM capacity (veh/h)			1381		632	957

Direction, Lane #	EB 1	WB 1
Volume Total	192	182
Volume Left	0	57
Volume Right	187	0
cSH	1700	1381
Volume to Capacity	0.11	0.04
Queue Length 95th (ft)	0	3
Control Delay (s)	0.0	2.6
Lane LOS		A
Approach Delay (s)	0.0	2.6
Approach LOS		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	27	280	176	44	36	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	304	191	48	39	9

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	334	239	48
Volume Left (vph)	29	0	39
Volume Right (vph)	0	48	9
Hadj (s)	0.05	-0.09	0.09
Departure Headway (s)	4.3	4.3	5.2
Degree Utilization, x	0.40	0.29	0.07
Capacity (veh/h)	816	812	618
Control Delay (s)	10.2	9.0	8.6
Approach Delay (s)	10.2	9.0	8.6
Approach LOS	B	A	A

Intersection Summary			
Delay	9.6		
HCM Level of Service	A		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	27	280	176	44	36	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	304	191	48	39	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	239				578	215
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	239				578	215
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				92	99
cM capacity (veh/h)	1328				467	825

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	334	239	48
Volume Left	29	0	39
Volume Right	0	48	9
cSH	1328	1700	507
Volume to Capacity	0.02	0.14	0.09
Queue Length 95th (ft)	2	0	8
Control Delay (s)	0.9	0.0	12.8
Lane LOS	A		B
Approach Delay (s)	0.9	0.0	12.8
Approach LOS			B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	87	0	0	47	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	95	0	0	51	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	0	0			51	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			51	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	100			100	
cM capacity (veh/h)	1023	1085			1555	

Direction, Lane #	WB 1	NB 1
Volume Total	95	51
Volume Left	95	0
Volume Right	0	51
cSH	1023	1700
Volume to Capacity	0.09	0.03
Queue Length 95th (ft)	8	0
Control Delay (s)	8.9	0.0
Lane LOS	A	
Approach Delay (s)	8.9	0.0
Approach LOS	A	

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	8.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Sign Control			Stop			Stop			Free			Free
Grade			0%			0%			0%			0%
Volume (veh/h)	1	5	0	23	20	0	8	19	85	0	0	84
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	5	0	25	22	0	9	21	92	0	0	91
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type			None			None						
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked	0.00											
vC, conflicting volume	0	235	227	93	252	228	92	95			92	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	235	227	93	252	228	92	95			92	
tC, single (s)	0.0	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	0.0	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2	
p0 queue free %	0	99	100	97	97	100	99	99			100	
cM capacity (veh/h)	0	705	663	964	676	662	965	1499			1502	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	30	30	113	95
Volume Left	5	22	21	0
Volume Right	25	9	0	3
cSH	905	740	1499	1700
Volume to Capacity	0.03	0.04	0.01	0.06
Queue Length 95th (ft)	3	3	1	0
Control Delay (s)	9.1	10.1	1.4	0.0
Lane LOS	A	B	A	
Approach Delay (s)	9.1	10.1	1.4	0.0
Approach LOS	A	B		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SBR
Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	3
Peak Hour Factor	0.92
Hourly flow rate (vph)	3
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	

Direction, Lane #

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	24	12	92	67	22	108
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	13	100	73	24	117
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	302	136			173	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	302	136			173	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			98	
cM capacity (veh/h)	678	912			1404	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	39	173	141
Volume Left	26	0	24
Volume Right	13	73	0
cSH	742	1700	1404
Volume to Capacity	0.05	0.10	0.02
Queue Length 95th (ft)	4	0	1
Control Delay (s)	10.1	0.0	1.4
Lane LOS	B		A
Approach Delay (s)	10.1	0.0	1.4
Approach LOS	B		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	29.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Sign Control		Stop				Stop			Free			Free
Grade		0%				0%			0%			0%
Volume (veh/h)	0	1	1	41	597	3	17	0	37	130	6	4
Peak Hour Factor	0.92	0.25	0.25	0.43	0.80	0.75	0.61	0.92	0.69	0.89	0.50	0.50
Hourly flow rate (vph)	0	4	4	0	746	4	28	0	54	146	12	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None				None						
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	115	232	8	0	92	86	54	8			200	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	115	232	8	0	92	86	54	8			200	
tC, single (s)	7.1	6.5	6.2	0.0	7.1	6.8	6.3	4.1			4.9	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.5	4.3	3.4	2.2			2.9	
p0 queue free %	100	99	100	0	15	99	97	100			99	
cM capacity (veh/h)	826	664	1080	0	877	740	1002	1612			1007	

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	8	750	28	54	146	20
Volume Left	0	746	0	0	0	12
Volume Right	4	0	28	0	146	0
cSH	822	876	1002	1612	1700	1007
Volume to Capacity	0.01	0.86	0.03	0.00	0.09	0.01
Queue Length 95th (ft)	1	266	2	0	0	1
Control Delay (s)	9.4	28.0	8.7	0.0	0.0	5.2
Lane LOS	A	D	A			A
Approach Delay (s)	9.4	27.3		0.0		5.2
Approach LOS	A	D				

Intersection Summary			
Average Delay	21.3		
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SBR
Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	0
Peak Hour Factor	0.92
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	

Direction, Lane #

HCM Unsignalized Intersection Capacity Analysis
5: Seaport Drive & Commander Shea Blvd

1/18/2013

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Sign Control		Stop				Stop			Free			Free
Grade		0%				0%			0%			0%
Volume (veh/h)	0	0	2	1	227	0	5	3	15	313	16	74
Peak Hour Factor	0.92	0.25	0.50	0.25	0.84	0.25	0.63	0.38	0.63	0.79	0.44	0.67
Hourly flow rate (vph)	0	0	4	0	270	0	8	8	24	396	36	110
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None				None						
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	233	621	112	0	229	227	24	114			420	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	233	621	112	0	229	227	24	114			420	
tC, single (s)	7.1	6.5	6.2	0.0	7.1	6.5	7.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.5	4.0	4.2	2.2			2.2	
p0 queue free %	100	100	100	0	61	100	99	99			97	
cM capacity (veh/h)	695	391	946	0	701	651	829	1487			1150	

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	4	270	8	32	396	151
Volume Left	0	270	0	8	0	36
Volume Right	4	0	8	0	396	4
cSH	946	701	829	1487	1700	1150
Volume to Capacity	0.00	0.39	0.01	0.01	0.23	0.03
Queue Length 95th (ft)	0	46	1	0	0	2
Control Delay (s)	8.8	13.3	9.4	1.9	0.0	2.2
Lane LOS	A	B	A	A		A
Approach Delay (s)	8.8	13.2		0.1		2.2
Approach LOS	A	B				

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SBR
Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	1
Peak Hour Factor	0.25
Hourly flow rate (vph)	4
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	

Direction, Lane #

Appendix C. Crash Data and Analysis Worksheets

Quincy - Redgate

MassHighway Crash History

Howard/Stein-Hudson Associates
January 18, 2013

MassHighway Crash History

Scenario	Quincy Shore Drive/East Squantum Street	Victory Road Extension/Miwra Haul Road	Victory Road/Miwra Haul Road/Tilden Commons	Seaport Drive/Victory Road	Seaport Drive/Commander Shea Blvd	East Squantum Street/Victory Road	Quincy Shore Drive WB ramps	Quincy Shore Drive EB ramps	Victory Road/Victory Road Extension	Victory Road/Marina Drive
Year										
2007	7	0	0	0	0	2	0	0	0	0
2008	3	0	1	2	1	2	0	0	0	1
2009	11	0	0	2	1	1	0	0	0	1
Total	21	0	1	4	2	5	0	0	0	2
Type										
Single Vehicle	11	0	0	3	2	0	0	0	0	1
Angle	4	0	0	0	0	2	0	0	0	0
Rear-end	5	0	0	0	0	2	0	0	0	1
Head-on	0	0	1	1	0	0	0	0	0	0
Sideswipe	1	0	0	0	0	0	0	0	0	0
Unknown/Other	0	0	0	0	0	1	0	0	0	0
Total	21	0	1	4	2	5	0	0	0	2
Severity										
Property Damage Only	14	0	1	3	2	2	0	0	0	1
Personal injury	6	0	0	1	0	2	0	0	0	1
Fatality	0	0	0	0	0	0	0	0	0	0
Hit and run	0	0	0	0	0	0	0	0	0	0
Unknown	1	0	0	0	0	1	0	0	0	0
Total	21	0	1	4	2	5	0	0	0	2
Light Conditions										
Day	12	0	1	1	0	4	0	0	0	2
Dusk/dawn	0	0	0	1	0	0	0	0	0	0
Dark (road lit)	9	0	0	2	2	1	0	0	0	0
Dark (road unlit)	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0
Total	21	0	1	4	2	5	0	0	0	2
Road Conditions										
Dry	13	0	1	4	0	5	0	0	0	1
Wet	5	0	0	0	2	0	0	0	0	1
Snow	1	0	0	0	0	0	0	0	0	0
Ice	2	0	0	0	0	0	0	0	0	0
Unknown/Other	0	0	0	0	0	0	0	0	0	0
Total	21	0	1	4	2	5	0	0	0	2
Hour of Day										
6:00-9:00 a.m.	8	0	0	0	0	0	0	0	0	0
9:00 a.m.-3:00 p.m.	3	0	1	0	0	1	0	0	0	1
3:00-6:00 p.m.	1	0	0	1	0	3	0	0	0	0
6:00 p.m.-6:00 a.m.	8	0	0	3	2	1	0	0	0	1
unkown	1	0	0	0	0	0	0	0	0	0
Total	21	0	1	4	2	5	0	0	0	2
Day of Week										
Monday	2	0	0	1	0	1	0	0	0	0
Tuesday	2	0	1	0	0	1	0	0	0	0
Wednesday	3	0	0	0	0	0	0	0	0	0
Thursday	2	0	0	2	1	1	0	0	0	1
Friday	6	0	0	0	1	1	0	0	0	0
Saturday	4	0	0	0	0	1	0	0	0	0
Sunday	2	0	0	1	0	0	0	0	0	1
Total	21	0	1	4	2	5	0	0	0	2
Crash Rate	0.69	0	0.23	0.52	0.31	0.37	0	0	0	0.26
District Average	0.77	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : QUINCY COUNT DATE : 6/7/2012

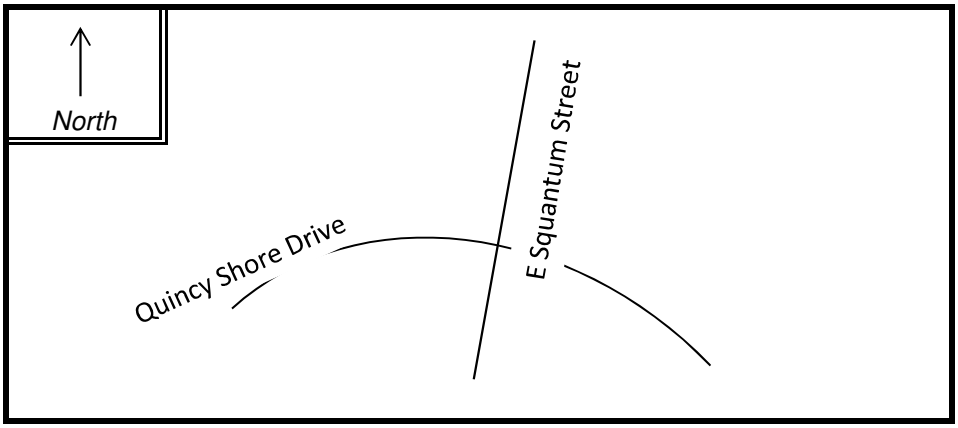
DISTRICT : 6 UNSIGNALIZED : SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Quincy Shore Drive

MINOR STREET(S) : East Squantum Street

INTERSECTION DIAGRAM (Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	→	←	↑	↓		
VOLUMES (AM/PM) :	1,638	1,780	427	1,185		5,030

" K " FACTOR : 0.180 APPROACH ADT : 27,944 **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 21 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : 7.00

CRASH RATE CALCULATION : 0.69 RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Comments :

Project Title & Date: Marina Bay

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : QUINCY COUNT DATE : 6/7/2012

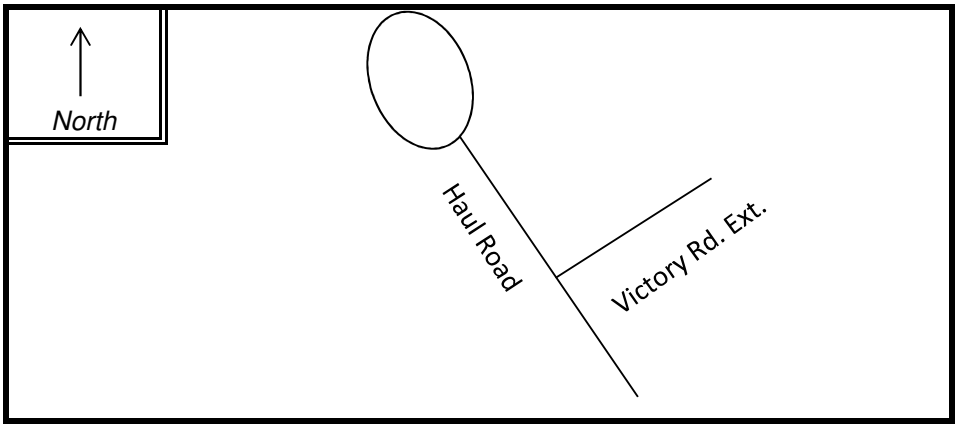
DISTRICT : 6 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Miwra Haul Road

MINOR STREET(S) : Victory Road Extension

INTERSECTION DIAGRAM (Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	↙	↖	↘			
VOLUMES (AM/PM) :	39	44	39			122

" K " FACTOR : 0.180 APPROACH ADT : 678 **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 0 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : 0.00

CRASH RATE CALCULATION :

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(ADT * 365)}$$

Comments : No crashes reported at this intersection in the years 2007, 2008, and 2009.

Project Title & Date: Marina Bay

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : QUINCY COUNT DATE : 6/7/2012

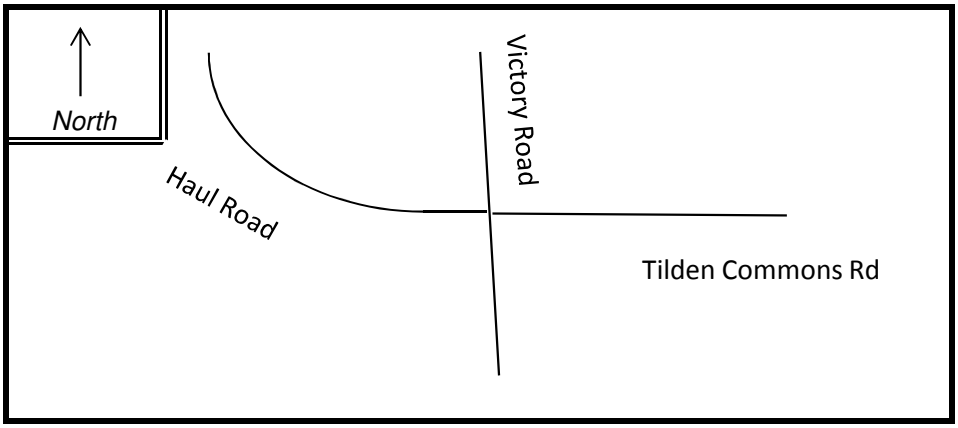
DISTRICT : 6 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Victory Road

MINOR STREET(S) : Miwra Haul Road

INTERSECTION DIAGRAM (Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	→	←	↑	↓		
VOLUMES (AM/PM) :	66	41	378	236		721

" K " FACTOR : 0.180 APPROACH ADT : 4,006 **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 1 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : 0.33

CRASH RATE CALCULATION : 0.23

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(ADT * 365)}$$

Comments :

Project Title & Date: Marina Bay

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : QUINCY COUNT DATE : 8/14/2012

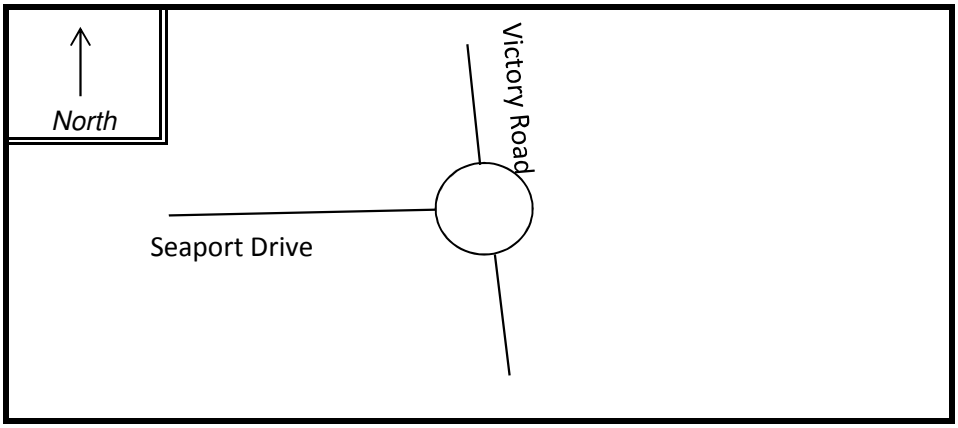
DISTRICT : 6 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Victory Road

MINOR STREET(S) : Seaport Drive

INTERSECTION DIAGRAM
(Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	→	↑	↓			
VOLUMES (AM/PM) :	304	558	410			1,272

" K " FACTOR : 0.180 APPROACH ADT : 7,067 **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 4 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : 1.33

CRASH RATE CALCULATION : 0.52

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(ADT * 365)}$$

Comments :

Project Title & Date: Marina Bay

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : QUINCY COUNT DATE : 6/7/2012

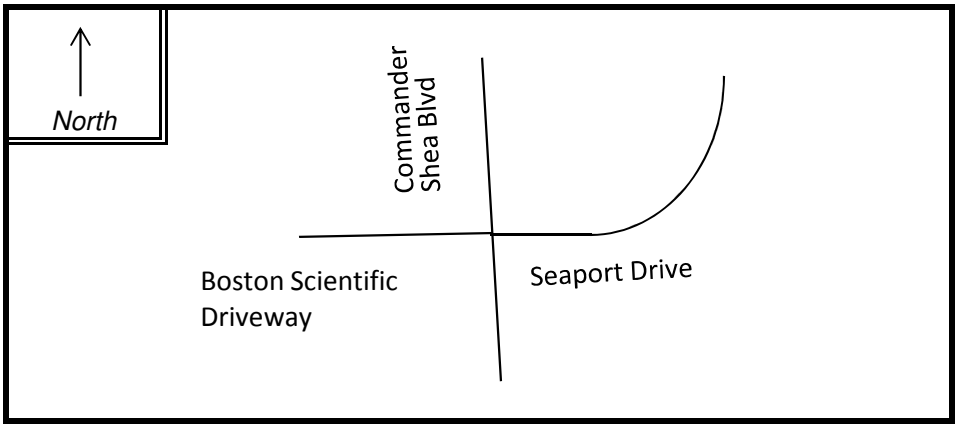
DISTRICT : 6 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Commander Shea Blvd

MINOR STREET(S) : Seaport Drive

INTERSECTION DIAGRAM
(Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	→	←	↑	↓		
VOLUMES (AM/PM) :	4	654	307	99		1,064

" K " FACTOR : 0.180 APPROACH ADT : 5,911 **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 2 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : 0.67

CRASH RATE CALCULATION : 0.31 RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Comments :

Project Title & Date: Marina Bay

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : QUINCY COUNT DATE : 6/7/2012

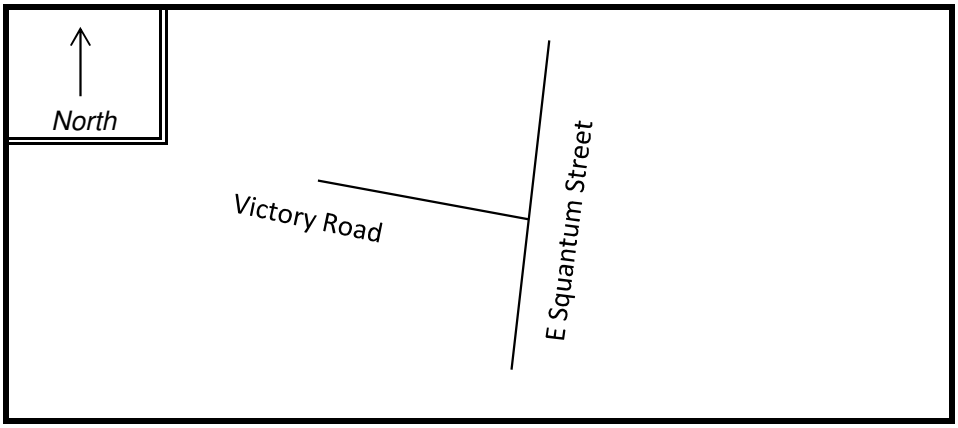
DISTRICT : 6 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : East Squantum Street

MINOR STREET(S) : Victory Road

INTERSECTION DIAGRAM
(Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	→	↑	↓			
VOLUMES (AM/PM) :	536	955	756			2,247

" K " FACTOR : 0.180 APPROACH ADT : 12,483 **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 5 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : 1.67

CRASH RATE CALCULATION : 0.37

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(ADT * 365)}$$

Comments :

Project Title & Date: Marina Bay

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : QUINCY COUNT DATE : 6/7/2012

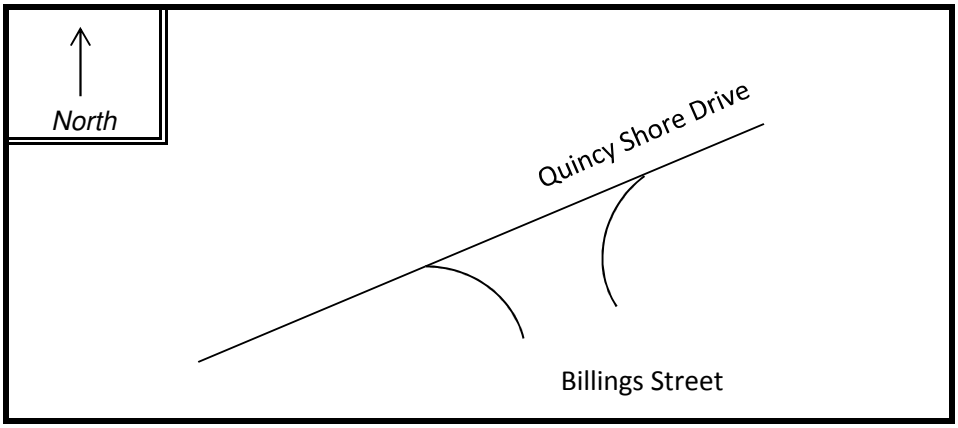
DISTRICT : 6 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Quincy Shore Drive

MINOR STREET(S) : Billings Street

INTERSECTION DIAGRAM
(Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	→	←	↖			
VOLUMES (AM/PM) :	827	543	88			1,458

" K " FACTOR : 0.180 APPROACH ADT : 8,100 **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 0 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : 0.00

CRASH RATE CALCULATION :

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(ADT * 365)}$$

Comments : No crashes reported at this intersection in the years 2007, 2008, and 2009.

Project Title & Date: Marina Bay

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : QUINCY COUNT DATE : 6/14/2012

DISTRICT : 6 UNSIGNALIZED : X SIGNALIZED :

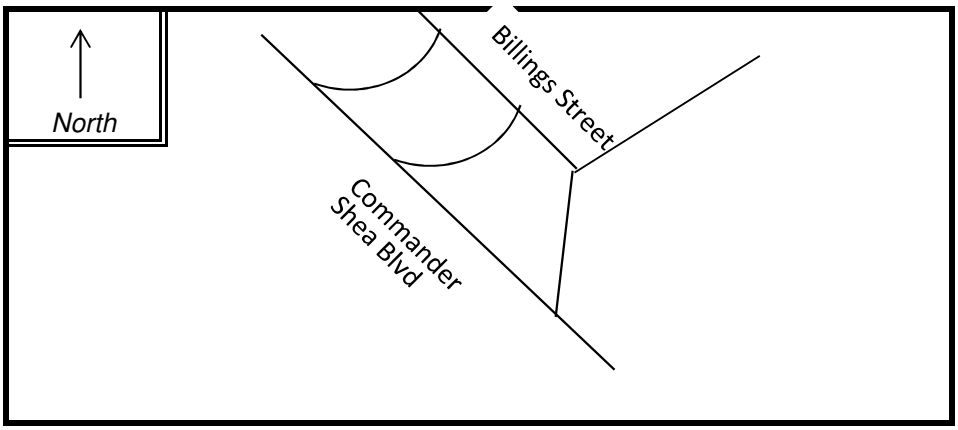
~ INTERSECTION DATA ~

MAJOR STREET : Commander Shea Boulevard

MINOR STREET(S) : Ramps to Quincy Shore Drive

Ramp from Quincy Shore Drive

INTERSECTION DIAGRAM (Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	↙	↖	↘			
VOLUMES (AM/PM) :	85	559	368			1,012

" K " FACTOR : 0.180 APPROACH ADT : 5,622 **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 0 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : 0.00

CRASH RATE CALCULATION :

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(ADT * 365)}$$

Comments : No crashes reported at this intersection in the years 2007, 2008, and 2009.

Project Title & Date: Marina Bay

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : QUINCY COUNT DATE : 1/8/2013

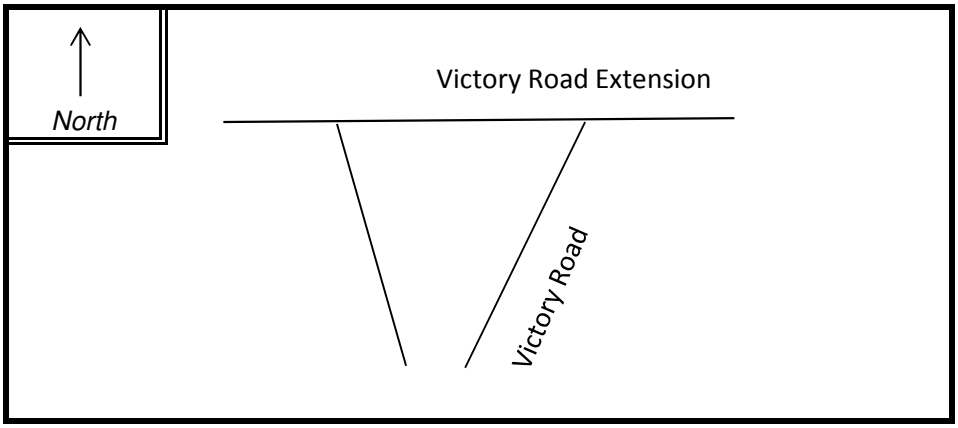
DISTRICT : 6 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Victory Road Extension

MINOR STREET(S) : Victory Road

INTERSECTION DIAGRAM
(Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	→	←	↑			
VOLUMES (AM/PM) :	171	56	306			532

" K " FACTOR : **0.180** APPROACH ADT : **2,958** **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 0 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : **0.00**

CRASH RATE CALCULATION :

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(ADT * 365)}$$

Comments :

Project Title & Date: Marina Bay

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : QUINCY COUNT DATE : 1/8/2013

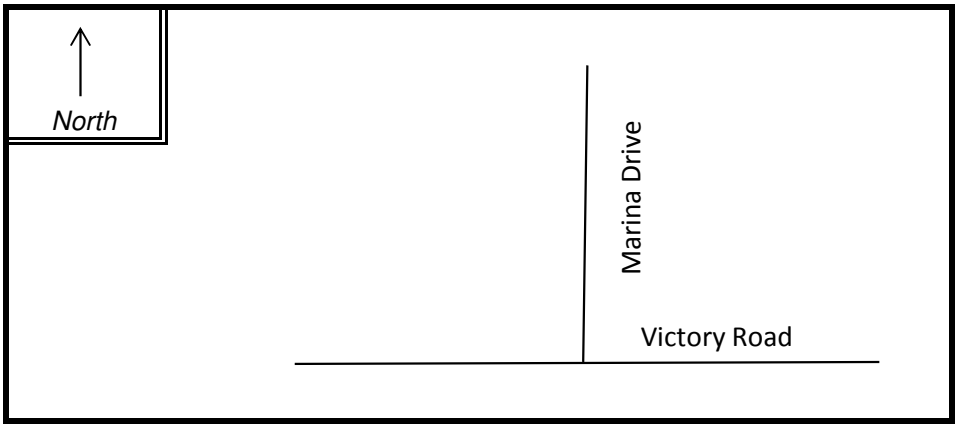
DISTRICT : 6 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Victory Road

MINOR STREET(S) : Marina Drive

INTERSECTION DIAGRAM (Label Approaches)



Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	→	←	↓			
VOLUMES (AM/PM) :	439	654	152			1,245

" K " FACTOR : 0.180 APPROACH ADT : 6,917 **ADT** = TOTAL VOL/"K" FACT.

TOTAL # OF CRASHES : 2 # OF YEARS : 3 AVERAGE # OF CRASHES (**A**) : 0.67

CRASH RATE CALCULATION : 0.26 RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Comments :

Project Title & Date: Marina Bay

Appendix D. Trip Generation

Marina Bay

Detailed Trip Generation Estimate

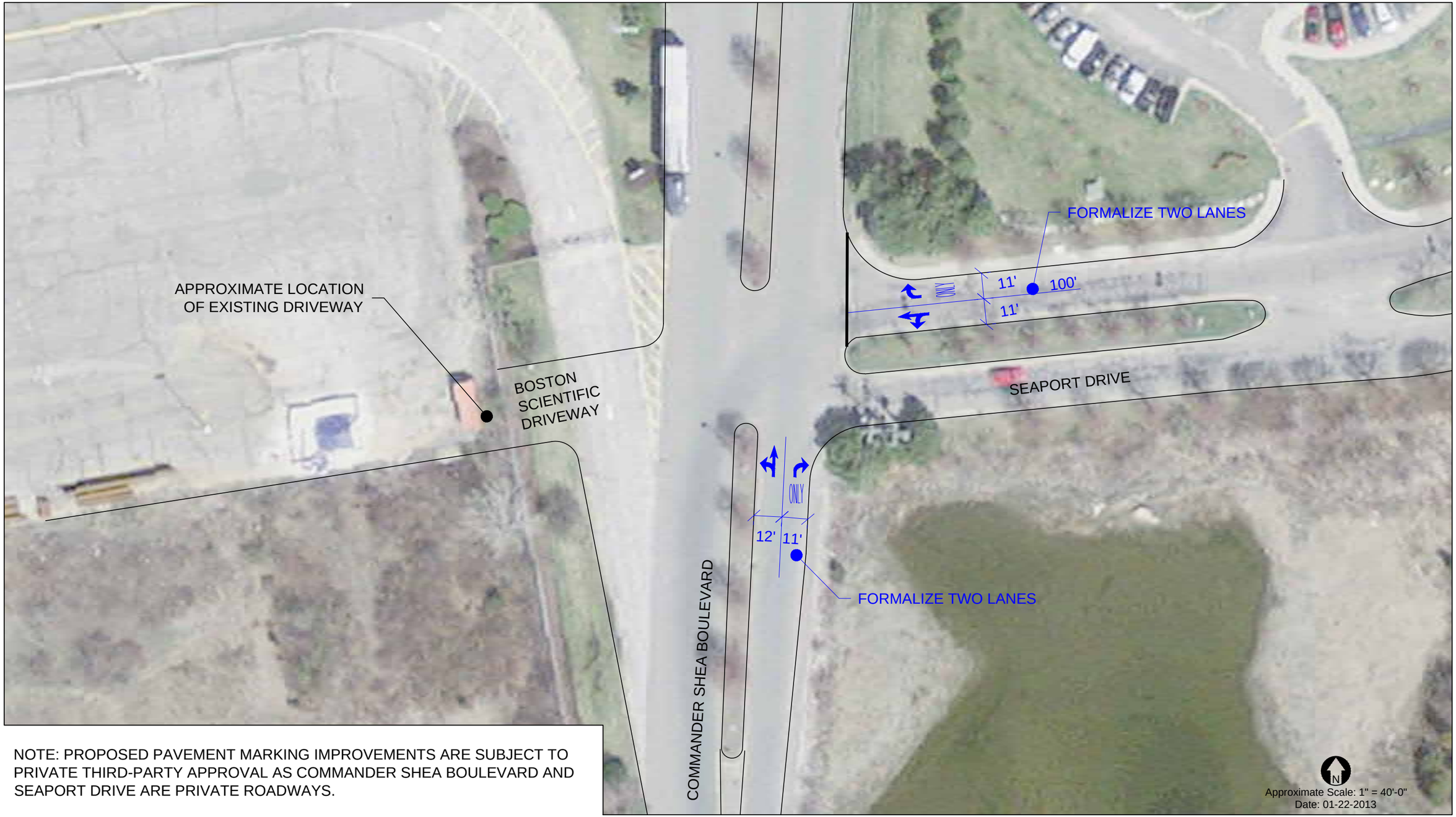
Howard/Stein-Hudson Associates

Land Use	Size	Category	Trip Rates (Trips/ksf or unit)	Directional Distribution	Unadjusted Vehicle Trips	Capture %	Less capture trips	**Total Adjusted Vehicle Trips**
Daily Trip Generation								
Apartment [2]								
	382	Total	6.65		2,540	0%	2,540	**2,540**
	Units	In	3.33	50%	1,270	0%	1,270	**1,270**
		Out	3.33	50%	1,270	0%	1,270	**1,270**
Retail [4]								
	18.5	Total	42.70		790	25%	592	**592**
	KSF	In	21.35	50%	395	25%	296	**296**
		Out	21.35	50%	395	25%	296	**296**
Total		Total			3,330			**3,132**
		In			1,665			**1,566**
		Out			1,665			**1,566**
AM Peak Hour Trip Generation								
Apartment [3]								
	382	Total	0.50		191	0%	191	**191**
	Units	In	0.10	20%	38	0%	38	**38**
		Out	0.40	80%	153	0%	153	**153**
Retail [4]								
	18.5	Total	0.96		18	0%	18	**18**
	KSF	In	0.60	62%	11	0%	11	**11**
		Out	0.36	38%	7	0%	7	**7**
Total		Total			209			**209**
		In			49			**49**
		Out			159			**160**
PM Peak Hour Trip Generation								
Apartment [3]								
	382	Total	0.60		228	0%	228	**228**
	Units	In	0.39	65%	148	0%	148	**148**
		Out	0.21	35%	80	0%	80	**80**
Retail [4]								
	18.5	Total	3.71		69	0%	69	**69**
	KSF	In	1.78	48%	33	0%	33	**33**
		Out	1.93	52%	36	0%	36	**36**
Total		Total			296			**297**
		In			181			**181**
		Out			115			**116**
Saturday Daily Trip Generations								
Apartment [2]								
	382	Total	6.39		2,440	0%	2,440	**2,440**
	Units	In	3.20	50%	1,220	0%	1,220	**1,220**
		Out	3.20	50%	1,220	0%	1,220	**1,220**
Retail [4]								
	18.5	Total	49.97		924	25%	694	**693**
	KSF	In	24.99	50%	462	25%	347	**347**
		Out	24.99	50%	462	25%	347	**347**
Total		Total			3,364			**3,134**
		In			1,682			**1,567**
		Out			1,682			**1,567**
Saturday Mid-day Peak Hour Trip Generation								
Apartment [2]								
	382	Total	0.52		198	0%	198	**198**
	Units	In	0.30	57%	113	0%	113	**113**
		Out	0.22	43%	85	0%	85	**85**
Retail [4]								
	18.5	Total	4.82		89	0%	89	**89**
	KSF	In	2.51	52%	46	0%	46	**46**
		Out	2.31	48%	43	0%	43	**43**
Total		Total			291			**287**
		In			162			**160**
		Out			130			**128**

1. 2001 National vehicle occupancy rates - 1.1: Home to work; 1.8: Retail; 2.2: Social and Recreational
2. ITE Trip Generation Equation, 9th Edition, LUC 220 (Apartment), average rate
3. ITE Trip Generation Equation, 9th Edition, LUC 220 (Apartment), fitted curve
4. ITE Trip Generation Rate, 9th Edition, LUC 820 (Shopping Center), Average Rate

Note: Directional distribution for Saturday Mid-Day Peak Hour was not given for LUC 220.
Distribution for LUC 222: High-Rise Apartment was used.

Appendix E. Concept Plan: Proposed Pavement Marking Improvements at Seaport Drive/Commander Shea Boulevard



NOTE: PROPOSED PAVEMENT MARKING IMPROVEMENTS ARE SUBJECT TO PRIVATE THIRD-PARTY APPROVAL AS COMMANDER SHEA BOULEVARD AND SEAPORT DRIVE ARE PRIVATE ROADWAYS.

Concept Plan: Proposed Pavement Marking Improvements at Seaport Drive/Commander Shea Boulevard

Howard/Stein-Hudson Associates, Inc.
38 Chauncy St., 9th Floor
Boston, MA 02111
617.482.7080

L:\11140\CURRENT\Intersection Concepts\Seaport Drive-Commander Shea-Boston Scientific.dwg, 1/22/2013 4:15:43 PM

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